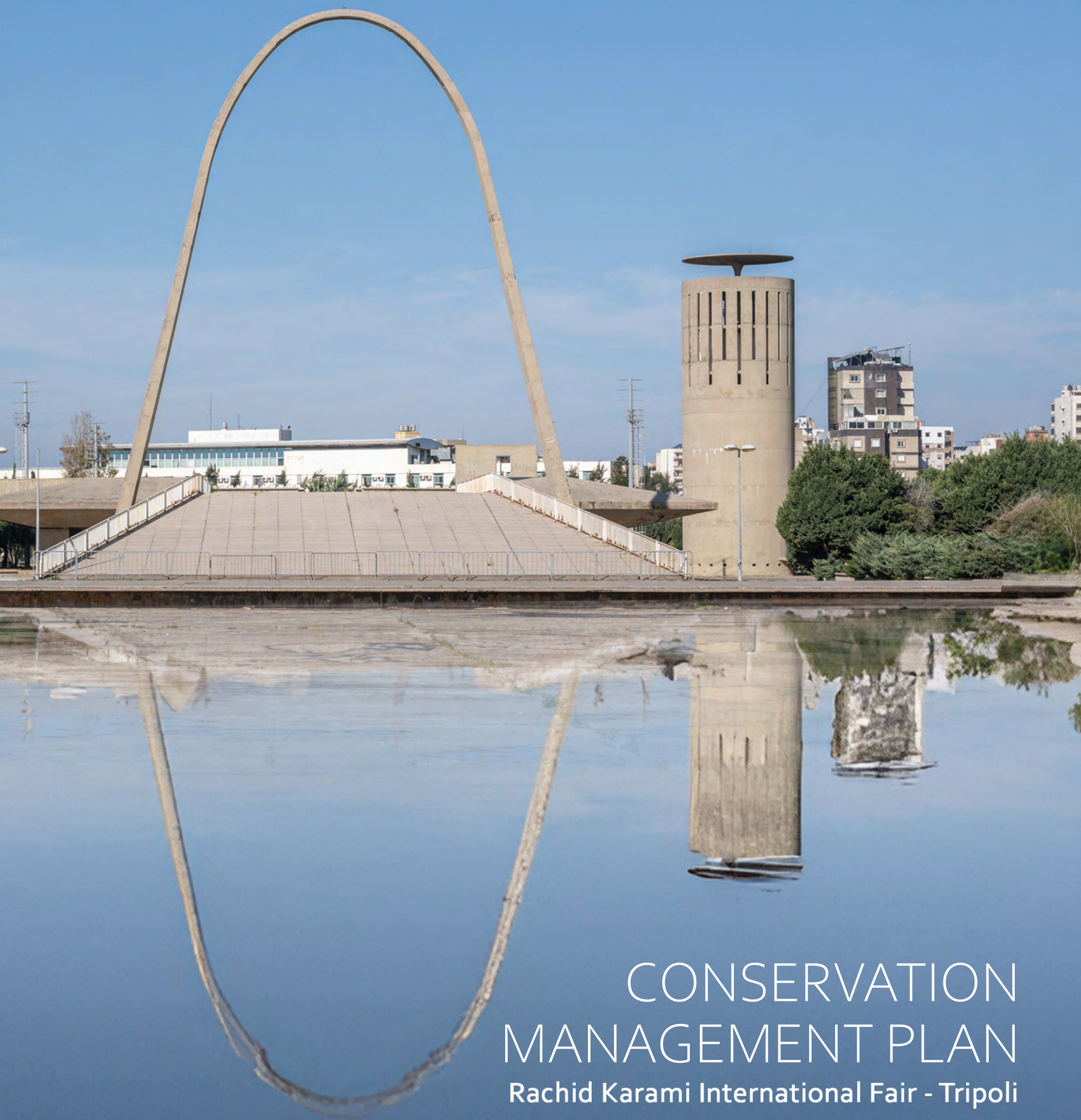




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CONSERVATION MANAGEMENT PLAN

Rachid Karami International Fair - Tripoli

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CONSERVATION MANAGEMENT PLAN

Rachid Karami International Fair - Tripoli

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- NGOs and CSOs
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- Heritage Practitioners
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- Developers and Users of RKIF
- UNESCO Project Interns

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List of Acronyms

ACE	Associated Contracting Engineers
ACTS	Advanced Construction Technology Services
ADF	Arab Deterrent Force
BECA	<i>Bureau d'Etudes Civiles et d'Architecture</i>
BOT	Build, Operate, and Transfer
CDL	<i>Commerce du Levant</i>
CEGP	<i>Conseil Exécutif des Grands Projets</i>
CIDG	Cedarland International Development Group
CLF	<i>Cultural Landscape Foundation</i>
CMAI	Conserving Modern Architecture Initiative
CMP	Conservation Management Plan
CSU	Higher Council for Urban Planning
DBOT	Design, Build, Operate, and Transfer
DGA	Directorate General of Antiquities
DGU	Directorate General of Urbanism
DOCOMOMO	International Committee for the Documentation and Conservation of Buildings, Sites, and Neighborhoods of the Modern Movement
DSOCR	Desired State of Conservation for Removal
FOT	Furnish, Operate, and Transfer
GCI	Getty Conservation Institute
HIA	Heritage Impact Assessment
ICCROM	International Centre for the Study of the Preservation and Restoration of Cultural Property
ICOMOS	International Council on Monuments and Sites
IFLA	International Federation of Landscape Architects
IRFED	Institut de Recherche et de Formation en vue de Développement
ISC20C	ICOMOS International Scientific Committee on Twentieth-Century Heritage
ISCCL	ICOMOS International Scientific Committee of Cultural Landscapes
UIA	Union Internationale des Architectes [International Union of Architects]
IUCN	International Union for the Conservation of Nature

KIC	Knowledge and Innovation Center
KIM	Keeping It Modern
LAF	Lebanese Army Forces
LELA	Lebanese Landscape Association
LPC	Landmarks Preservation Commission (New York)
MENA	Middle East and North Africa
MoE	Ministry of Economy and Trade
NDE	Non-Destructive Evaluation
NGO	Non-Governmental Organization
NRHP	National Register of Historic Places
OAT	Open-Air Theatre
OEA	Order of Engineers and Architects
OMA	Office of Metropolitan Architecture
OUV	Outstanding Universal Value
PANYNJ	Port Authority of New York and New Jersey
RKIF	Rachid Karami International Fair
SOUV	Statement of Outstanding Universal Value
SSA	Sea Salt Aerosols
TSEZ	Tripoli Special Economic Zone
UBO	UNESCO Beirut Office
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNHCR	United Nations High Commissioner for Refugees
WHC	World Heritage Centre
WJE	Wiss, Janney, Elstner Associates, Inc.
WMF	World Monuments Fund



CHAPTER 1

Introduction

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INTRODUCTION

The Rachid Karami International Fair (RKIF) was designed by renowned Brazilian architect Oscar Niemeyer in 1962, as a permanent fairground, exhibition, and cultural center in Tripoli, 83 km north of the capital Beirut. However, the outbreak of the Civil War and its aftermath hindered the Fairground's completion and its intended use, function, and operation. Today, RKIF is considered one of the most iconic architectural projects of the mid-20th century period in Lebanon, if not the region. While it remains in a state of disrepair, there are over 20 structures extant, including exhibition spaces, pavilions, theaters, museums, and residences, as well as structures for auxiliary services. The variation of the structures is based on their initially intended functions and a distinction in their architectural sculpted forms: while they belong to a coherent whole through a modernist landscape, each structure has a unique architectural identity. In January 2023, RKIF was recognized by UNESCO as a World Heritage Site for its Outstanding Universal Value (OUV); however, it was simultaneously placed on the World Heritage in Danger List due to its declining state of disrepair.

The Fairground's structures remain vulnerable to decay, and a program of stabilization and repair work is needed to ensure its survival as a recognized modern heritage of the mid-20th century. However, before undertaking physical repairs, restoration, or other adaptive reuse initiatives, a consensus on a general conservation approach including guidance policies is essential. Similar policies are usually

compiled within a planning document known as a Conservation Management Plan (CMP).

Such plans act as a guiding tool for property owners, managers, and/or custodians to better inform their decisions related to the future conservation and development of heritage places.



Map of Lebanon, showing the location of Tripoli, North of Beirut.

Source: United Nations, Department of Field Support Cartographic Section, Map 4282 January 2010, <https://www.un.org/geospatial/content/lebanon> (accessed March 27, 2024).

© United Nations, 2010

1.1 Project Background

Given UNESCO's mandate to protect and promote cultural heritage generally, and its mission to promote the preservation of 20th-century modern heritage, the UNESCO Beirut Office began the process of developing a Conservation Management Plan (CMP) for RKIF in 2019, with the support of Getty's Keeping It Modern (KIM) initiative.¹ The implementation of the project started in 2019, shortly after RKIF was admitted to UNESCO's World Heritage Tentative List in 2018 and the CMP was concluded by December 2023. It is worth mentioning that RKIF's CMP project was one of the 77 grant proposals awarded by Getty's KIM initiative since 2018, based on its outstanding significance as modern heritage internationally and its capacity to contribute to advancing conservation practice in this part of the Middle East.

Throughout this project, the UNESCO Beirut Office (UBO) has closely collaborated with the RKIF Administrative Board (Administration) and the two concerned Ministries; the Ministry of Economy and Trade and the Ministry of Culture. UBO has also been in contact with other concerned stakeholders (i.e. the Order of Engineers and Architects OEA - Tripoli, potential investors, local universities, NGOs, and heritage professionals, etc.) at different levels and with varying degrees to ensure the conservation of Niemeyer-designed structures and landscape while the CMP policies are being drafted. The aim is to ensure the transmission of the historical and current importance of the Fair and the need for more cautious approaches to its conservation including any intervention that might alter or jeopardize the Fairground's overall integrity and authenticity, or the World Heritage criteria for which it is listed, in other terms its OUV.



Satellite image of Tripoli showing the location of Rachid Karami International Fairground, the main highway in red and other attractions.

Source: Adapted from Google Earth.

¹ Keeping It Modern (KIM) improves the care of modern architecture internationally through research, conservation plans, and training that build best practices for a still-emerging field. <https://www.getty.edu/projects/keeping-it-modern/#about> (accessed May 23, 2023).

The RKIF-CMP project is a pilot project in Lebanon, through which UBO aims to set the standards and provide guidelines suitable for the local context and encourage similar practices to be adopted in the future for all types of heritage buildings. Within the framework of this project, UBO collaborated with a multidisciplinary team of local and international consultants to conduct the research and studies necessary to develop this CMP for the Rachid Karami International Fair in Tripoli and to develop the guiding principles that could be used as a tool to inform future conservation of the complex including future reuse and development plans based on accepted international standards and practices.²

1.2 CMP Objectives

A conservation management plan (CMP) or a conservation plan is a document that “sets out what is significant about a place and from this, what policies are appropriate to enable that

significance to be retained as part of its future use and development.” In most cases, a CMP deals with the ongoing care of a place and the management of change.³

The RKIF-CMP acts as a road map for managing RKIF as a place of significance. It sets the framework for managing change. While doing so, it outlines the limits of acceptable change that will not harm the significance of this World Heritage site but rather, enhances it.

This CMP articulates the diverse values of RKIF, including its Outstanding Universal Value as a World Heritage site. It addresses the contextual multi-layered challenges and outlines appropriate conservation, management, and treatment policies and guidelines to preserve and retain the Fair’s significance in any future intervention, regardless of its scale.



Aerial view of RKIF, looking north.

© Chawki Fattar, 2018

- ² For more information about the RKIF-CMP project and the project team, refer to the project-dedicated webpage on UNESCO’s website: <https://www.unesco.org/en/articles/developing-conservation-management-plan-tripoli-fair?hub=802> (accessed May 23, 2023).
- ³ James Semple Kerr, *Conservation Plan: A Guide to the Preparation of Conservation Plans for Places of European Cultural Significance*. 7th ed. (Sydney, NSW: National Trust of Australia, 2013): 1. <https://australia.icomos.org/publications/the-conservation-plan/> (accessed March 20, 2022).



Aerial view of RKIF, looking north.
Courtesy of Carl Stephan.

1.3 CMP Approach and Methodology

The RKIF-CMP process and approach were guided by several internationally accepted standards and conservation principles developed by ICOMOS for the conservation and management of World Heritage Sites; namely, the *Burra Charter 2013 - The Australia ICOMOS Charter for Places of Cultural Significance*,⁴ *Nara Document on Authenticity 1994*,⁵ the *Madrid-New Delhi Document 2017 - Approaches to the Conservation of Twentieth - Century Cultural Heritage*,⁶ and the *Cadiz Document 2021 - InnovaConcrete Guidelines for the Conservation of Concrete Heritage*.⁷

The conservation process outlined in the *Burra Charter* below is utilized by the Getty Conservation Institute's program, Conserving Modern Architecture Initiative (CMAI).⁸ It is also embraced by the UNESCO Beirut Office since it is a tested methodology with sound results in terms of its capacity to secure informed and consistent decisions from a values-based management perspective toward the conservation of significant modern heritage places. Above all, such an approach and methodology are mandated by UNESCO for all World Heritage Sites.

⁴ Australia ICOMOS, *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance* (2013), <https://australia.icomos.org/wp-content/uploads/The-Burra-Charter-2013-Adopted-31.10.2013.pdf> (accessed May 23, 2023).

⁵ ICOMOS, *Nara Document on Authenticity* (1994), <https://www.icomos.org/en/charters-and-texts/179-articles-en-francais/ressources/charters-and-standards/386-the-nara-document-on-authenticity-1994> (accessed May 23, 2023).

⁶ ICOMOS International Scientific Committee on Twentieth Century Heritage (ISC20C), *Madrid-New Delhi Document: Approaches to the Conservation of Twentieth-Century Cultural Heritage* (2017), https://isc20c.icomos.org/policy_items/madrid-new-dehli-doc/#:~:text=The%20final%20text%3A%20Approaches%20for,English%20for%20comment%20and%20discussion (accessed May 23, 2023).

⁷ ICOMOS ISC20C, *Cadiz Document: InnovaConcrete Guidelines for the Conservation of Concrete Heritage* (2021), https://isc20c.icomos.org/policy_items/complete-innovaconcrete/ (accessed May 23, 2023).

⁸ The goal of the CMAI is to advance the practice of conserving 20th-century heritage, with a focus on modern architecture, through research and investigation, the development of practical conservation solutions, and the creation and distribution of information through training programs and publications. https://www.getty.edu/conservation/our_projects/field_projects/cmai/cmai_overview.html (accessed May 23, 2023).

The Burra Charter Process

Steps in planning for and managing a place of cultural significance

The Burra Charter should be read as a whole.

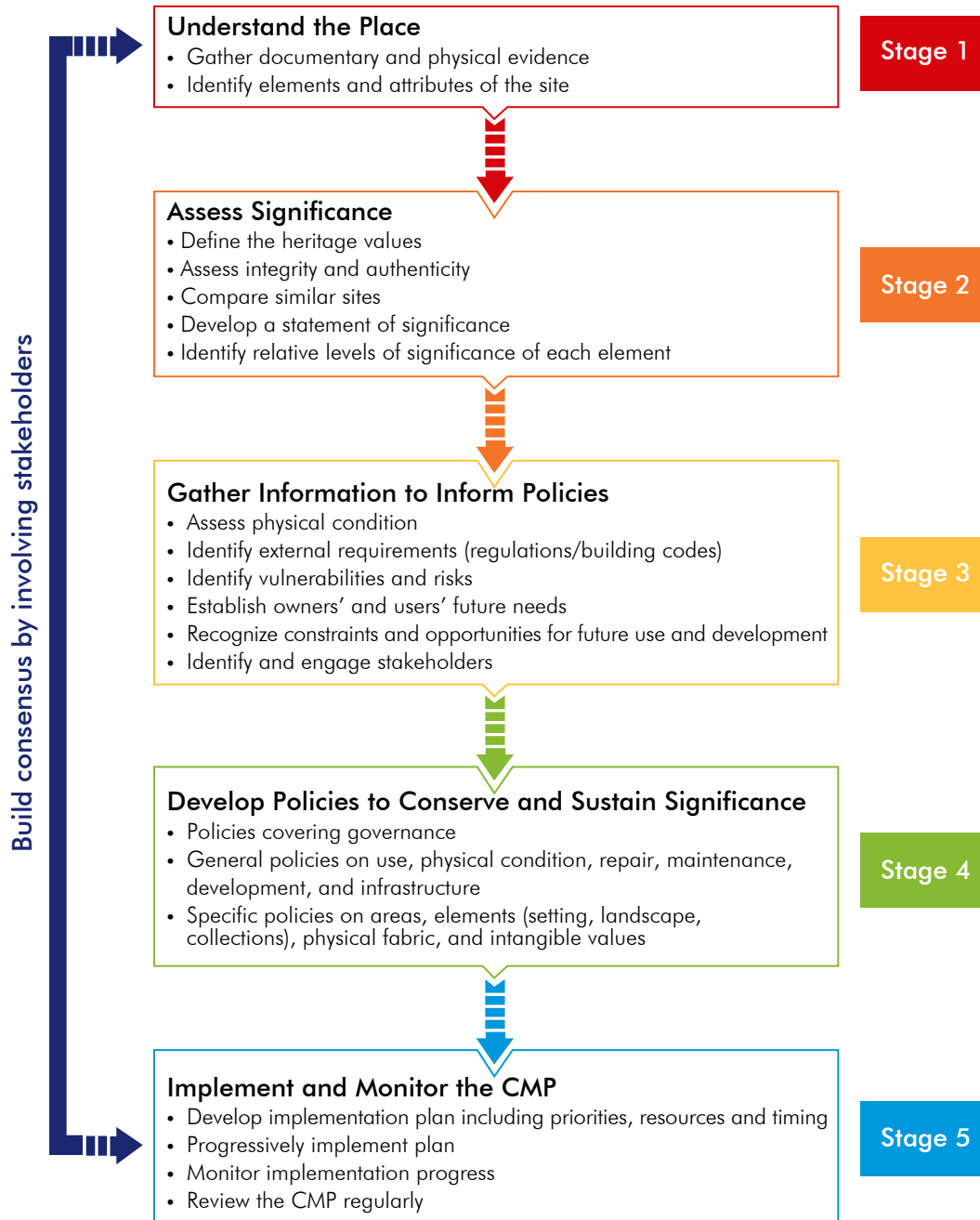
Key articles relevant to each step are shown in the boxes. Article 6 summarises the Burra Charter Process.



© The Australia ICOMOS Burra Charter, 2013

The *Burra Charter* process: steps in planning for and managing a place of cultural significance.

Source: Australia ICOMOS, *Burra Charter* (2013), 10.



© J. Paul Getty Trust

The GCI's chart of the five stages of the conservation planning process.
 Source: Adapted from the *Burra Charter* (Australia ICOMOS 2013a, 10). Courtesy of Getty Conservation Institute.

RKIF's CMP development has been guided by the five stages of the conservation planning process outlined by the Getty Conservation Institute's (GCI) chart above and by previously completed CMP projects. In particular, RKIF's CMP was inspired and guided by the CMP of the Salk Institute for Biological Studies (2016)⁹ and that of the Eames House developed by the Getty CMAI 2018.¹⁰ Both CMPs are good representative models for similar buildings from this era that demonstrate how thoughtful conservation planning applies to modern buildings.

Largely comprised of a research-based study, the first phase of this project entailed gathering information through archival research, oral histories, and field investigation. This field research assessed the general condition of the original historic fabric, construction techniques, and materials used. Moreover, the research further highlighted the Fair's defining characteristics (attributes), including its form, function, fabric, setting, and other intangible qualities. This phase facilitated an understanding of the Fair's management structure, encompassing both legal and administrative aspects, and contributed to identifying and engaging with existing and potential stakeholders and interest groups.

The analysis of collected data deepened the understanding of RKIF's context and supported the elaboration on the myriad values to be safeguarded and preserved. These encompass aesthetic, architectural, scientific, social, historic, urban, and cultural values, including both tangible and intangible dimensions. A comparative analysis with other inscribed World Heritage and Tentative List sites was necessary because neither RKIF's Tentative nor the Emergency Nomination dossiers provided one. Such comparative analysis not only assists in understanding the significance but also helps confirm the rarity of the proposed nomination. Therefore, a comparison with other inscribed World Heritage, Tentative List sites, and works of Niemeyer worldwide was conducted. RKIF was also compared to Mid-Century Modernist complexes in the Middle East and North Africa, and other surviving international fairs of the period to assess the rarity, and uniqueness of RKIF and hence, extrapolate its significance on the international, regional, and local levels.

Additionally, the CMP research and content took into consideration the site's Tentative Listing, and its subsequent inscription on the List of World Heritage in Danger and the accompanying

UNESCO's expert, Pamela Jerome, presented the results of the online survey during the public workshop held at RKIF on June 30 and July 1, 2022.



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⁹ Wiss, Janey, Elstner Associates, Inc.; Inskip and Gee Architects; and Liz Sargent HLA, *Conservation Management Plan. Salk Institute for Biological Studies* (Los Angeles: The Getty Foundation, redacted 2017).

¹⁰ Sheridan Burke, et al., *Eames House Conservation Management Plan* (Los Angeles: Getty Conservation Institute, 2018).



The UNESCO RKIF-CMP team with the RKIF Administrative Board and the DGA representative during the 2019 workshop.

Statement of Outstanding Universal Value (SOUV) for which it was inscribed. The identified values were synthesized into a concise statement of significance that also highlights the site's attributes. The relative levels of significance of individual elements and components of the RKIF complex were determined, ranging from exceptional to intrusive, based on their degree of authenticity, integrity, and overall condition. Understanding these levels of significance helps determine where necessary changes can or should occur and establishes the acceptable limits of intervention. Hence, it guides the development of specific and detailed conservation policies for RKIF as a World Heritage site.

From the assessment of significance and the relative levels of significance of RKIF's components, the development of policies emanated. Policies were divided into general overarching policies and specific detailed policies for the RKIF's structures and defined landscape character areas. Ultimately, UNESCO's RKIF-CMP team devised the conservation policies that best protect the

authenticity and character of the Fairground as a World Heritage Site while also aligning with the local context and the aspirations of the local community. Furthermore, these policies promote the sustainable development of Niemeyer's Rachid Karami International Fair in Tripoli without jeopardizing its integrity or authenticity.

The RKIF-CMP project adopted a participatory approach from its inception, inviting the Fair's Administration and other key stakeholders to participate during the CMP elaboration process and facilitate its later appropriation. UBO identified all parties who might be directly and indirectly concerned or interested in RKIF recognizing it as both a heritage resource and a development opportunity. Since the early stages of research and CMP development, meetings, interviews, and workshops have been conducted while involving these interest groups, each according to his area of concern. Public sessions were also held to facilitate discussions on the future of the Fair.¹¹

As part of UNESCO's commitment to inclusive participation, early consultation, and engagement,

¹¹ UNESCO, "First technical workshop to develop a Conservation Management Plan for RKIF: UNESCO Beirut gathers experts to develop a conservation management plan for Tripoli's Rachid Karami International Fair". UNESCO Beirut Office (August 22, 2019), <https://www.unesco.org/en/articles/first-technical-workshop-develop-conservation-management-plan-rkif> (accessed December 4, 2023); UNESCO, "Invitation to fill survey on Rachid Karami International Fair", UNESCO Beirut Office (November 5, 2020), <https://www.unesco.org/en/articles/invitation-fill-survey-rachid-karami-international-fair> (accessed December 4, 2023); UNESCO, "UNESCO holds a technical workshop at the Rachid Karami Fairgrounds to support its conservation", UNESCO Beirut Office (July 1, 2022), <https://www.unesco.org/en/articles/unesco-holds-technical-workshop-rachid-karami-fairgrounds-support-its-conservation> (accessed December 4, 2023).

the initial draft of this CMP was shared in June 2023 with key stakeholders (Ministry of Economy, RKIF Administrative Board, Ministry of Culture, Directorate General of Antiquities (DGA), ICOMOS-Lebanon, Order of Engineers and Architects (OEA-Tripoli) to gather their feedback. Consequently, their concerns and comments were discussed and collected during a workshop held on July 7, 2023. At the same time, the first CMP draft was also subject to peer review by Jad Tabet, an external expert who assisted the State Party in the World Heritage file preparation for RKIF. The UNESCO team incorporated the received feedback in this latest updated version.

UNESCO Beirut Office acknowledges the critical role of the RKIF Administration and that of the two Ministries; the Ministry of Economy and Trade and that of Culture, in implementing the CMP, and hence, in ensuring the preservation¹² of the significance of the RKIF complex (structures and landscape) for future generations.

1.4 Specialized Terminology

Throughout this document, several specialized terms are used based on their definition in the heritage conservation field, *i.e.* the terms place, cultural significance, conservation, maintenance, preservation, restoration, reconstruction, adaptation, use, adaptive reuse, compatible use, etc. It should be noted that, as a consequence, the meanings used in this CMP may differ from their colloquial (popular) meanings.¹³ For this reason, a Glossary is included at the end of this document for ease of reference, and below are some of the most common terminologies used in the CMP. Below is a list of the main

terminologies that are used as defined in the *Burra Charter*:¹⁴

- **Place** means a geographically defined area. It may include elements, objects, spaces, and views. A place may have tangible and intangible dimensions.
- **Cultural significance** means aesthetic, historic, scientific, social, or spiritual value for past, present, or future generations. Cultural significance is embodied in the place itself, its fabric, setting, use, associations, meanings, records, related places, and related objects. Places may have a range of values for different individuals or groups.
- **Conservation** is an umbrella term that embraces all the processes of looking after a place to retain its cultural significance. It may include preservation, restoration, reconstruction, or adaptation/adaptive reuse – see below.
- **Compatible use** means a use that involves no change to the culturally significant fabric, changes that are mainly reversible, or changes with minimal impact.
- **Maintenance** is the act of keeping property or equipment continuously in good condition – it is distinguished from making repairs, and/or correcting problems.

Below is a list of the main terminologies that are used as defined by the US Secretary of the Interior:¹⁵

¹² Refer to section 1.4 on “Specialized Terminology” for the definition of this term as used in the conservation practice.

¹³ A full list of terms can be found in the Glossary at the end of this CMP.

¹⁴ *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance* (2013), <https://australia.icomos.org/wp-content/uploads/The-Burra-Charter-2013-Adopted-31.10.2013.pdf> (accessed May 23, 2023).

¹⁵ *The Secretary of the Interior’s Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* is the nationally recognized tool that guides historic preservation in the United States. Anne Grimmer, *The Secretary of the Interior’s Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings*. Revised edition. (Washington, DC: National Park Service, 2017), <https://www.nps.gov/orgs/1739/upload/treatment-guidelines-2017-part1-preservation-rehabilitation.pdf> (accessed June 12, 2022).

- **Preservation** is defined as the act or process of applying measures necessary to sustain the existing form, integrity, and materials of a historic property. Work, including preliminary measures to protect and stabilize the property, generally focuses on the ongoing maintenance and repair of historic materials and features rather than extensive replacement and new construction. The limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a preservation project. However, new exterior additions are not within the scope of this treatment. The *Standards for Preservation* require the retention of the greatest amount of historic fabric along with the building's historic form.
- **Rehabilitation** is the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features that convey its historical, cultural, or architectural values. The *Rehabilitation Standards* acknowledge the need to alter or add to a historic building to meet continuing or new uses while retaining the building's historic character.
- **Restoration** is the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time, by means of the removal of features from other periods in its history and reconstruction of missing features from the restoration period. The limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a restoration project. The *Restoration Standards* allow for the

depiction of a building at a particular time in its history by preserving materials, features, finishes, and spaces from its period of significance and removing those from other periods.

- **Reconstruction** is defined as the act or process of depicting, by means of new construction, the form, features, and detailing of a non-surviving site, landscape, building, structure, or object for the purpose of replicating its appearance at a specific period of time and in its historic location. The *Reconstruction Standards* establish a limited framework for recreating a vanished or non-surviving building with new materials, primarily for interpretive purposes.

Other terms, such as Outstanding Universal Value, integrity, and authenticity, are used in the CMP. Their definitions have been drawn from the *Operational Guidelines for the Implementation of the World Heritage Convention*:¹⁶

- **Outstanding Universal Value (OUV)** means cultural and/or natural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity. As such, the permanent protection of this heritage is of the highest importance to the international community as a whole. The World Heritage Committee defines the OUV criteria for the inscription of properties on the World Heritage List.
- **Authenticity** is a measure of the honesty of a place as an authentic product of its history and of historical processes. Cultural heritage places may meet the conditions of authenticity if their cultural values are truthfully and credibly expressed

¹⁶ World Heritage Centre, *Operational Guidelines for the Implementation of the World Heritage Convention* (July 2019), <https://whc.unesco.org/document/178167> (accessed May 23, 2023).

through a variety of attributes such as form and design, materials and substance, traditions, techniques and management systems, location and setting, language and other forms of intangible heritage, spirit, and feeling. Sources of information about these cultural values should also be credible and truthful.

- **Integrity** is a measure of the wholeness and intactness of the place and its attributes. Examining the conditions of integrity, therefore, requires assessing the extent to which the property: (a) includes all elements necessary to express its Outstanding Universal Value; (b) is of adequate size to ensure the complete representation of the features and processes which convey the property's significance; (c) suffers from adverse effects of development and/or neglect.
- **Attributes** are aspects of the place that individually or in combination contribute to heritage significance. They "include its physical location, form, fabric, and use, its planning methods, design (including color schemes), construction systems and technical equipment, as well as its aesthetic qualities".¹⁷ They may include views and relationships between elements as well as traditions, associations, and the experience, spirit, and feeling of the place.

1.5 Limitations

Given the large scale of the RKIF complex, which includes more than 20 structures spread over an area of 760,000 ha, a general conditions assessment of the RKIF structures and the associated landscape was undertaken. Only the threatened portion of the Open-Air Theatre (OAT), the Monumental Arch, and the collapsed

soffit of OAT had the benefit of further structural analysis and material testing following the request of the RKIF Administrative Board. Further detailed architectural and structural analysis and condition assessments for individual structures are needed before any intervention including repair.

Emphasis should be made that this CMP is a policy document and not an action plan. However, it provides recommendations for implementing priority tasks according to a logical time frame. It does not include any work plans or specifications for conserving a particular structure; hence, it does not replace the need for additional studies and plans. As an umbrella document, it recommends and sets the framework that guides additional plans and projects, *i.e.* a short-, medium-, long-term action plan, maintenance plan, interpretation plan, visitor management plan, risk management plan, landscape management plan, archival management plan, and the like. Although highly recommended and needed, such plans are beyond the scope of this CMP.

While this plan adheres to international standards, it has been customized to address the specific needs and unique requirements of RKIF and its stakeholders. This CMP has been crafted based on the current state of knowledge of the Fair. Nevertheless, as new studies emerge and needs and values change, periodic revisions and updates of this CMP may be necessary to align with its objectives. Given the deteriorating state of conservation and the subsequent emergency inscription on the World Heritage in Danger List, additional studies are anticipated, and their findings will require to be regularly incorporated into the CMP.

¹⁷ ICOMOS International Scientific Committee on Twentieth Century Heritage, *Madrid-New Delhi Document: Approaches to the Conservation of Twentieth-Century Cultural Heritage* (2017): 4, https://isc20c.icomos.org/policy_items/madrid-new-dehli-doc/#:~:text=The%20final%20text%3A%20Approaches%20for,English%20for%20comment%20and%20discussion (accessed May 23, 2023).

1.6 RKIF-CMP Team

1.6.1 Editors, Contributors and Collaborators

This Conservation Management Plan for RKIF was prepared by a multidisciplinary team of local and international specialized consultants:

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- Pamela Jerome, Preservation Architect and Heritage Specialist
- Kyle Normandin, Architectural Conservator

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Other Contributors:

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1.6.2 Project Management and Coordination

The project was initiated, directed, and overseen by Joseph Kreidi, National Professional Officer for Culture at UNESCO Multisectoral Regional Office-Beirut, with administrative support from Fadia Jardak.

The CMP technical coordination and management were entrusted to Maya Hmeidan, a Heritage Specialist Consultant at UNESCO Multisectoral Regional Office-Beirut, who also conducted a thorough review of the CMP content.



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RKIF-CMP Team during site inspection.

¹⁸ See Appendix 5 for abbreviated biographies.



CHAPTER 2

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UNDERSTANDING THE PLACE

2.1 The Site

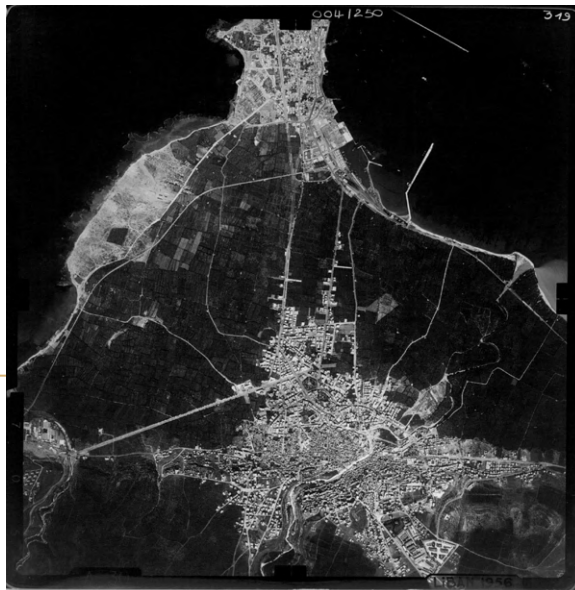
2.1.1 History, Development, and Adaptation

The Rachid Karami International Fair (RKIF) was built on a large agricultural area separating the city of Tripoli from the coastal city of El Mina in the west. Tripoli and El Mina, today two separate entities, were only one entity before the end of the 13th century.¹⁹ Until the end of the Crusader period, Tripoli was a coastal city. The Mamluks destroyed the coastal town in 1289 and then built another one three kilometers inland along the Abu Ali River. With the return of political stability in the region, Tripoli became a city with two distinct poles: the port or El Mina (the original site) and the city or Medina in its center.

During the centuries that followed, the city played an important political and economic role in the region. It was the capital of a large territory, both during the Mamluk (1289-1516) and the Ottoman (1516-1918) periods, as well as a port for the city of Damascus. At the beginning of the 20th century, the two poles were connected by a line of horse-drawn trams. This line ran through orange groves irrigated by the Abu Ali River, which originates in the Qadisha Valley and cuts through the Medina, emptying into the sea further north. It is this fertile plain that gives the site of Tripoli its triangular shape.

In the first half of the 20th century, agriculture was one of the pillars of the region's economy with some of its products exported.²⁰ The agricultural lands, where RKIF would be sited, were called *As Saki* in Arabic (the irrigated lands) and they were mostly used to plant citrus fruits. The lands were fenced and divided according to real-estate parcels. Each parcel had a name, derived from the name of its owner or the quality of its soil, or some other nomenclature.²¹ The majority of these orchards were either owned by religious *Waqfs*²² or by Tripolitan families.

During the 21st century, a progressive urban sprawl occurred at the expense of agricultural areas, especially between El Mina and Tripoli. The construction of the Fair in this area is likely



Aerial view of Tripoli (1956) showing the agricultural lands between the two cities of Tripoli and El Mina. The Fair was built to the west of the City of Tripoli.

Source: Lebanese Army Forces - Directorate of Geographic Affairs*.

¹⁹ El Mina became independent from Tripoli in the Ottoman period when its municipality was created in 1882.

²⁰ Mohamad Nouredine Mikati, *طرابلس في النصف الأول من القرن العشرين ميلادي* [Tripoli in the first half of the 20th century] (Beirut: Dar Al Inshaa, 1978), 121; Maha Kayal and Atef Attieh, *تحولات الزمن الأخير* [Recent Transformations] (Beirut: Mokhtarat, 2001), 149.

²¹ *Ibid.*, (1978, 121); *op.cit.*, (2001, 146).

²² *Waqf* (plural *Awqaf*) is an Arabic word meaning assets that are donated, bequeathed, or purchased for being held in perpetual trust for general or specific charitable causes that are socially beneficial. In many ways, the concept of *waqf* is similar to the western concept of endowment.

to have accelerated this process considering the economic and political factors that marked the Lebanese territory from this period of its construction until the present.

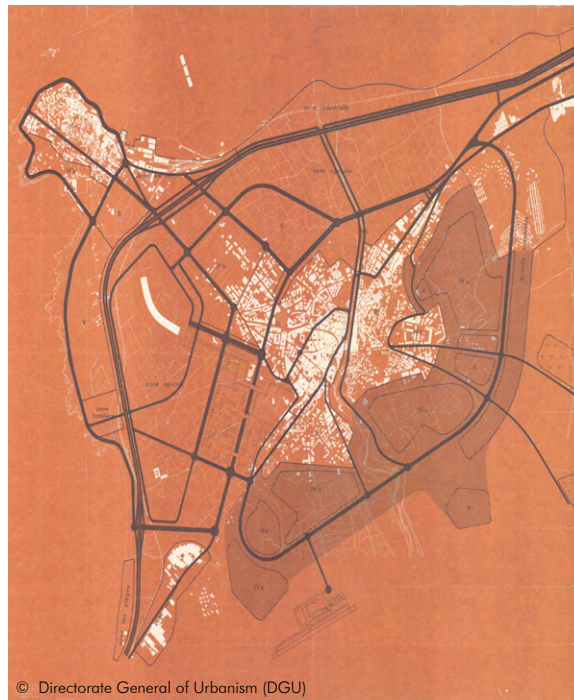
Concerning urban regulations, several master plans were drawn up for the area, but not all were implemented. The 1947 master plan represents the first attempt at planning for the two cities of Tripoli and El Mina. The study was carried out by the Swiss urban planner, Ernst Egli,²³ and implemented by Decree no. 8938 on May 5, 1947. Although a decade and a half before the fair project, RKIF's eventual site located in the agricultural area to the south was spared from urbanization in the Egli plan.

Launched by the Directorate General of Urbanism (DGU) during the Mandate of President Fouad Chehab, the second Master Plan study of 1964 reflects a desire for a decentralized development policy in the country to which we owe the Tripoli Fair project. The urban planners, Henry Eddé and Georges Doumani, took note of the debates surrounding the Fair and the selection of its site and witnessed the launch of its construction.

The guidelines proposed by this study took into account the Fair's role in future urban development and the role it would play in the development of international trade for the port of Tripoli.²⁴ The study also set aside additional amenities for the Fair, such as the hotel zone (on the coast, southeast of the Fair), office buildings, a heliport, and an airfield (on the southeastern hill of Tripoli).²⁵



The Master Plan of Egli in 1947 as figured in the 1964 master-plan study.
Source: Plan Directeur des Villes de Tripoli et d'El Mina, 1964, Henri Eddé and Georges Doumani.



The Master Plan of 1964 by Henri Eddé and Georges Doumani.
Source: Plan Directeur des Villes de Tripoli et d'El Mina, 1964.

²³ From 1947 to 1951, Egli was appointed by the Lebanese government to head the urban development department in Beirut.

²⁴ Henri Eddé and Georges Doumani, *Master Plan of the Cities of Tripoli and El-Mina* (Beirut: Ministry of Public Works, Directorate General of Urbanism, 1964), 49.

²⁵ Another master plan was introduced in 1971 (decree no. 1915, September 14, 1971). This plan is an updated version or an adaptation of the 1964 plan in terms of land use, however, it does not mention the Fair and does not affect any regulations or principles of its use. It does, however, offer a road network which creates a peripheral road in the shape of an ellipse around the Fair and a tangential highway on the west side. This ellipsoidal form for the Fair aligns with Niemeyer's own concept, presented in "Le Commerce du Levant" October 1962.

2.2 The Lebanon International and Permanent Fair in Tripoli

2.2.1 Project Background (1957-1961)

It was during President Chehab's mandate from 1958 to 1964, which was marked by a period of intense modernization based on his decentralized socio-economic regional development policy, that the idea of an international fairground project was conceived.

To achieve his general policy, President Chehab called upon the IRFED (*Institut de Recherche et de Formation en vue de Développement Harmonisé*) mission (1959-1964).²⁶ He decided to accelerate the implementation of reforms and socio-economic projects which resulted from studies conducted by the IRFED delegation and other experts.

As a result, large scale projects - some of which addressed regional interests-were launched across the country. The *Conseil Exécutif des Grands Projets* (CEGP) was then established to implement major government infrastructure and development projects-one of which was an international fair. Thus, the early 1960s was a transformative period in Lebanon, witnessing the birth of new projects, regulations, and institutions that Lebanon had never seen before.

The project itself came about during the previous presidency of Camille Chamoun, under whose mandate the first Lebanese international fair was hosted in Beirut. It was, in fact, as early as 1947 that the country of Lebanon had become a member of the intergovernmental organization tasked, since 1931, with overseeing and regulating World Expos, i.e., the *Bureau International des Expositions*.

Like previous "international (or world's) fairs" that had glorified the industrial might and



General Emir Fouad Chehab - the President of the Lebanese Republic from September 1958 to September 1964.

Source: Foire Internationale et Permanente du Liban à Tripoli, *Conseil Exécutif des Grands Projets*, 1963. Courtesy of RKIF Archives.

colonial ambitions of Western nations in an age of imperialism, the 1950s also saw the establishment of important facilities in the capitals of newly independent Arab countries, such as the International Fair in Damascus, set up in 1955 on the banks of the Barada River, and the International Fair in Baghdad created a year later.

The decision to create an international fair in Tripoli asserted Lebanon's role as a champion of Modernism in the Arab region while shifting away from Beirut's hegemony on economic growth. If in Damascus and Baghdad the areas set aside were equal to 10 and 30 hectares, respectively, Tripoli's Fairground would cover an area of 40 hectares that was later expanded to 72 hectares. This only reinforced the leadership role that the country wished to play in the region's modernization processes.

²⁶ The *Institut de Recherche et de Formation en vue de Développement Harmonisé* (IRFED), headed by Father Lebrez, was invited by President Chehab to undertake socio-economic studies in order to understand the context at the time and inform the new regime's development policy. The work of the first IRFED mission (end of 1959 - spring of 1961) was presented in the report "Besoins et possibilités de développement au Liban," Beirut, Mission IRFED, 1960, then published in 1963 in the form of a book in three volumes (*IRFED-Lebanon Mission*, 1963). See also, *Le Liban au Tournant*, Institut de Formation en vue de Développement IFD, Beirut, 1963.

2.2.2 Design and Implementation (1962-1975)

In an early interview granted to *Le Commerce du Levant*, the Brazilian architect, Oscar Niemeyer, described the circumstances of being commissioned to design the project of an international fair in Tripoli, as follows:



I received a letter from the administration of the Tripoli Fair asking if I was willing to take on the project for this Fair. In parallel, the Ambassador of Brazil in Lebanon recommended I accept such a request. I have all the more gladly accepted this mission considering the many friendships I have in Brazil among the Lebanese community. I have therefore accepted the request of the administration of the Fair, with great pleasure and without setting conditions nor any compensation.²⁷

The correspondence to which Niemeyer refers came after a series of steps undertaken by the Lebanese government to arrive at a consensus as to where the project would be sited. Originally proposed for Beirut, it was eventually located in Tripoli under pressure from local stakeholders and during the mandate of a president keen on paying attention to regional peripheries other than central Beirut.²⁸

Despite the disagreement and counterarguments of some political figures, such as the Tripolitan ex-Prime Minister Rachid Karami, that an international fair in Lebanon (and particularly in Tripoli) would compete with that of Damascus, the Lebanese government issued a decree on May 4, 1960, confirming Tripoli as the location and the name of Lebanon's future fair as "the Permanent International Fair in Tripoli".²⁹

The governmental commission, in charge of choosing the site of the Fair, proposed several potential locations in Tripoli, which were mostly rejected due to their small size, exposure to sea wind, or distance from the city center.³⁰

²⁷ Azmi Kassab, "M. Oscar Niemeyer nous parle de la Foire de Tripoli," *Le Commerce du Levant* 826 (September 15, 1962): 1 [Translated from French].

²⁸ In a lecture presented in Tripoli, on April 30, 1961, Azmi Kassab, a young graduate in economics and finance and a functionary at the Ministry of Finance, argued that during the first half of 1957, economic organizations in the capital demanded "the construction of a permanent international fair in Lebanon which highlights the progressive, modern and tourist image of the country, helps to consolidate its international place, and revitalizes its economy." The newspaper's announcement of this news, "pushed young Tripolitans to demand the implementation of this project in Tripoli as compensation to the losses and deprivations that the city suffered because of the rupture with Syria and the monopolization of the industrial and commercial activities by the Capital." Azmi Kassab, "Lebanon's Permanent International Fair," (1961), unpublished paper, presented in Tripoli during the conference "The Permanent International Fair of Lebanon" at Saint Maroun Church on April 30, 1961.

²⁹ Anonymous, "طرابلس أنسب مكان للمعرض الدولي، وفيها تتوفر جميع أسباب نجاحه وازدهاره" [Tripoli is the most suitable location for an international exhibition, and it is where all the reasons for its success and prosperity are available] *Al Hadara* (October 8, 1959): 3; Anonymous, "تقرر المعرض لطرابلس وتكليف لجنة بالقدوم إلى الفيحاء لتعيين موقعه" [The fair is decided to be in Tripoli and a committee is assigned to come to Al-Fayhaa to determine its location] *Al Hadara* (November 12, 1959); Anonymous, "بعد زيارة لجنة المعرض لطرابلس لاختيار مكان المعرض، الجانب الطرابلسي يلتمس تعاوناً إيجابياً ورغبة أكيدة في أن يأتي المعرض محققاً لآمال طرابلس. منطقة الرمول ما زالت هي المفضلة" [After the exhibition committee's visit to Tripoli to choose the fair's location, the Tripolitanian side sensed positive cooperation and a firm desire that the fair will fulfill Tripoli's hopes. The Roumool area is still the preferred site location] *Al Hadara* (November 28, 1959); Anonymous, "اقترح زيادتها إلى 350 ألفاً. زيادة المساحة من 300 ألف إلى 500 ألف" [The International Fair will be between the areas of Al Ramool and Ras al-Nahr. Increasing the area from 300 thousand to 350 thousand. A proposal to increase it to 500 Thousand and impose an honorary fee on the surrounding lands to cover the price of the increase] *Al Hadara* (5 December 1959).

³⁰ Indeed, the inhabitants of Tripoli demanded that accessibility to the Fair be made through the city center and its souks, so that visitors of the Fair may also contribute to the revitalization of the local economy. Anonymous, "فيما يجري البحث حول مكان المعرض، الشعب يطالب بأن يأتي المكان محققاً لآماله من وراء المعارض وللاعتبارات الفنية التي تضمن له النجاح" [While the search is underway about the location of the fairground, the people demand that the place responds to their hopes out of this Fair while responding to other technical considerations that guarantees its success] *Al Hadara*, (December 17, 1959).

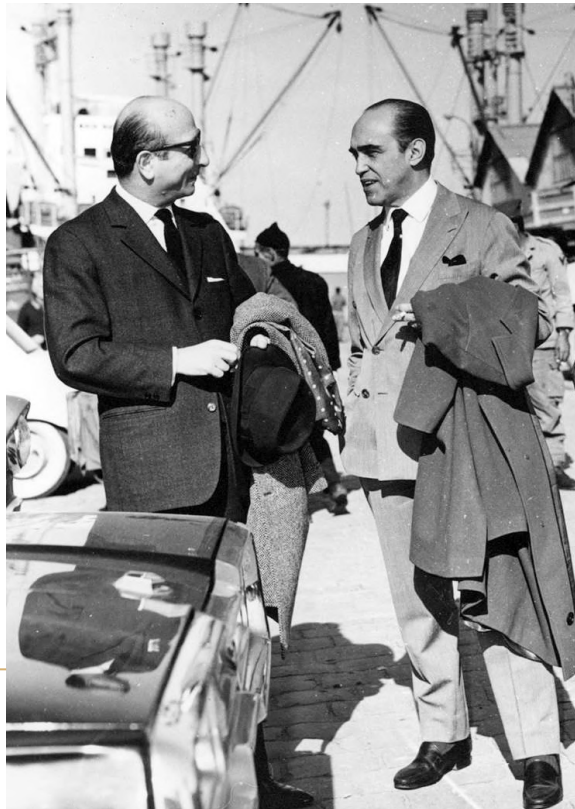
In August 1961, Prime Minister Saeb Salam announced the Fair's location in the western agricultural areas of Tripoli, 350 meters from the road to El Mina, on an expropriated area of 400,000 square meters.³¹

The Fair was designed two years after the inauguration of Brasilia when Niemeyer's architecture received world recognition. At the time, the Brazilian architect lived in Brasilia but it was at his residence in Rio de Janeiro, *Casa das Canoas*,³² that he met the Lebanese envoy, Ferdinand Dagher, who at the time worked for the "Conseil Exécutif des Grands Projets

(CEGP)," the government agency in charge of commissioning and executing the project.³³ By Niemeyer's own admission, he made his way to Beirut in July of 1962, where he met up with his model-maker and assistant, Carlos de Camargo, who had been sent there earlier. The Lebanese sojourn was described a few years later in 1968 in a small travel memoir, titled *Quase Memórias: Viagens*, in which Niemeyer recounted having spent three days in Beirut, 60 days in Tripoli, and another 15 days back in the Lebanese capital before heading back to Brazil.³⁴

In his travel memoir, Niemeyer also recounted having first known about the project commission from a telegram sent to him by the Brazilian Ambassador to Lebanon, Bolívar de Freitas. This was followed by "first contacts" with Amado Chalhoub who was then the Fair's Director-General and who had suggested Niemeyer's name, in the first place.³⁵

While in Tripoli, Niemeyer writes that he worked incessantly and well into each evening. He took off only two days, once to go to the beach and another time to visit Byblos. In the latter part of the stay, Niemeyer visited Beiteddine in the company of Jad Tabet, the former President of the Lebanese Order of Engineers (2017-2021), who at the time was sent by his father, architect Antoun Tabet, to accompany the Brazilian guest during sightseeing expeditions.³⁶ The Tabets aside, Niemeyer also lists the names of others he met, such as "Naccache, Chalhoub, Dagher, Freitas" and "Abdallah", who waited on him during his stay in Tripoli.³⁷



Oscar Niemeyer and Ferdinand Dagher at the Port of Beirut in 1962.

Source: Ferdinand Dagher Collection. Courtesy of Fadlallah Dagher.

© RKIF Archives

³¹ Anonymous, "الرئيس سلام يعلن موقع المعرض" [President Salam announces the location of the fair] *Al Hadara* (August 20, 1961): 1.

³² The house where the Lebanese and Brazilian architects met, *Casa das Canoas*, as it is often called, had been designed a decade earlier and is known for its amoeba-shaped roof, transparent public areas, opaque private quarters, and a rock in the pool. It stands as a direct reference to the Model Residence built on the grounds of the Fair.

³³ Dagher had worked on several large-scale projects in Lebanon including the Phoenicia Hotel, which had also been designed by a foreign architect, the American Edward Durell Stone.

³⁴ Oscar Niemeyer, *Quase Memórias: Viagens, Tempos de Entusiasmo e Revolta, 1961-1966* (Rio de Janeiro: Civilização Brasileira, 1968), 18-22.

³⁵ Laurice Chalhoub (wife of Amado Chalhoub, RKIF Director), interview with Maya Hmeidan, Beirut, March 2020.

³⁶ Jad Tabet, "Je n'irai pas à Brasília," *Suspended Spaces no. 3 – Inachever la Modernité: Catalogue d'Exposition (D'Art en Question)* (Paris: Beaux-Arts de Paris éditions, 2014), 244-259.

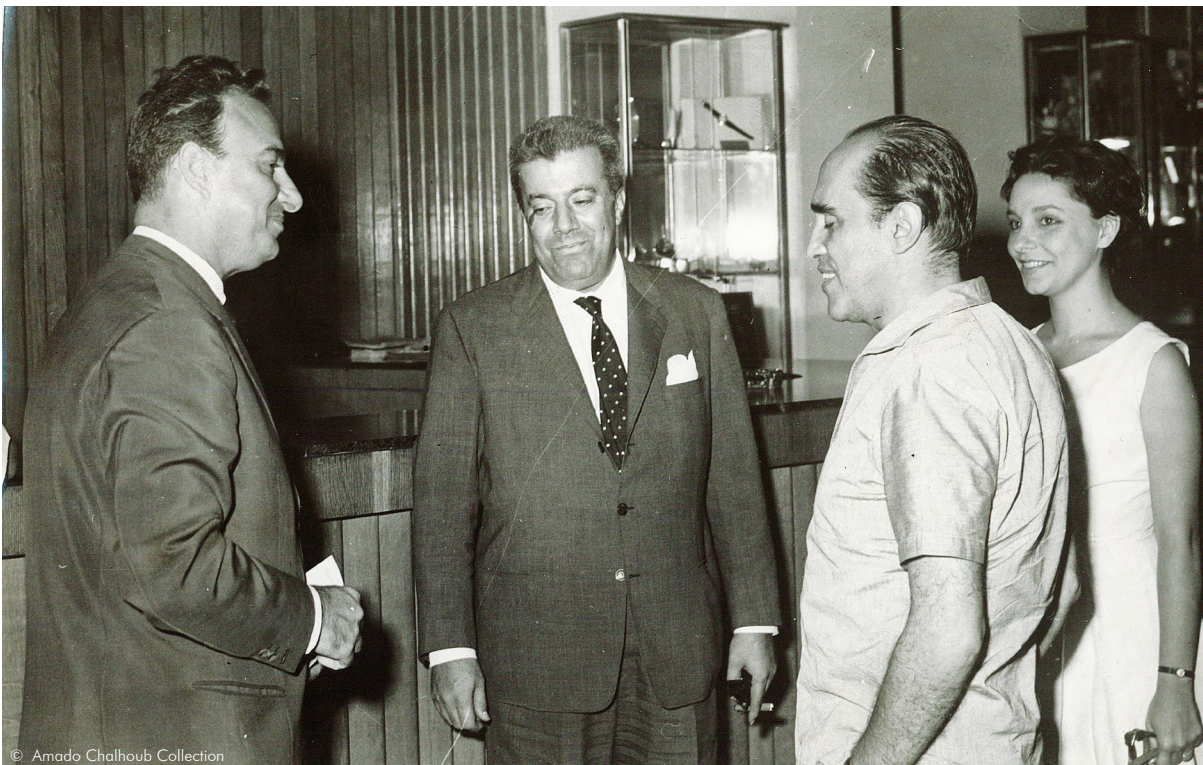
³⁷ Oscar Niemeyer, *Quase Memórias: Viagens*, 22.

Niemeyer's Lebanese sojourn included a close working relationship with the Fair's Director-General, Amado Chalhoub, who along with his wife, Laurice, had grown up in Brazil and were fluent in Portuguese.

During these two and a half months spent in Lebanon, Niemeyer says that he produced "a model, a report, etc."³⁸ The model is most likely the one represented in the article that Niemeyer wrote about his own project, and the "report" is, no doubt, the brochure that was circulated in 1963, all based on a set of drawings that are now at the Niemeyer Foundation in Rio de Janeiro.³⁹ These drawings represent what Niemeyer tended to produce for all his projects, i.e., a so-called "album" or document that usually consisted of a series of numbered plates with explanatory drawings and text that guided the reader through the entire argument of the project.



Oscar Niemeyer accompanied with Ferdinand Dagher during a site visit.
Source: Ferdinand Dagher Collection. Courtesy of Fadlallah Dagher.



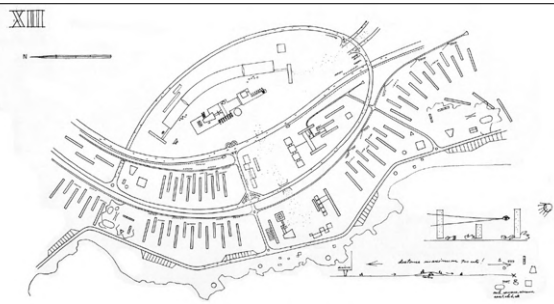
Amado Chalhoub – the Fair's Director (center) and Oscar Niemeyer at Saint Georges Hotel in Beirut.
Courtesy of Laurice Chalhoub.

³⁸ *Ibid.*, 20.

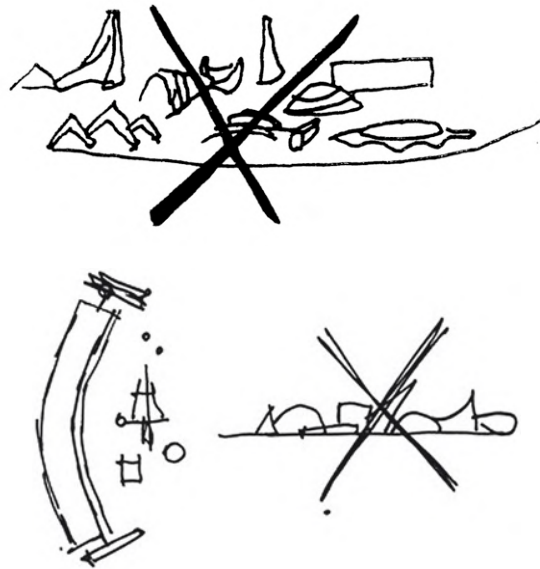
³⁹ Oscar Niemeyer, "Feira Internacional e Permanente do Líbano em Trípoli" *Módulo 30* (October 1962): 1-23; Anonymous, *Foire Internationale et Permanente du Liban à Tripoli, Conseil Exécutif des Grands Projets*, 1963. On the occasion of laying the foundation stone, October 1, 1963.

This set of drawings also showed the project's first version, which was located at the center of what was to become a major urban development punctuated with vast gardens, housing units, schools, shops, clubs, churches, mosques, and cinemas, all unified across a heightened horizon line in Tripoli. It is unclear if Niemeyer took it upon himself to propose more than what he was commissioned to do, but Brasilia was in the air and the fever for mega projects was then at an all-time high.

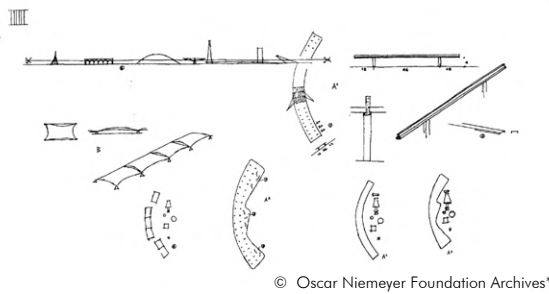
Master Plan by Oscar Niemeyer, 1962, showing the curvature of the Grand Canopy oriented towards the sea and the proposed urban development.



Sketches by Niemeyer showing traditional pavilion-based scheme he rejects as a viable solution.



A plate of the Grand Cover from the original "album" produced by Niemeyer for RKIF, showing structural details of the Grand Cover and possible forms it could have.



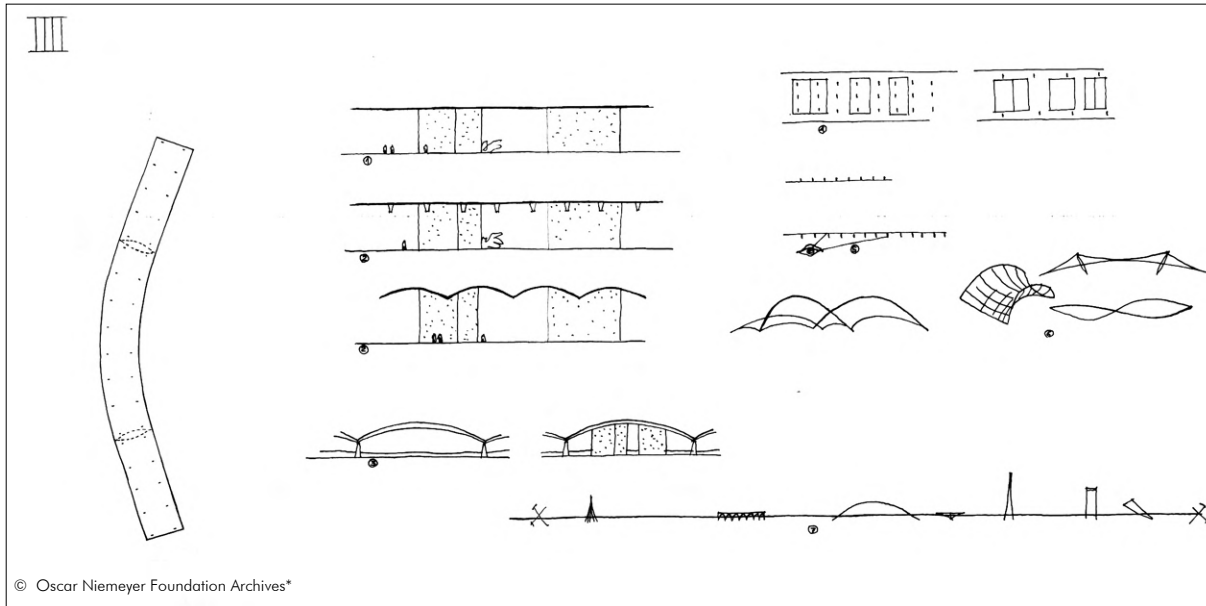
The role that an "album" plays in the work of Niemeyer is extremely important in that it predetermines and even predestines a project much as other albums have, such as the one produced in 1947 for the United Nations headquarters in New York, which set the course for the version that was eventually built. Concerning the text reproduced both in the 1962 article and in the 1963 brochure/album, Niemeyer argued that, unlike other fairs, Tripoli's would abide by, "the fundamental principles of unity and harmony demanded by any comprehensive architectural project, as though in dealing with mere fairs such principles ceased to be permanently valid."⁴⁰

Niemeyer's critique of the usual pavilion-based format is aimed at a contradiction that occurs between a fair's architectural value at a small scale and its seemingly chaotic whole, usually forgiven when for any other project of comparable magnitude, it would not be. This argument against the arbitrary distribution of unrelated pavilions and this rhetorical technique of declaring first what "I will not do" is a trope that repeats in many, if not most, of Niemeyer's albums. For Niemeyer, a fair's many "pavilions" are in Tripoli concealed beneath "a simple roof structure... and not... plastered with the sugary characteristics of a palace."⁴¹ He, therefore, proposed a unifying colossal roof structure, 750 or so meters in length and 70 or so meters wide under which all pavilions were to be located using as many bays as each exhibitor required, or could rent out.

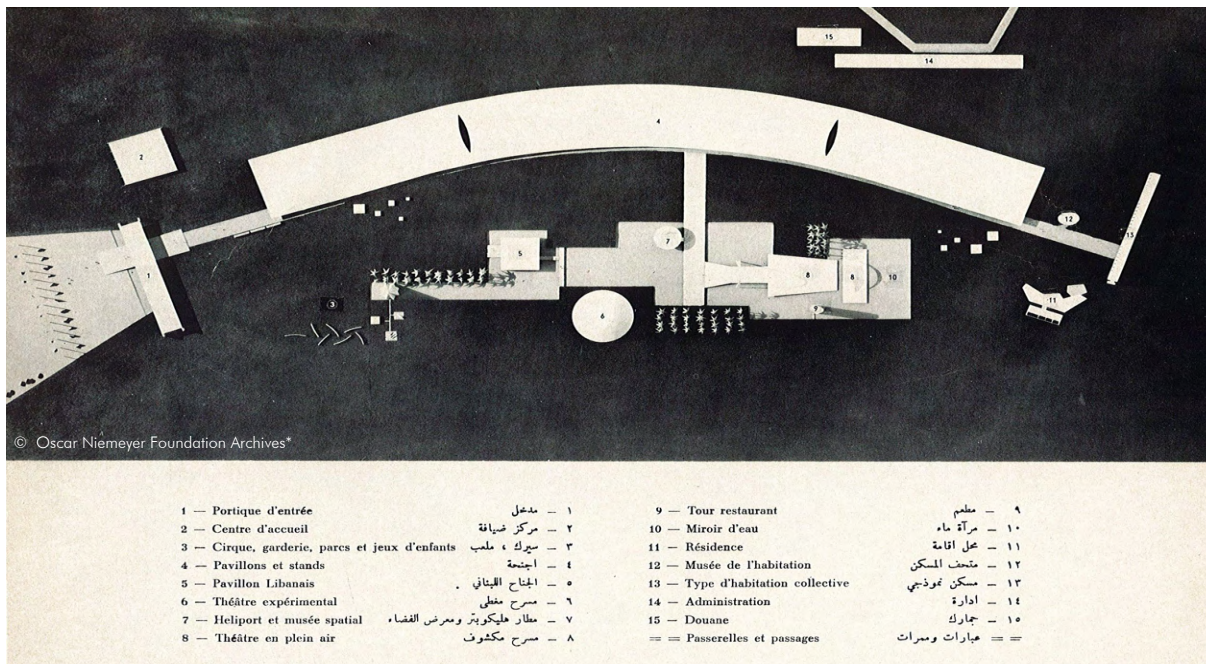
Besides democratizing the world under a single roof, this design strategy also had the advantage of being economically recoverable through rent or sale of space, speedily built, and, of course, architecturally spectacular. Even Tripoli's own "ABC" store, which was among the first in the country to feature fixed prices on products for sale, was drawn as a possible exhibitor among others.

⁴⁰ Niemeyer, "Feira Internacional e Permanente do Líbano em Trípoli [Lebanon Permanent International Fair at Tripoli]," 11.

⁴¹ *Ibid.*



A plate of the Grand Cover from the original "album" produced by Niemeyer for RKIF, showing, for the most part, how the Grand Cover could be occupied.



Niemeyer's initial site model as published in the RKIF opening-ceremony brochure.

Source: Foire Internationale et Permanente du Liban à Tripoli, *Conseil Exécutif des Grands Projets*, 1963. On the occasion of laying the foundation stone, October 1, 1963, 17.

One enters the site through a monumental portico with an elevated ramp offering a sweeping view of the entire campus. Niemeyer describes this area in terms of a "Rest Sector." This principal point of entry is where a visitor center is located to serve as a "reception, control, information, and tourist services" and where Niemeyer writes, the architecture is enhanced by Lebanon's Arab tradition (i.e., the arcaded elevation, which was

coincidentally used that same year in Brasília's Ministry of Justice or Palácio da Justiça).⁴² To the Portico's left is the Guest House which provides "lounges, reading-room, restaurant, lavatories, barbershops, beauty parlour, and rest room, for the repose and relaxation of visitors."⁴³ The sequence that follows is marked on one side by the curve of the Grand Cover that shelters what were to be a diverse and ever-changing set

⁴² Niemeyer, "Feira Internacional e Permanente do Líbano em Trípoli [Lebanon Permanent International Fair at Tripoli]," 3.

⁴³ *Ibid.*

of pavilions and, on the other, by a sequence of permanent pavilions in the so-called, "Recreational and Cultural Sector."

A sweeping view of the entire campus is, therefore, offered to the visitor and the sequence of sectors is as follows:

- Rest Sector (i.e., Ticket Booth/Caisse; Entrance Portico/*Portique d'Entrée*, including the former Reception Centre; Guest House/*Centre d'Accueil*; including the Main Entrance Plaza/parking area and giant light pole)
- Covered Pavilions (i.e., Grand Cover/*Grande Couverture*; Restrooms/Cabinets; Transformers/*Transformateurs*)
- Cultural and Recreational Sector (i.e., Lebanon Pavilion/*Pavillon du Liban*; Space Museum/*Musée Spatial*; Experimental Theatre/*Théâtre Experimental*; Merry-Go-Round/*Manège*; Merry-Go-Round Annexes/*Annexes au Manège*; Open-Air Theatre/*Théâtre en Plein Air*; Water Tower/*Château d'Eau*; Bars/*Bars*)
- Housing Sector (i.e., Housing Museum/*Musée de l'Habitation*; Model Residence/*Residence Type*; Collective Housing/*Habitation Collective*)
- Services Sector (i.e., Administration Building/*Administration*; Customs-Firehouse-Depots/*Douanes-Pompiers-Dépôts*)

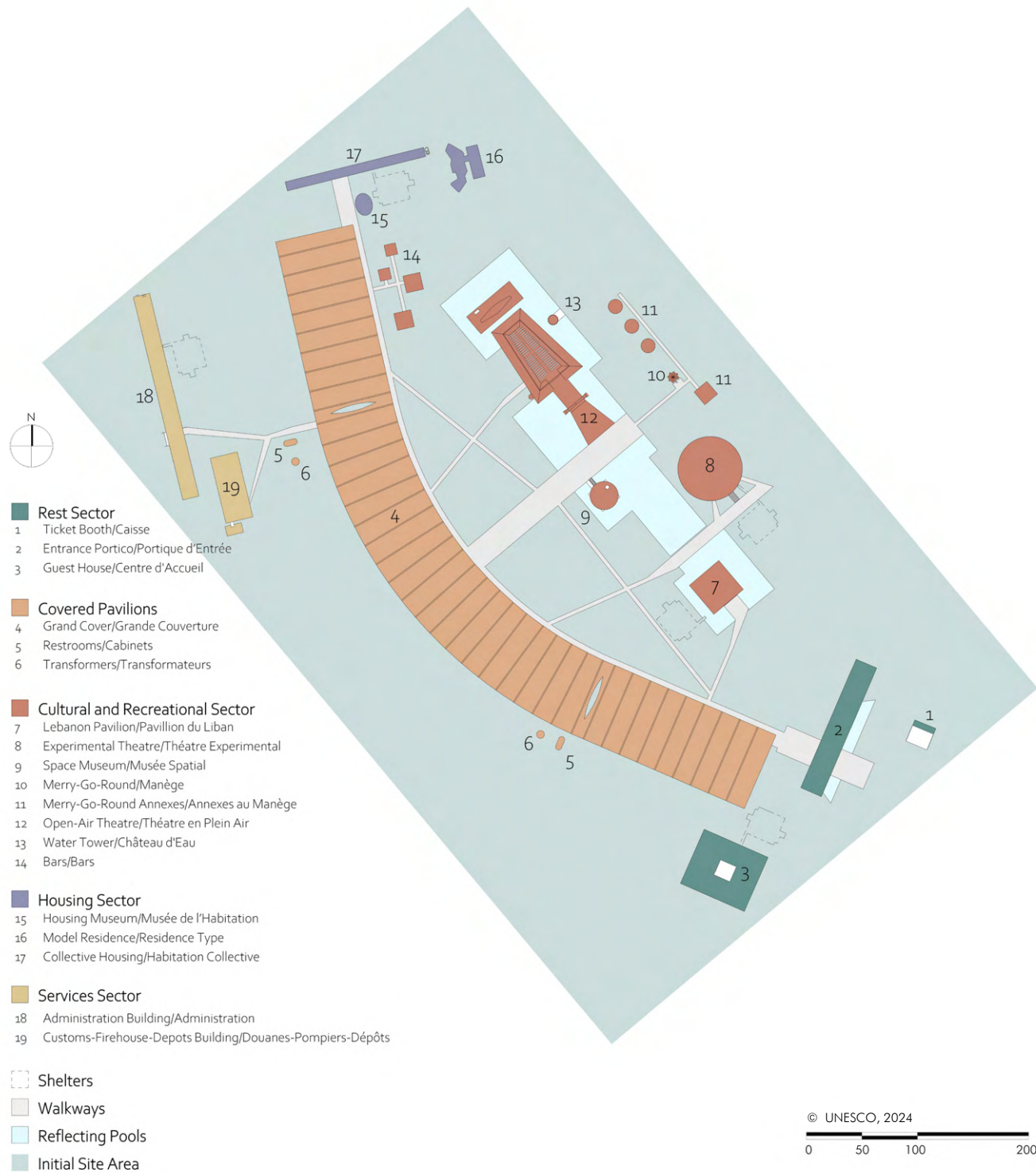
In such a structured and composed 'pavilionary' strategy, the "Rest Sector" invites visitors in through a large trapezoidal plaza marked by the monumental Entrance Portico, which together amounts to a typology used many times before in projects either by Niemeyer himself or found in projects on which Niemeyer previously collaborated. The closest example is the entrance plaza or *Praça Maior* that Niemeyer designed that same year, 1962, for the campus of the University of Brasília.

As a project, the *Praça Maior* has its antecedents in projects by Lucio Costa and Le Corbusier on which Niemeyer worked early in his career. These projects include those proposed by Costa and Corbusier in 1936 for the campus of the Federal University in Rio de Janeiro as well as the plaza of the United Nations in New York, the design of which derived from a merger of schemes proposed by both Le Corbusier and Niemeyer.

Once past the portico and inside the Fairground proper, a series of pavilions follow, each with a distinct geometric shape. The Lebanon Pavilion, for example, consists of a concrete exoskeleton that covers a glazed interior and that replicates a design schema used for Brasília's major governmental palaces. The pointed arches surrounding the structure, on the one hand, recall those found in Levantine architecture and, on the other and if flipped upside down, those of Brasília's Alvorada Palace that Niemeyer designed a few years earlier as a presidential residence.

Other pavilions appear further down the sequence and the Open-Air Theatre among them is described by Niemeyer as hosting three activities: the outdoor theater proper, a bowling alley, and a boxing/wrestling ring, all distributed over two general areas, one outdoors on the building's roof, technically, and the others indoors in a half-basement configuration. Access to the seating area of the Open-Air Theatre is through a monumental ramp straddled by an equally monumental arch, and the stage, further away, was designed as a platform surrounded by water. A reflecting pool stretches across this entire sector up to the "Housing Sector" where the Collective Housing building – currently "embedded" in a Quality Inn hotel – is located along with a small Housing Museum and a Model Residence, the one that emulates Niemeyer's own *Casa das Canoas*.⁴⁴ The Administration Building and the Customs-Firehouse-Depots building are located in the area behind the Grand Cover.

⁴⁴ Niemeyer used the same design of his own residence in Rio de Janeiro for what he called the Model Residence at RKIF. According to oral history, this structure was supposed to be used as the Director's residence and Niemeyer chose to use the same design as an expression of appreciation and friendship with the RKIF's Director, Amado Chalhoub. Laurice Chalhoub, interview with Maya Hmeidan, March 2020.



Plan of RKIF until the early 1970s, showing RKIF's buildings categorized by corresponding sector following Niemeyer's initial design.

The buildings strewn across RKIF, therefore, follow an original sequence of specific sectors all held together by an underlying carpet of lawns and reflecting pools that play a vital role in setting up perspectives and foregrounds, and as in all of Niemeyer's work, some portions of the program are revealed while others are concealed, not to mention a "de Chirico" effect where principal volumes are in stark contrast with the plane out of which they emanate. It is a strategy that reinforces the project's monumental effect. The vast reflecting pools that underscore most of the project potentially took advantage of the existence of irrigation infrastructure that had previously served the agricultural fields where the entire project was sited.

Niemeyer's original vision looked at the Fair as a part of a larger whole, as he was not able to comprehend the Fair simply as an independent structure that was connected to Tripoli, but rather as part of an entire new quarter of the city, with its own residential and commercial infrastructure that he deemed necessary for the operation of the Fair. The highway and the railway connecting Beirut to Tripoli were observed as the main assets for the Fair. The broad strokes of the Fair's layout coincide with the well-studied projects of the existing boulevard, the corniche, and the highway that will connect Beirut to Damascus, adapted at the time to the Fair's placement and lending to the areas surrounding it a functional advantage. Hence, the highway and the train line bordering the Fair cut the region transversally, and a new, one-way avenue enclosed its perimeter, assuring the other sectors of the urbanized zone the necessary system of circulation, one characterized by the complete separation of vehicles and pedestrians.⁴⁵

This original plan had the Grand Cover oriented toward the seashore and the newly proposed

residential and commercial quarters. This orientation appears on the site plan and model that were proposed by Niemeyer as the original layout of the project. This grand layout, however, represents the project's first version, which was all too soon abandoned in favor of a more modest version limited to the Fair's program. The second version completely reorients the project towards the old city of Tripoli, with the Grand Cover rotated almost 180 degrees to face the city. Most, if not just about all, of the remaining structures roughly kept their original position. Despite some reservations and the change that the master plan underwent between versions one and two, Niemeyer still considered the project to be a valuable contribution to Lebanon, especially in terms of its novel and unique approach to the design of fairs historically.⁴⁶

The first stone for The International and Permanent Lebanon Fair in Tripoli (renamed Rachid Karami International Fair in Tripoli in 1995) was laid on October 1, 1963.⁴⁷ Construction works were assigned to the CEGP, *Conseil Exécutif des Grands Projets*, presided by Malik Salam and were financed by the Lebanese State. In 1963, Architect Ferdinand Dagher, in charge of coordination and supervision, appointed the design office of engineer Noël Abou Hamad as a consultant for the study and design development of the Grand Cover (designated as Lot A), while contractor Michel Malik was to be in charge of its implementation.

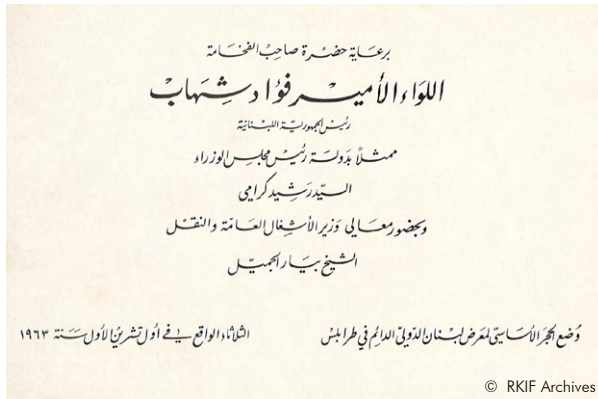
Oral history facilitates the identification of other actors in this first execution phase of the Grand Cover, such as subcontractor Darwich Haddad in charge of the implementation of the post-tensioned concrete, and Aouni al-Ahdab who was assigned on behalf of Michel Malek.⁴⁸

⁴⁵ Niemeyer, "Feira Internacional e Permanente do Líbano em Trípoli [Lebanon Permanent International Fair at Tripoli]," 3.

⁴⁶ Oscar Niemeyer, letter addressed to the CEGP, May 1970.

⁴⁷ Anonymous, *Foire Internationale et Permanente du Liban à Tripoli, Conseil Exécutif des Grands Projets*, 1963. On the occasion of laying the foundation stone, October 1, 1963.

⁴⁸ According to Noël Abou Hamad, Aouni el Ahdab, a citizen of Tripoli, was the subcontractor who implemented the Grand Cover under Michel Malek, and Darwich Haddad was the subcontractor for precast and post-tensioned concrete. Noël Abou Hamad (Grand Cover Consultant), interview with Maya Hmeidani, Beirut, August 9, 2019.



Under the auspices of his excellency the General Emir Fouad Chehab - the President of the Lebanese Republic - represented by Prime Minister Mr. Rachid Karami, and in the presence of Minister of Public Works and Transportation, Sheikh Pierre el Gemayel, the foundation stone of The International and Permanent Lebanon Fair in Tripoli was laid on October 1, 1963.

Source: Foire Internationale et Permanente du Liban à Tripoli, Conseil Exécutif des Grands Projets, 1963.



A newspaper clip on the laying RKIF's foundation stone. The lower image in the clip shows the Prime Minister Rachid Karami with Niemeyer's 3D model of RKIF during a press conference announcing the project from his office at the Council of Ministers on September 3, 1962.

Source: تم اليوم برعاية الرئيس الأول ممثلاً بالرئيس كرامي إرساء حجر الأساس "أكبر مشروع عمراني لطرابلس والشمال" [Today, under the patronage of the First President, represented by Prime Minister Karami, the foundation stone was laid for the two largest urban projects for Tripoli and the North], Al Inshaa, October 2, 1963.



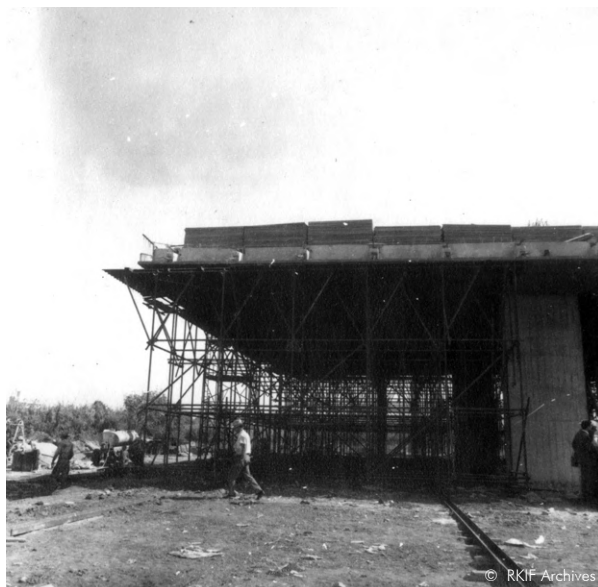
RKIF foundation stone during the opening ceremony. It reads "The International and Permanent Lebanon Fair in Tripoli, October 1, 1963".

Source: Foire Internationale et Permanente du Liban à Tripoli, Conseil Exécutif des Grands Projets, 1963.



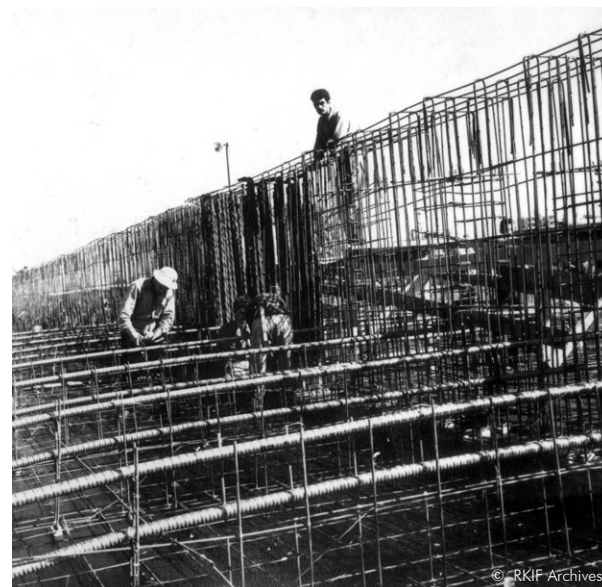
Prime Minister Rachid Karami (2nd left) and Minister of Public Works Pierre Gemayel (2nd right) during the official ceremony for the laying of RKIF's foundation stone on October 1, 1963.

Courtesy of Wassim Naghi.



Construction of the Grand Cover with shoring for support of formwork and concrete for roof structure (July 9, 1965).

Source: Ferdinand Dagher Collection. Courtesy of Fadlallah Dagher.



Construction of the Grand Cover with installation of the post-tensioning system, roof slab reinforcement, and upturned beam reinforcement (July 9, 1965).

Source: Ferdinand Dagher Collection. Courtesy of Fadlallah Dagher.

Available archival documents reveal two other principal consultants starting in 1964, the architectural and engineering consultancy firm, Dar Al-Handasah Consulting Engineers, and the Associated Contracting Engineers firm (ACE).⁴⁹ While the first was in charge of the study and design of "Lot B" (Lebanon Pavilion, Experimental Theatre, and Open-Air Theatre), ACE was in charge of "Lot C" (Administration Building, the Customs-Firehouse-Depots Building, Entrance Portico, Ticket Booth and Guest House). The company, Khatat and Mouawad, involved in large-scale projects in the country since the late 1950s, was in charge of the implementation of both Lots B and C.

During the implementation of the project, between 1963 and the mid-1970s, consultation and exchange with Niemeyer were maintained through CEGP. Despite this fact, the consultants took it upon themselves to introduce some modifications that were considered vital and necessary. Some sources, such as the observations of Dar Al-Handasah Consulting Engineers in 1964, provide precise information on a series of rectifications and adaptations realized during the construction work. At the same time, the document confirms that all materials indicated and specified by Niemeyer had generally been adopted.⁵⁰



A newspaper clipping on the work of the contractor, Khatat and Mouawad, at RKIF in 1966. The title praises the company for implementing the structures at the Fair with immense capabilities, high-tech equipment, and great technical competencies.

Source: "شركة خلاط ومعوّض تنفذ انشاءات المعرض بامكانات ومعدات وكفاءات فنية جبارة" [Khalat and Mouawad Company is implementing the fair structures with great capabilities, equipment and technical competencies], "Al Hadara, December 31, 1966.

⁴⁹ Both firms were initially established as one in November 1956 by a group of professors from the American University of Beirut; it was called Dar Al-Handasah (in Arabic, the house of engineers). A corporate demerger took place a year later creating Dar Al-Handasah Consulting Engineers and Associated Consulting Engineers (ACE). Both firms were known in the region starting 1958. Later in 1970, Dar Al-Handasah Consulting Engineers went through another corporate demerger where two new companies were spun off and became to be known as Dar Al Handasah Nazih Taleb and Partners, and Dar Al-Handasah Shair and Partners. The first will continue the work at the Fair from 1970 and during the Civil War period, while the second (Shair and Partners) will carry on the post-Civil War rehabilitation works.

⁵⁰ Dar Al-Handasah Consulting Engineers, "Foire internationale et permanente du Liban à Tripoli. Résumé des observations de Dar Al-Handasah sur les bâtiments du Lot «B», (September 14, 1964).

According to this report, most of the reinforced concrete sections foreseen in the original studies were considered insufficient by Dar Al-Handasah due to local climatic conditions, which led to a significant change in their design with Niemeyer's approval. This change impacts, for example, the thickness of the roof of the Open-Air Theatre shifting from 100 cm to 120 cm. The same applies to the beams in the same building where the section was nearly doubled from 75 cm to 140 cm, those of the Space Museum (from 30 cm to 50 cm), while at the Lebanon Pavilion, a metal structure embedded in concrete was designed to take all constraints.

Niemeyer's second and last documented visit to Tripoli took place between the end of December 1966 and early February 1967.⁵¹ During his stay, Niemeyer inspected the implemented works. It was a chance to discuss and interact directly with the project's consultants and contractors, as well as others in charge of follow-up and implementation of the project.

Archival sources, such as the final mission reports of the *Conseil Exécutif des Grands Projets* of 1970 written by Architect Nicolas Rizk⁵² and that of 1972 written by Architect Georges Doumani, confirm that consultation with Niemeyer continued for at least 10 years after developing the design.⁵³



Niemeyer during a site visit on December 28, 1966 with CEGP members, Lebanese consultants and contractors.

Source: Courtesy of L'Orient-Le Jour.

© L'Orient-Le Jour Archives*

⁵¹ Anonymous, "Oscar Niemeyer Visite La Foire de Tripoli," *Le Jour* (December 28, 1966); Anonymous, "Niemeyer visitera aujourd'hui le chantier du fleuve Abou-Ali," *L'Orient* (January 5, 1967).

⁵² Nicolas Rizk, "La Foire Internationale du Liban à Tripoli. Rapport Définitif sur la Mission No. 624," report submitted to CEGP (May 27, 1970).

⁵³ Georges Doumani, "Mission à Paris: Consultations avec M. Oscar Niemeyer sur des problèmes de la Foire de Tripoli" [Mission to Paris: Consultations with Mr. Oscar Niemeyer on the issues of the Tripoli Fair] Report submitted to CEGP (February 1972).

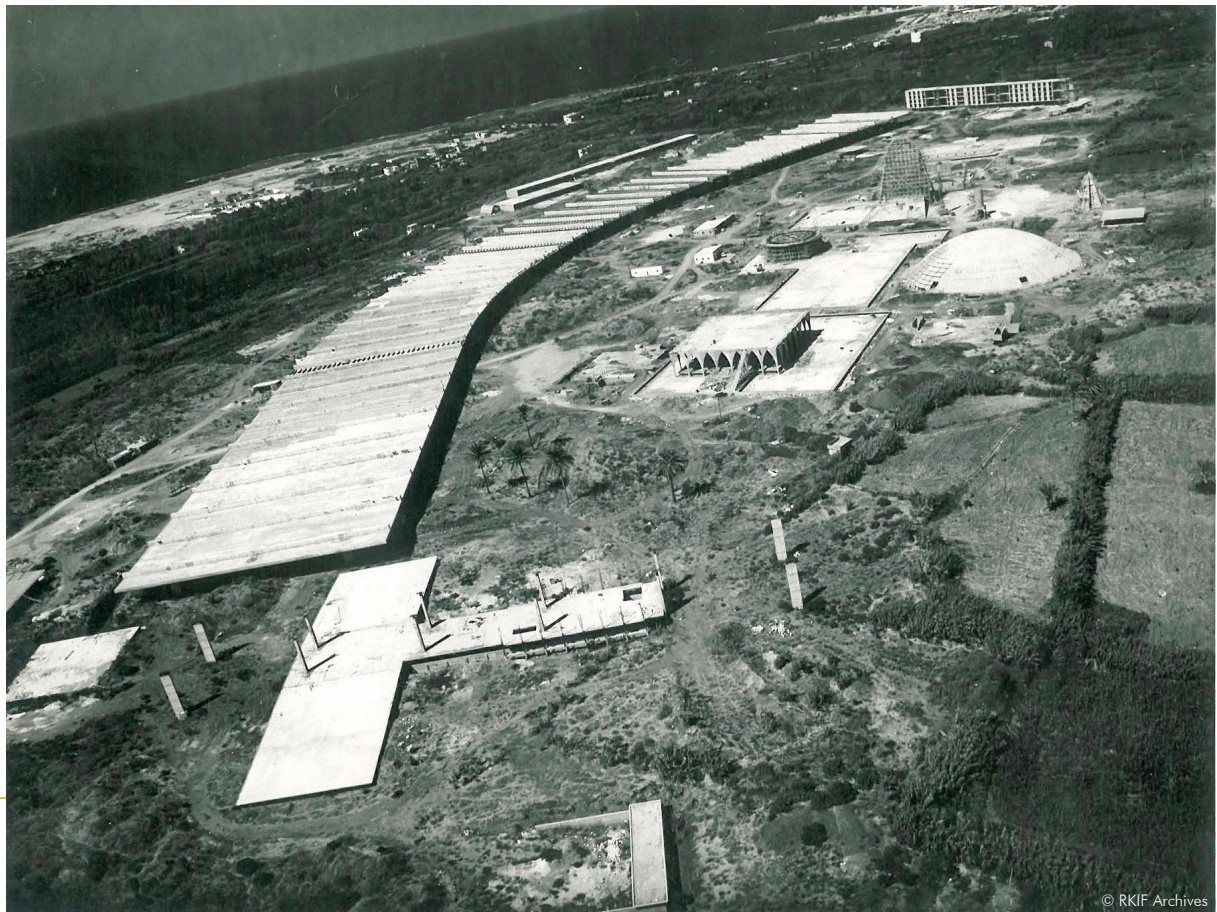
These two reports provide important information on the exchange with Niemeyer and clarify Niemeyer's position on certain modifications made during the construction or which would be made in the future, especially after the decision to expropriate an additional area of 300,000 square meters in 1969⁵⁴ in an attempt to introduce new facilities to the Fairground (i.e. a Planetarium or an Open-Air Cinema).

Rizk's report refers to some modifications that had been introduced concerning the design of certain spaces and buildings. Among these, at the Open-Air Theatre, the slope and the stage were slightly increased and the benches were

spaced to rectify a visibility defect.⁵⁵

This intervention reduced the number of spectators on one side and slightly raised the stage on the other.⁵⁶ As this elevation remained unsatisfactory, the consultants proposed back in 1964 that the scenography of various hosted performances should rectify this error by raising the stage. Once the stage was raised (by one meter), the necessity to modify the original design was proposed to Niemeyer, who admitted in 1970 this mistake and suggested providing an alternative study to raise the stage.⁵⁷

At the Lebanon Pavilion, the reinforced-concrete sections to which the glazing was supposed to be anchored were replaced by aluminum profiles.



RKIF under construction during the late 1960s.

Source: Ferdinand Dagher Collection. Courtesy of Fadlallah Dagher.

© RKIF Archives

⁵⁴ Anonymous, "ضجة في طرابلس, [An uproar in Tripoli]," *As-Sayad*, (September 1969): 45.

⁵⁵ Dar Al-Handasah Consulting Engineers, "Foire internationale et permanente du Liban à Tripoli. Résumé des observations de Dar Al-Handasah sur les bâtiments du Lot «B»." (September 14, 1964): 2.

⁵⁶ Rizk, "La Foire Internationale du Liban à Tripoli. Rapport Définitif sur La Mission No. 624," 7-8.

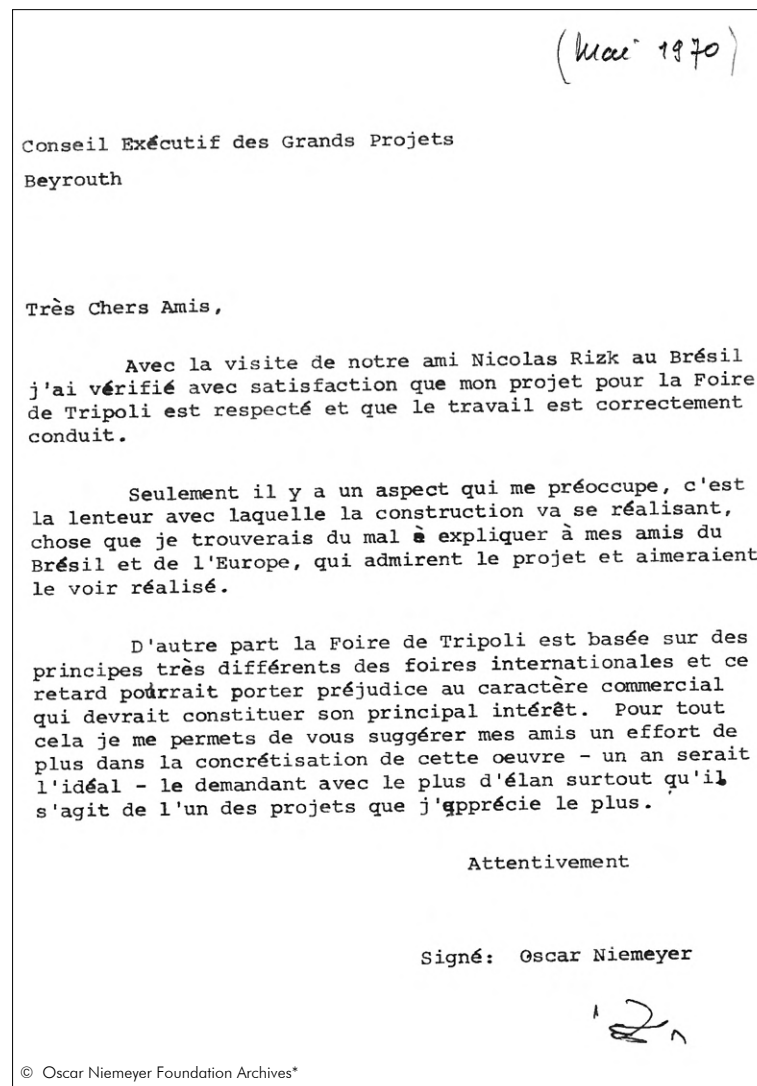
⁵⁷ No study was found that proves that such a modification happened. Due to the absence of as-built drawings, further research is needed to prove that a second modification of the stage took place.

Although this change seems to have been made without consultation with Niemeyer, he agreed to study the glazing of the Pavilion from these new metal posts with the addition of operable steel cross-pieces in the form of louvers.⁵⁸ Regarding the mechanical and sanitary installations, Dar Al-Handasah Consulting Engineers introduced secondary modifications to the distribution of domestic cold water in the various buildings. The same applies to the issue of water purification, which according to these documents, was studied and implemented. The fire-fighting system, which was not foreseen, was in turn specified. The lighting was carried out according to the indications of Niemeyer. However, where this was not detailed, it was developed. The same applies to air-conditioning and heating systems.⁵⁹

RKIF's project implementation was scheduled initially for three years. The pace of construction was relatively fast starting late 1963-early 1964. However, later budget deficits and lack of state funding delayed the implementation of major infrastructure projects, including the coastal highway connecting Tripoli in the North to Saida in the south, passing through Beirut as well as Tripoli's International Fair. Consequently, the project's inauguration date was consecutively deferred until 1976; initially set to be June 1966, the opening was later rescheduled for 1969, then 1971, 1974, 1975, and so forth.⁶⁰

In May 1970, Niemeyer addressed a letter to the *Conseil Exécutif des Grands Projet*, expressing his satisfaction with the executed work, and his concern for the slow pace of the construction process. Niemeyer called for additional efforts to expedite the work, considering that Tripoli's Fair is one of his most appreciated projects.⁶¹

The slow pace of implementing the project fueled criticism against the political leaders of the successive governments. In addition, there was the disappointment of the general public and stakeholders, especially economic organizations, local investors, and ex-landowners, whose hopes for a better, more equitable future for the city were later obliterated, specifically with the outbreak of the Civil War in 1975.



A letter signed by Oscar Niemeyer and sent with Nicolas Rizk upon his return from his consultation mission in Brazil in May 1970. The letter and its content were also mentioned in Rizk's report, in addition to the initial draft letter written in Portuguese.

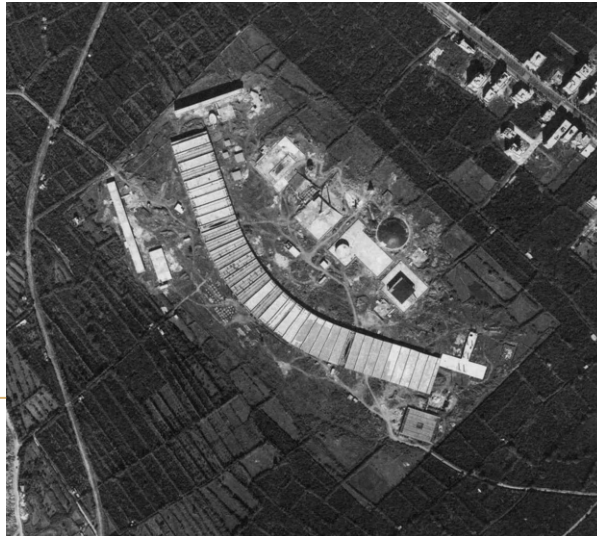
Source: RKIF Archives.

⁵⁸ Rizk, *op.cit.*, 6.

⁵⁹ *Ibid.*, 12.

⁶⁰ Anonymous, "Karamé Annonce: La Foire de Tripoli sera achevée en 1969," *L'Orient* (August 3, 1967): 6; Anonymous, "La Foire Internationale de Tripoli sera inaugurée en 1971, en même temps que l'autostrade," *L'Orient* (June 11, 1968): 6.

⁶¹ Oscar Niemeyer, Letter addressed to the CEGP, May 1970.



Aerial view of Tripoli Fair in 1967 (left) and in 1973 (right).

Source: Lebanese Army Forces - Directorate of Geographic Affairs*.



2.2.3 Civil War and Military Occupation (1975-1990)

When the Lebanese Civil War broke out in 1975, the project was nearing completion. These events led to the cessation of further site work. Shortly after in 1976, the site was seized by the Arab Deterrent Force (ADF), mainly the Syrian Armed Forces, who took military control of the Fairground. In 1977, Amado Chalhoub, the RKIF director, described the state of the Fair during the conflict and confirmed that the project was nearing completion and the opening dates were scheduled for July 1975. However, the Fair's mostly finished and unused structures were stripped and the site had to be abandoned due to the escalating unsafe security situation.⁶²

The abandonment of a site of such magnitude permitted the complex to be exposed to deterioration, alterations, makeshift additions, and vandalism. In addition to their deterioration due to weathering factors, many buildings suffered from continuous misuse. This was particularly manifested by the settlement of military troops in various parts of the Fair, such as the Guest House, the Grand Cover,



Graffiti at Niemeyer's Guest House, reminiscent of the site occupation period.



Bullet holes on the exterior shell of the Experimental Theatre.

⁶² Anonymous, "معرض طرابلس الدولي، مليون متر مربع، و22 بناء، الأحداث ضربت أبنيته وافتتاحه يكلف الملايين" [Tripoli's International Fair, one million square meters and 22 structures. The recent events have affected its buildings and its opening costs millions], *As-Safir*, (February 18, 1977). This illustrated article - written after the two years' war (1975-1976) described as "events"- shows the degree of completion of different buildings such as the Open-Air Theatre, the Experimental Theatre, the Arch and the Manège.



the Administration Building, the Bars, and the Housing Museum. Traces of explosion shrapnel and bullets regularly appear today on fair-faced concrete surfaces, especially in buildings that were not rehabilitated in the post-War period. While some of these bear witness to shell explosions like many other buildings in the city, others evoke some military practices, such as target training. This practice is visible today on the southern façade of the Administration Building and the exterior shell of the Experimental Theatre.

Some interventions and alterations to the buildings carried out by members of different armed factions can still be noticed. In some of the site's structures used as shelters, such as the Bars and the Housing Museum, different types of makeshift extensions, blocked windows and new openings appear.

In other structures, such as the Lebanon Pavilion, the removal of original elements like marble panels, doors, and handrails, has left permanent marks on walls and slabs or other elements. Furthermore, graffiti left by soldiers are still visible today as in the Guest House and Customs-Firehouse-Depots building. These traces remain today as a constant reminder of the site's - as well as the country's - adverse history. Tripolitans' relationship with and feelings towards the site during this period were negative; although the press remained silent, oral histories and memories better attest to this period.



The site during its occupation by the Syrian Army in 1994.

Above Notice the military trucks parked under the Grand Cover.

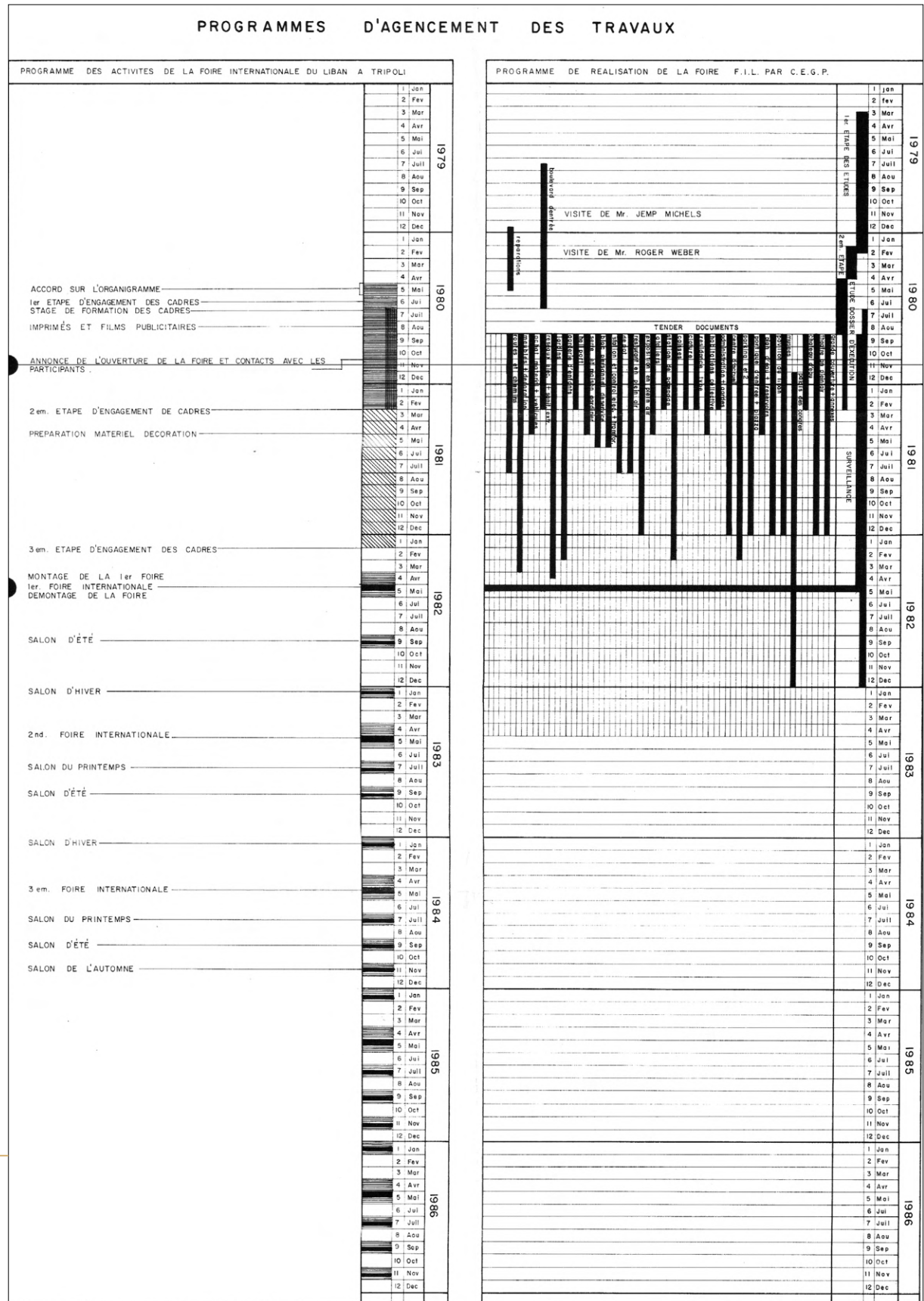
Below the Bars adapted to be used by the soldiers.



Bullet traces on the southern side of the Administration Building, looking north.



Graffiti and openings introduced by Syrian soldiers at the Customs-Firehouse-Depots Building.



© RKIF Archives

2.2.3.1 Attempts to Operationalize the Fair

During this period, CEGP and RKIF's Administrative Board continued their operations regarding the future planning for the Fairground despite the circumstances and difficult working situation (see the schedule of works' finalization and the expected events). In 1979, the vice president of the Union of International Fairs and founder of the Luxembourg International Fair, Jean-Pierre Michels (known as Jemp Michels), was invited on a study mission to advise on the actual state of the studies of RKIF and its future operation for the second time.⁶³

In his report (1979), Jemp Michels confirms that on 5 November 1979, he visited the offices of the consulting engineers (Dar el Handasah Nazih Taleb), who were still working on the Lebanon Fair project in Tripoli.⁶⁴ He exposed his views on certain options that are specific to all modern international fairs and of which certain characteristics are immutable (indispensable) and consequently presented his recommendations to CEGP focusing on "enhancing" Niemeyer's Fair to respond to the standards of modern international fairs.⁶⁵ It is worth noting that Michels succeeded in convincing the Lebanese counterparts whose proposals appeared on a 1980 plan by Dar el-Handasah Nazih Taleb.

The RKIF Administrative Board and CEGP succeeded in implementing the additional eastern parking area and the secondary entrance during the early 1980s in an attempt to use at least the cultural spaces. In May 1980, a delegation

from Tripoli Fair visited several international fairs around Europe in order to draw from their experiences.⁶⁶ However, the failure of negotiation with the Syrian high command and the subsequent Israeli invasion of Lebanon in June 1982 would put an end to all works and attempts to use the Fair starting 1982-1983.

2.2.4 Post-War Reconstruction and Later Development Efforts (1994-2018)

In 1994, when the Fair was returned to Lebanese control, everything of value, from electricity cables to light fixtures, air-conditioning systems, Carrara marble floor tiles, and even bricks, had long since disappeared across the border. The post-War period opens the way on the one hand, to the resumption of construction activities at the Fair but also, and mainly, to a series of alterations that have affected the project's original qualities to varying degrees (mostly inspired by Michels directives 1979). The double objective of RKIF's Administrative Board was firstly, to rehabilitate some targeted parts of the Fair to allow the quick organization of exhibitions (8,000 square meters of exhibition space and offices for the administration), and, secondly, to promote the Fair at the national, regional, and international levels.⁶⁷

Major interventions with the immediate aim of reusing specific units took place between 1994 and 1998. Undertaken by the design firm Dar Al-Handasah Shair and Partners and *Bureau d'Etudes Civiles et d'Architecture* (BECA),⁶⁸ most of these operations fall into the category

⁶³ Michels' first mission took place on the 1st of March 1975, shortly before the eruption of the Civil War. At the time, he presented to CEGP his recommendations concerning the proper management and operation of RKIF prior to its opening for the first exhibition scheduled for July 1976. Jemp Michels (Jean-Pierre Michels), "Rapport sur La Foire Internationale du Liban à Tripoli," *Conseil Exécutif des Grands Projets* (March 17, 1975).

⁶⁴ Jean-Pierre Michels (Jemp Michels), "Rapport sur La Foire Internationale du Liban à Tripoli," *Conseil Exécutif des Grands Projets*, (November 1979).

⁶⁵ These include the introduction of a lateral northern entrance and additional parking, the introduction of a service road behind the Grand Cover, and the introduction of internal roads for safety and security reasons (ambulances and firetrucks), and the like.

⁶⁶ The delegation's visits during May 1980 to Dusseldorf, Luxembourg, Paris, and Birmingham are documented in the internal minutes of meetings by the RKIF Administration Board.

⁶⁷ Post-War reconstruction policies focused on Greater Beirut and did not develop a recovery plan for all the Lebanese territory. However, some projects were carried out sporadically. In addition, the project for partially rehabilitating RKIF in the 1990s was not what local public opinion hoped for or expected.

⁶⁸ After its regional and international expansion during the 1970s and 1980s, Dar Al-Handasah Shair and Partners led the country's infrastructure planning and reconstruction starting 1991, including Beirut's Central District infrastructure, Beirut's Airport and Port, in addition to other infrastructure projects.

of “resuming suspended construction works” as expressed in the local press of that period.⁶⁹ Although the approach of the rehabilitation project did not disregard completely Niemeyer’s project,⁷⁰ it has, however, generated some changes to the concept of fluidity and quietude characterizing the original program. This transformation concerned mainly a portion of the main exhibition building (Grand Cover), rehabilitated to include a congress hall with a capacity of 1,000 seats and a 20,000 square meters fully equipped exhibition space with the addition of a service road; the Open-Air Theater was partially rehabilitated with a new seating arrangement; the Reception/Visitor Centre under the Entrance Portico was transformed to host RKIF’s administration offices along with an auditorium; in addition to the change of the original landscape design, fountains were added at the Entrance Portico’s reflecting pools.

2.2.4.1 The Rehabilitation of the Grand Cover (1994 - 1998)

The first documented Post-War rehabilitation works at the Fair date back to 1994. On the occasion of the first exhibition held in the Grand Cover in the same year, repair work was carried out on a limited part of the structure equivalent to a quarter of its total area.⁷¹ 170 m stretch of the Grand Cover from the Entrance Portico side (the southern and of the Grand Cover) was made operational between 1994 and 1997 through a series of lightweight structures acting as pavilions installed between pillars and protruding from its three sides (including both the convex and the concave sides). Besides the waterproofing membrane applied to this part of the roof, fair-faced concrete elements were patched and painted, an exposed electrical lighting layout was installed, and the ground was covered with a concrete slab.⁷²

The Fair during 1994 while still partially under Syrian occupation. Notice the lightweight structures acting as pavilions installed between pillars under the 1st quarter of the Grand Cover to the Entrance Portico side.



⁶⁹ Most of the national newspapers covering rehabilitation works between 1994 and 1997 use the term “reconstruction” instead of rehabilitation. The name of Oscar Niemeyer is completely ignored or unknown to the majority of journalists.

⁷⁰ To save on costs or for other reasons, the 1997 rehabilitation project carried out by Dar Al-Handasah Shair and Partners on one part of the Grand Cover does not seem to be searching ostensibly for a modernized surface appearance as is the case in other post-War rehabilitation projects in Beirut.

⁷¹ Anonymous, “درنيقة: بدأ العمل في ورشة تأهيل معرض طرابلس الدولي” [Dernaika: Rehabilitation works of Tripoli International Fair have started] *Al-Rakib*, (July 30, 1994). This press article mentions the names of the different contractors who undertook the 1st rehabilitation project such as, *Al Moukawiloun* (المقاولون) for structural engineering and *Al Torok al Haditha* (الطرق الحديثة) for concrete work.

⁷² Dar Al-Handasah Shair and Partners, “The Rachid Karame International Fair Complex,” Tender documents Volume III, (January 1995).

This seemingly minor intervention opened the way to targeted operations underneath the Grand Cover, now no longer comprehended as a continuous structure. Between 1997 and 1998, a project executed by Dar Al-Handasah Shair and Partners transformed the original design and aspect of the Grand Cover. The lightweight structures were removed and an extended part of the exhibition space (half of the Grand Cover 20,000 m²) was enclosed with a combined use of transparent and opaque separators. On the concave side of the Grand Cover (facing the Cultural and Recreational Sector), aluminum frames with glass infill were installed and lined

up with the external short side of the original rectangular pillars, whereas a new structure in reinforced concrete and exposed concrete blocks was added to the convex side. A large part of the short edge toward the main entrance (southeast) and the two first modules of the concave side were also closed following the same arrangement. While on the concave side, the 1998 intervention has taken into account the cantilever surface shading what is now the glazed exhibition area, the original effect of the flying curved surface has been totally lost on the convex side with the enlargement of the interior space.⁷³



The convex side of the Grand Cover, showing the rehabilitated half to the right.



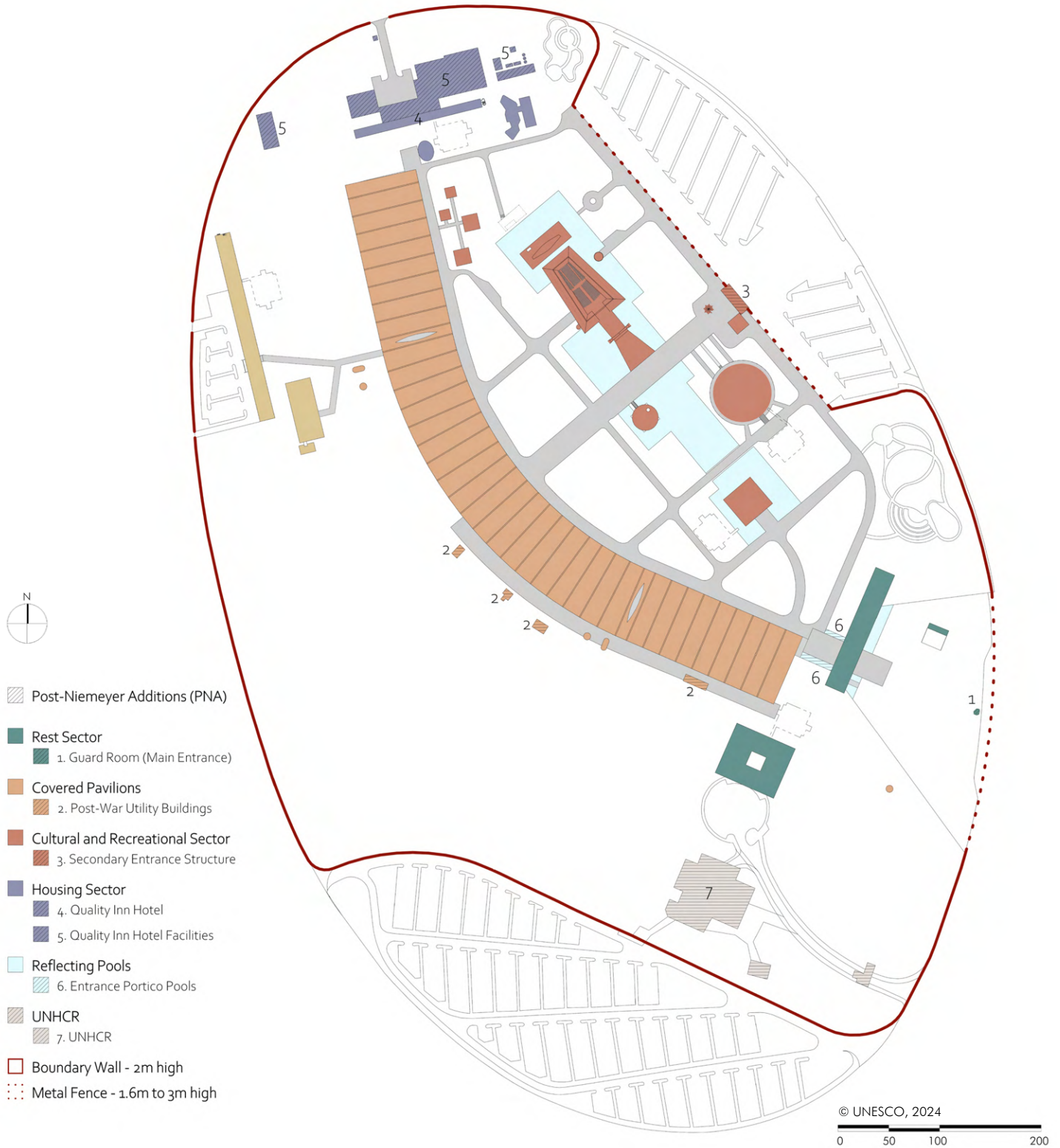
© UNESCO/Ieva Saudargaite, 2023



© UNESCO/Ieva Saudargaite, 2023

The convex side (left) and the concave side (right) of the Grand Cover after rehabilitation.

⁷³ In order to maximize the interior surface by adding restrooms and other units to the southern side, the limit of the new indoor exhibition space is pushed to the edge of the cantilever structure.



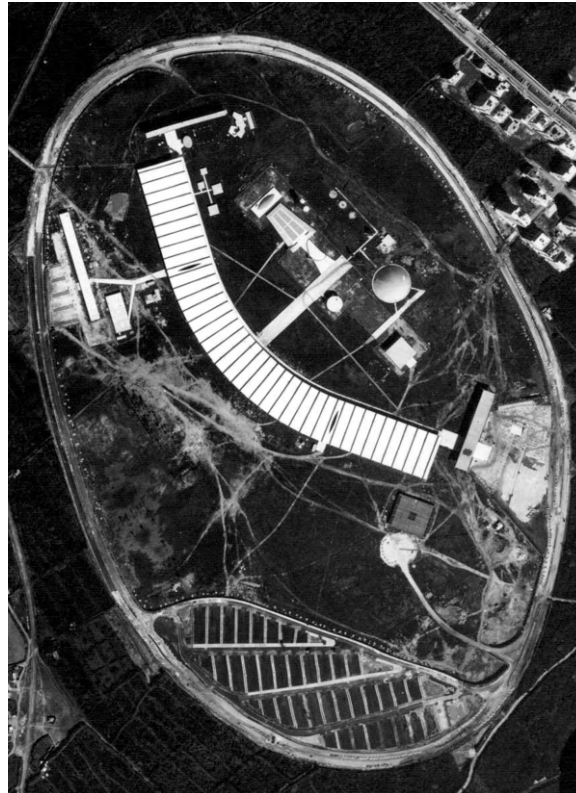
Plan of RKIF showing Post-Niemeyer Additions (PNA) starting mid 1970s until 2023.⁷⁴

⁷⁴ Compare with the plan on page 35, showing RKIF as implemented in the early 1970's.

2.2.4.2 The Transformation of the Original Landscaping Plan (1997)

The original landscape conceived by Niemeyer, documented in aerial views from 1970 and in technical drawings produced by the Associated Consulting Engineers (ACE) in 1964, underwent a major transformation. This major intervention in redesigning open spaces seems to have taken place in two phases between 1980 and 1996-1997. While public access to the site was originally located only at the Entrance Portico, as noted earlier, a lateral entrance was created on the northeastern side (1980) with a new parking lot added between 1986 - 1993 as confirmed by aerial views. This secondary entrance opened the door for a series of rearrangements of the pedestrian pathways within this area carried out by the *Bureau d'Études Civiles et d'Architecture* (BECA) in 1996-1997.⁷⁵ First, the central alleyway was extended to the new gate embracing the children's recreational area (Merry-Go-Round Annexes/Manège) and new orthogonal pathways were created. Secondly, oblique pathways starting from the Open-Air Theatre and the Lebanon Pavilion and converging toward the central part of the Grand Cover were eliminated and replaced by orthogonal walkways disregarding the original design. On the northern side of the Grand Cover, a new layer of cast-concrete floor was laid over the original one. The width of this "outdoor promenade" also increased, diminishing consequently the original sharp perspective effect obtained with the structure above.

This period marks also the change to the soft landscape when Daisy for Trading and Contracting was commissioned in 1996 to implement BECA's landscape-planting plan between 1996-1997. Dar Al-Handasah's 1995 report mentions the presence of several mature date palms, *Phoenix dactylifera*, along the western boundary of the site.⁷⁶



Aerial image of RKIF in 1974 showing the initial walkways as designed by Niemeyer.

Source: Lebanese Army Forces - Directorate of Geographic Affairs*.



Aerial image of RKIF in 1999, showing the change introduced to the walkways.

Source: Lebanese Army Forces - Directorate of Geographic Affairs*.

⁷⁵ The water supply drawing produced in October 1997 by BECA shows the new landscaping project.

⁷⁶ Dar Al-Handasah Shair and Partners, "The Rachid Karame International Fair Complex," Tender documents Volume III, 16.

Apart from these date palms, the site landscape was devoid of trees. The report confirms the absence of woody plants, trees, and shrubs, and indicates that open spaces of the site were covered by dense layers of spontaneous vegetation. The BECA landscape plan introduced a wide diversity of ornamental tree species, 531 mature trees in total. The diversity of species, as well as the planting of trees and hedge plants placed to demarcate lawn peripheries, is typical of the landscape approach in municipal gardens in Lebanon.

In the years that followed, some of the trees that were planted died and were replaced. However, the structure of and diversity of planting initiated in 1996 continued to dominate, regardless of Oscar Niemeyer's vision for a landscape that consisted mainly of lawns to ensure unobstructed view to and from the buildings east of the Grand Cover.

2.2.4.3 The Introduction of a Secondary Entrance and the Partial Demolition of the Manège Annexes (1997)

With the introduction of the lateral entrance that was suggested by Michels in 1979, a large covered concrete structure with metal gates in between columns was added to the east of the Cultural and Recreation Sector during the 1980s. This necessitated the interruption of the

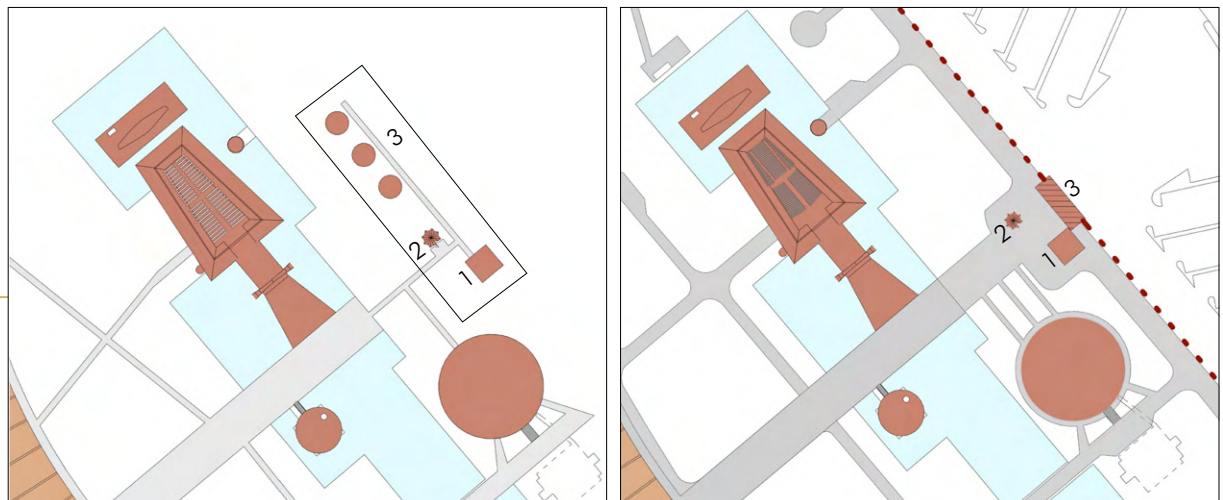
"Manège" and its annexes by extending the wide transversal walkway connecting the Grand Cover with this lateral entrance. On the other hand, the curvilinear fair-faced concrete walls and circular gravel beds, designed originally as a part of the children's outdoor playground (Manège Annexes), were removed probably before the 1997 landscaping project.⁷⁷

The adjacent Annex lost its original function as possibly a nursery to serve as a ticketing booth and guards' room during events. According to Dar Al-Handasah's 1995 report, two rooms were added to the interior space of this structure. It was completely enclosed on all four sides. A large opening was created on the entrance side, as well as two other windows facing the former playground. Concerning the Merry-Go-Round/Manège structure, two openings were added while it was being used by the military troops during the occupation phase; these openings were mentioned in Dar Al-Handasah's report in 1995. It seems the openings were closed again during the 1997 interventions.

2.2.4.4 The Entrance Portico (1996-1998)

The building under the Entrance Portico - designed to serve as a reception and visitor center - was subject to major interior transformations to function as the new RKIF

Plan of the Fair until the early 1970s (left) and that of today (right), showing the transformation that occurred to the area of the Manège and its Annexes. Note the demolition of the circular features and the addition of the Secondary Entrance (3) and metal fence.



© UNESCO, 2024

⁷⁷ The original function of the children's playground was already considered in Dar Al-Handasah's 1995 report as "inappropriate", which explains its devaluation.

administration quarters. The interventions, realized by BECA between 1996-1997, introduced some modifications to the interior space of this structure, replacing the original white marble tiling with colored ones and removing the red brick-wall cladding. However, the exterior aspect seems to have remained relatively unchanged.

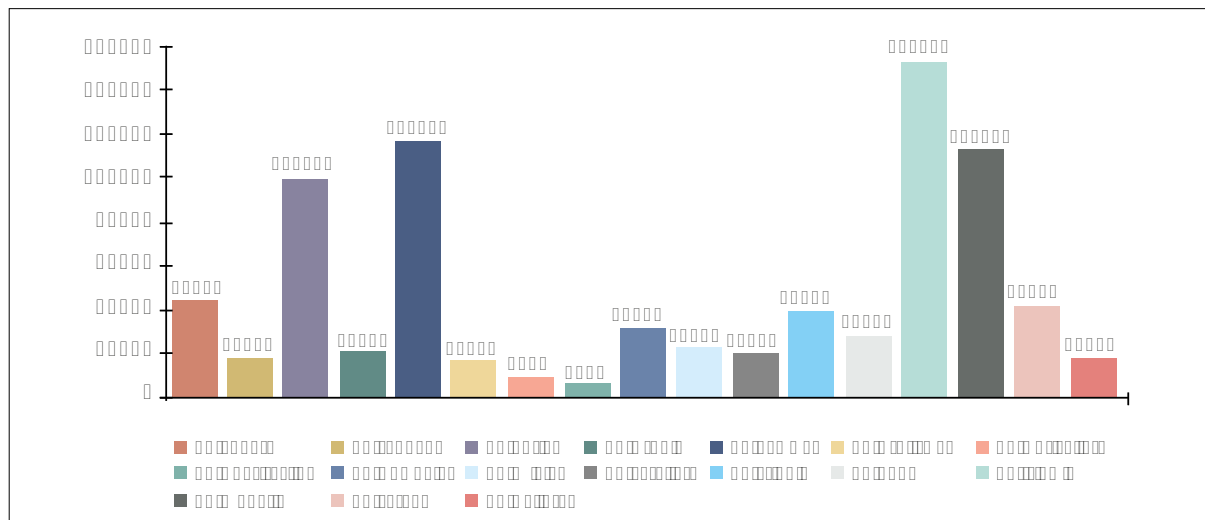
2.2.4.5 Small-Scale Transformations and Repairs (1996-1998)

Partial repair and adaptation works can be identified on specific buildings in the Fairground. Aside from the above-mentioned Grand Cover and Entrance Portico, other places witnessed minor interventions. For instance, at the Lebanon Pavilion, BECA also implemented some “restoration” measures. The aim of these actions was either structural improvement of the concrete structure or a “desired embellishment” often disregarding the original aesthetic value of the place. These interventions included mainly plaster repairs and added layers of synthetic paint on rough concrete surfaces. Other modifications, such as suspended lighting fixtures at the Grand Cover, waterjet nozzles on

reflective pools under the Entrance Portico, and plastic stadium-seating chairs at the Open-Air Theatre, were also introduced.

The above major interventions, along with RKIF’s legal framework, which allows comprehensive long-term investments facilitating the temporary entry of foreign goods, encouraged the organization of a series of local and regional exhibitions starting 1994. Most importantly, it allowed the implementation of the 7th Islamic Trade Fair in October 1998.⁷⁸ Despite the celebrated success of this regional exhibition, RKIF’s administration identified two factors challenging the future success of RKIF to host international fairs in Tripoli: lack of proper transportation as well as lodging.

This fact prompted the Administrative Board, who at the time started launching several campaigns to promote the Fair through brochures or BOT contracts (Build, Operate, and Transfer) for its revitalization, to approve the transformation of the Collective Housing into the Quality Inn hotel, as Tripoli was preparing to host the Asian football tournament in 2000.⁷⁹



⁷⁸ The 7th Islamic Trade Fair press coverage report (October 12-18, 1998) prepared by the organizing company (International Fairs and Promotions - IFP SARL) at RKIF reveals the impact of this regional event, which attracted over 151,500 visitors in six days and over 400 local and regional exhibitors from 50 different countries.

⁷⁹ It is worth noting that an Olympic stadium, to the south of the complex (in the undeveloped part of the site), was proposed by the Ministry of Youth and Sport. This proposal was opposed by a part of the Tripolitan society and by some intellectuals and academics, who were convinced that such projects would likely damage the integrity of the architectural design of the Fair. The position of a number of local political actors against the construction of the stadium at RKIF pushed the Ministry to instead build it on an empty land in the south of the city, previously designated for a public garden. However, at the time, it was decided to transform the Collective Housing into a Quality Inn 4-star hotel to cater for this event.

2.2.4.6 The Transformation of the Collective Housing (1999-2000)

One of the most drastic post-War interventions is certainly the transformation of the Collective Housing building into the Quality Inn hotel in the year 2000. This intervention, promoted by former Prime Minister Rafik Hariri and financed by the Cabinet, was carried out also by the same project design company, Dar Al-Handasah Shair and Partners. Apart from the complete transformation of the interiors and the unfortunate loss of their original characteristics, the visual porosity between the Fair and the sea (previously possible through a series of open terraces on the first and second floors) was also eliminated. The exterior oval-shaped service staircase in reinforced concrete remains today one of the very few signs recalling the original project despite the fact it has been heightened by some meters.

2.2.4.7 RKIF and the New Ambitious Master Plans (2001 - 2010)

In the following years, RKIF continued to host exhibitions and events. Nevertheless, these exhibitions remained local and were considered modest given the issuance of a decree on RKIF's exclusivity for holding international exhibitions in 1995. This fact fueled the discontent and disappointment of the Tripolitans, for failing, once more, to meet their expectations for a prosperous economic future.⁸⁰

In parallel, several cultural projects were proposed by ministers and professional associations, for instance, to reuse administrative buildings at the back of the exhibition area that had never been operational. Also, a science museum and a plastic art museum were

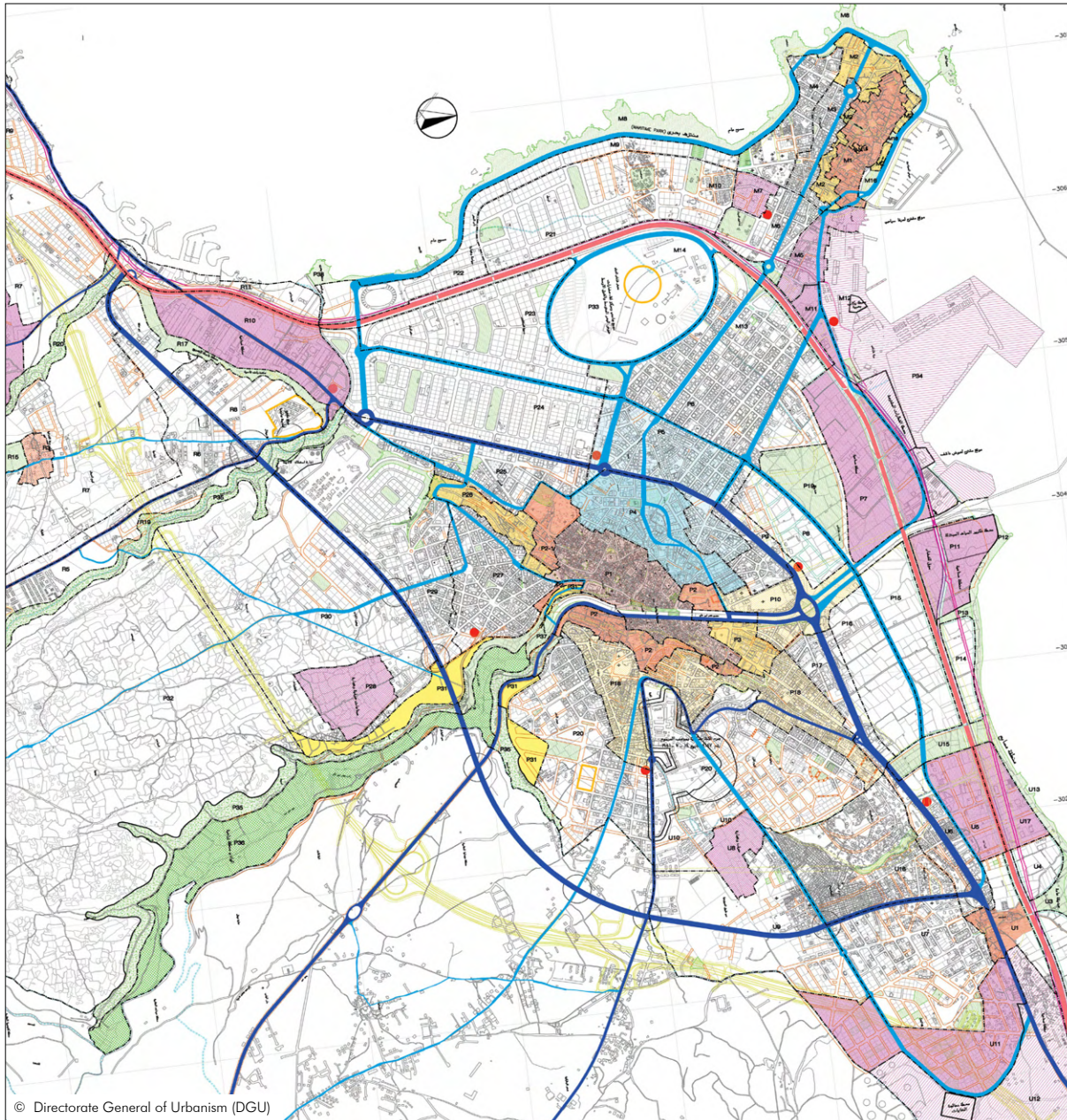
proposed, in addition to the introduction of a stadium and theme park to the undeveloped lands. Other large-scale projects that would have irreversibly and drastically altered the entire complex of the Fair were suggested following the launch of several calls for a DBOT (Design, Build, Operate, and Transfer) tender by the RKIF Administrative Board starting in 2001, in an attempt to redevelop and revitalize the Fair. In 2000, the Directorate General of Urbanism (DGU) assigned an urban planner to prepare a new master plan for the *Al-Fayhaa* cities (Tripoli, El Mina and Beddaoui). The master plan proposal for the Fair was submitted in 2002 and stipulated that "it is prohibited to add new buildings to the fair area (the whole ellipse), while rearranging the site to recover the plasticity of the basic concept and the sculptural elegance of the forms and spaces. The site cannot be fragmented."⁸¹ It recommended that the Fair site become a public park open to citizens.

Furthermore, the study proposed three main functions to be integrated into existing buildings: meeting center for Mediterranean and Middle Eastern civilizations; cultural, social, leisure and exhibitions center where symposia, conferences, festivals, and shows can take place; and a university campus for the Lebanese University that can be integrated under the Grand Cover without disturbing the original design to ensure the continuity of cultural activities and dynamic life on site.

Obviously, this study was rejected by various local actors and hence, it was not adopted by the Higher Council for Urban Planning) at the DGU. Alternatively, the DGU developed separate master plans for each of the main cities

⁸⁰ Several press articles issued between 2001 and 2013 document the doubtful public opinion and their disappointment. See Issmat Oueida, "مشروع مدينة رشيد كرامي السياحية: مشروع فاشل اقتصادياً، وهذه هي الأسباب" [The touristic city in the Rachid Karami Fair: An economically unsuccessful project], *Al-Tamaddon* (August 29, 2001); Bassem al-Bakour, "معرض الكتاب السنوي الـ 03 في طرابلس: " [The 30th annual book fair in Tripoli: a public bazar making your think you are at the wrong address], *An-Nahar* (May 3, 2004); Ismat Chafic Chanbour, "Tripoli's five missed great opportunities," *Al-Inshaa* (May 16, 2008); Amina al-Mir, "معرضنا الدولي لا يفتح أبوابه إلا للكتاب ... ويبقى طيلة أيام السنة في عهدة" [Our international Fair opens only for books ... and remains at the mercy of dust the entire year], *Al-Bayan* (May 6, 2009); Anonymous, "هل تذكرونه؟" [What if the Fair was located outside Tripoli? Do you remember the Rachid Karami international Fair?], *Al-Tamaddon* (July 3, 2013).

⁸¹ Diran Harmandayan, *The General and Detailed Master Plan of Tripoli, Al Mina, Beddaoui and part of Ras Masqua* (Beirut: Ministry of Public Works, Directorate General of Urbanism, 2002): 99.

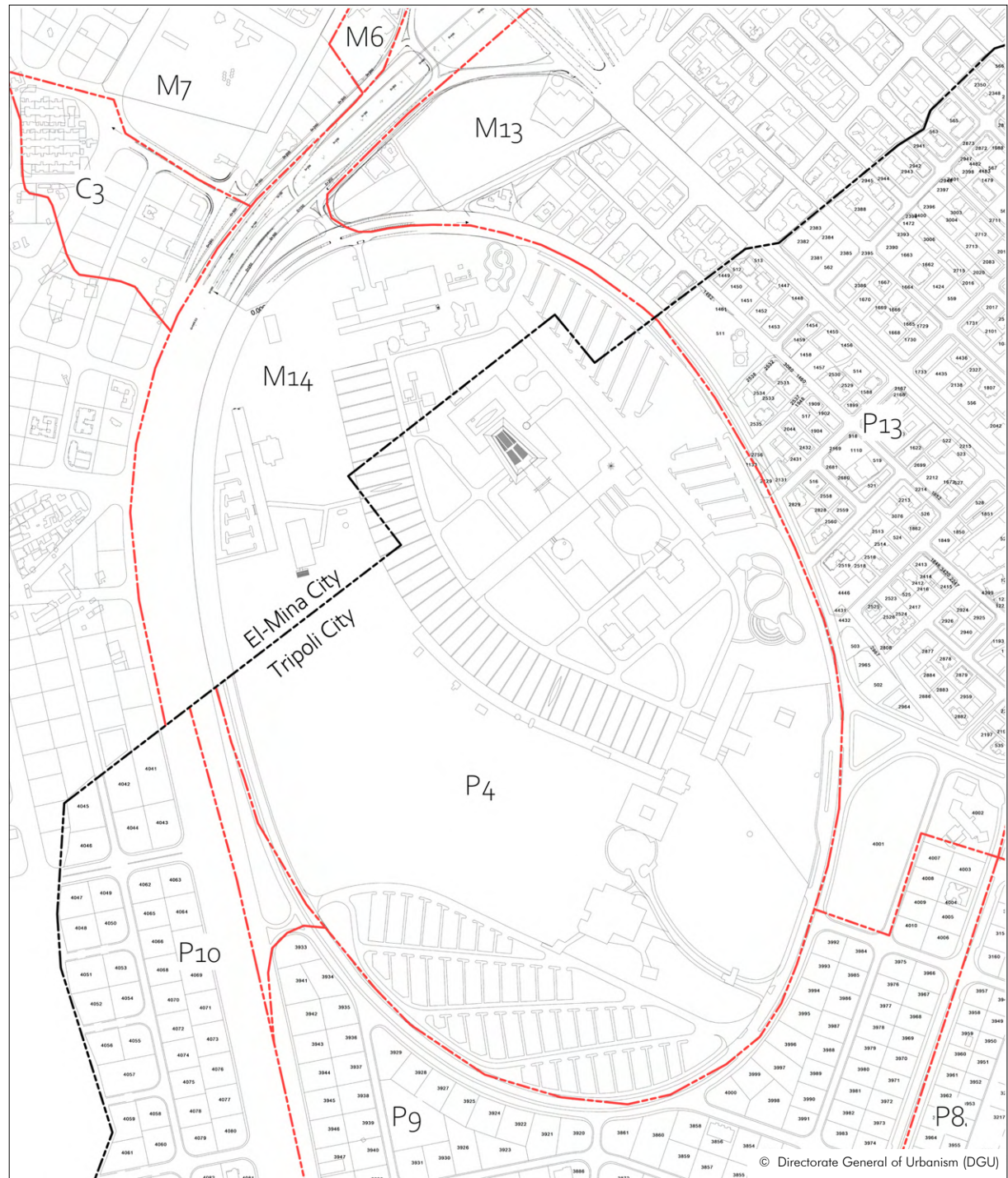


The 2002 Master Plan by Diran Harmandayan.
Courtesy of Directorate General of Urbanism (DGU).

of *Al-Fayhaa*. The city of El Mina adopted the zoning regulations proposed in the 2002 study, while Tripoli and Beddaoui each developed a completely new master plan. In all three cases, these master plans were only land-use plans through which the RKIF became divided between two different regulations.⁸² Since the RKIF site is located partially in El Mina and partially in

Tripoli, this meant that new developments can not be introduced to the area located within the administrative boundaries of El Mina (M14), while flexibility in developing the western empty plots and the addition of new constructions are still possible within the rest of the complex provided the approval of the Higher Council of Urban Planning (P4).

⁸² These new master plan studies were adopted consecutively by government decrees during the second half of the 2000s and they are still applicable to date.



The administrative boundaries separating RKIF with two different regulations to the Fair's area: **M14** zone of the El Mina urban master plan forbids the addition of new structures and the fragmentation of the Fair's site, and requires the rearrangement of the site to recover its plastic purity and elegance of its sculptural forms and spaces. But it did not ascribe any new functions to the site or its buildings. As for zone **P4** of the Tripoli master plan, the regulations stipulated that "any addition of new structures must be subject to a volumetric scheme which will be presented to the Higher Council of Urban Planning to obtain prior approval, while maintaining the site's layout to recover the plastic purity of the basic concept and the sculptural elegance of the forms and spaces."

Adapted by UNESCO from the two urban master plans of El Mina and Tripoli. Courtesy of the Directorate General of Urbanism.

The master plan of Tripoli was more in line with the DBOT vision of the RKIF administration (and the general supportive local public opinion) who in 2004 were negotiating a major revitalization proposal with Cedarland International Development Group (CIDG). The proposal was to transform the Fair into a Touristic City, including a 65,000 square meters exhibition center, a theme park, a water park, a typical Lebanese village, shopping spaces, restaurants, and hotels among others. The proposal also introduced shopping streets, new ponds, circular squares, as well as a new grid of pedestrian walkways in the southern area.⁸³ The construction works of the first phase were to be completed in 2008 with an estimated financial cost of 232 million US dollars, 100 million of which were insured through Arab and foreign investors.⁸⁴

Considered a pastiche by different members of the Lebanese civil society, especially architects and urban planners, this project proposal would have radically transformed the landscape of the Fair, had it been implemented. However, the project was frozen, as a deep crisis broke out between the RKIF Administrative Board and CIDG since the company could not honor its commitments to ensure funds to implement the project.

Other projects of the same scale continued to be proposed, such as the Chinese Fair in May 2006. This project consisted of completing and equipping the existing exhibition space under the Grand Cover to exhibit Chinese products in the 40,000 square meters area dedicated to this function. A thousand Chinese companies, each represented by three people, were to exhibit their products during the first phase. These 3,000 people were to live in 500 apartments and, as a result of their needs, would help to partially stimulate the economy in the neighborhoods around the Fair. A second phase would be launched, three years later, to double the exhibition space by adding two symmetrical wings behind the main wing, bringing the total area to 80,000 square meters.⁸⁵

Other functions would be served in existing buildings, for instance, those of restaurants and bars. The project for the Chinese Fair seemed poised to come to fruition when, on July 12, 2006, the 33-day war broke out between Israel and Hezbollah, thus ending the project which was strongly supported by the local commercial circles and traders, who in 2008 were still hoping and wondering whether the "Chinese dream" might come true.⁸⁶



Left The Cedarland Master Plan.
Right The Chinese Fair Master Plan.
Courtesy of RKIF Archives.

⁸³ Abdulkader al-Asmar, "هذه هي قصة مدينة «ديزني لاند» للمعارض والسياحة والترفيه والتجارة" [This is the story of Disneyland for exhibition, tourism, leisure and trade], *Al-Liwa* (August 25, 2005).

⁸⁴ Khoder el Sabeen, "معرض رشيد كرامي الدولي في طرابلس: في الوقت الضائع... بانتظار المدينة السياحية" [Rachid Karami International Fair in Tripoli: during the lost time... awaiting the Touristic City project], *Al-Tamaddon* (August 6, 2004): 12.

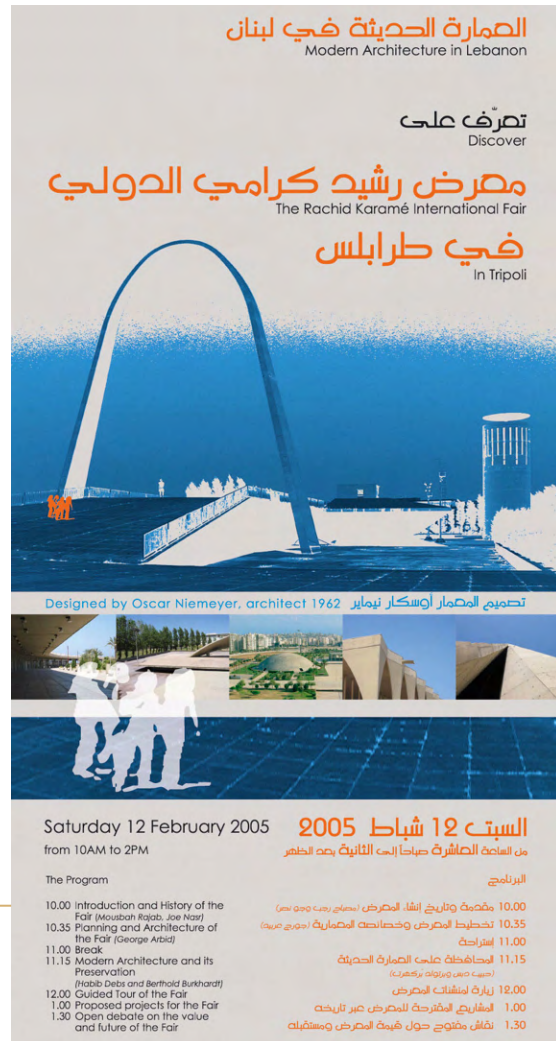
⁸⁵ Anonymous, "صراف: معرض المنتجات الصينية سيضم ألف شركة" [Sarraf: The exhibition of Chinese products will include a thousand companies], *Annahar* (June 5, 2006).

⁸⁶ Anonymous, "دفاعاً عن المعرض الصيني" [In defense of the Chinese exhibition], *Al-Tamaddon* (June 5, 2006): 5; Anonymous, "جمعية تجار طرابلس: دعم مطلق للمعرض الصيني" [Tripoli Merchants Association: Absolute support for the Chinese exhibition], *Al-Tamaddon* (July 10, 2006): 7; Anonymous, "هل يتحقق حلم المعرض الصيني في طرابلس... ومتى؟" [Will the dream of the Chinese exhibition in Tripoli come true ... and when?], *Al-Rakib* (March 8, 2008): 6.

2.3 RKIF Today

2.3.1 National and International Recognition

Prompted by the announcement of the Cedarland Project in 2004 and its impact, a group of intellectuals and academics was spontaneously created in early 2005 to further research Oscar Niemeyer's Fair and promote the complex as a significant example of 20th-century modern architecture in Lebanon.



Poster of the awareness day organized by the group of scholars on February 12, 2005. Courtesy of Mousbah Rajab.

The architectural value of the Fair was acknowledged as an integral part of the city's urban heritage, similar to the Mamluk architecture of the old city (13th-16th centuries), the Ottoman and eclectic architecture of the Tell district (late 19th- early 20th century) and the architecture of the French Mandate period. This group organized different public meetings to advocate against similar mega projects that would disfigure Niemeyer's project while claiming to address the unemployment problem afflicting Lebanon and Tripoli in particular and to call for the preservation of the complex as part of the Modernist heritage.⁸⁷

As the complex continued to face development threats while suffering from deferred maintenance, activists and advocacy groups succeeded in 2006 to place RKIF on the World Monuments Watch to call attention to its preservation.⁸⁸

In 2007, several events were organized around the Fair on the occasion of Niemeyer's 100th anniversary. These advocacy attempts would spread further awareness of the architectural value of the Fair on the national as well as international levels and would lead to further interest from local universities, academics, and architects to rethink the future of the Fair.⁸⁹ Public lectures, site visits, student design studios, photo exhibitions, and talks would concentrate on the Fair.

In 2017, the UNESCO Regional Office in Beirut dedicated a half-day to discover RKIF during its international conference on modern heritage,⁹⁰

⁸⁷ George Arbid, "Oscar Niemeyer, 'a Threatened Complex': The Tripoli Fairgrounds in Lebanon," *DOCOMOMO* 32 (March 2005): 51-52.

⁸⁸ World Monuments Fund, <https://www.wmf.org/project/international-fairground> (accessed May 2, 2023).

⁸⁹ In 2007, on the occasion of Niemeyer turning 100 years, several events were organized, among which a photo exhibition and a round table discussion. Anonymous, "معرض رشيد كرامي الدولي في طرابلس، أي مستقبل ومهرجان بالعيد المائة لولادة المعمار أوسكار نيماير" [Rachid Karami International Fair in Tripoli, What Future? A festival celebrating Oscar Niemeyer's 100th birthday], *Al-Inshaa* (December 7, 2007).

⁹⁰ The conference was held in collaboration with Holy Spirit University of Kaslik and Arab Center for Architecture. See <https://www.usek.edu.lb/news/modern-heritage-in-lebanon-opportunity-or-threat> (accessed May 2, 2023).

a step that would prompt the application for a Keeping It Modern grant from Getty in 2018.⁹¹ This was followed by the official recognition of the importance of the Fair by adding it to the UNESCO World Heritage Tentative List in July 2018, and the subsequent preparation of an emergency nomination file by April 2022. RKIF was internationally recognized as a World Heritage Site by the World Heritage Committee in January of 2023.

2.3.2 Rising Concerns and Increased Attention

At a time when awareness of RKIF's architectural value was increasing, major development project proposals were diminishing. These factors, in addition to the degrading state of Niemeyer's structures and the instability in the region that would discourage foreign investments, led to a radical change in RKIF Administrative Board's strategies toward the operation and revitalization of the Fair. The Administration opted to allow smaller investment projects to take place on the condition that future users would rehabilitate the structure that will be used by respecting the initial design (Rehabilitate, Operate, and Transfer), without disregarding the potential of large-scale proposals.

Several proposals to use some of Niemeyer's spaces (*i.e.* the Lebanon Pavilion as a restaurant, the Experimental Theatre as an opera house and theater, and the Administration and Customs-Firehouse-Depots buildings as a Knowledge and Innovation Center)⁹² did not see the light so far, except for the Guest House adaptive-reuse project (2017-2018).

2.3.3 The Rehabilitation of the Guest House (2018)

The rehabilitation project of the Guest House building by East Architecture Studio successfully transformed the Guest House into a design platform and production facility promoting Tripoli's long-established but declining wood and craftsmanship industry. East Architecture Studio was motivated by an ambition to restore the original design and architectural quality of the space.



The Guest House interior before and after its rehabilitation by Lebanese-based East Architecture Studio.

⁹¹ Deborah Vankin, 2018, "Getty announces 2018 grants funding architectural conservation worldwide, including projects in Cuba and Lebanon", *Los Angeles Times*, October 11, 2018, <https://www.latimes.com/entertainment/arts/la-et-cm-getty-keeping-it-modern-20181011-story.html> (accessed May 2, 2023).

⁹² The Knowledge and Innovation Center (KIC project) was initiated by the Tripoli Special Economic Zone (TSEZ) to be implemented at the northwestern part of the site, offering to rehabilitate and reuse two of Niemeyer's structures (the Administration Building and the Customs-Firehouse-Depots building), while introducing additional functional spaces in the adjacent land. Tripoli Special Economic Zone, "Competition Brief," February 13, 2019, <https://competitions-awards.uia-architectes.org/wp-content/uploads/2021/07/Competition-Brief-KIC-V-10.32-FINAL-13FEB2019-Master-Copy.pdf> (accessed May 8, 2023).

With a limited budget, the architectural syntax has been highlighted through the insertion of transparent partitions around the patio fitting with its width and connecting to the structure above. Besides repairing the stucco on the external side, the rehabilitation has also consisted of cleaning different interior walls, such as the stone partitions in *opus incertum*. The structure of these has been highlighted with a groove surrounding their footprint as well, thus preventing the new concrete casting from touching the original structure. Due to budgetary constraints, this intervention was

limited to the public areas of the building, the formal restaurant, and the atrium.

The guest rooms are still in a precarious condition and bear witness to the period of occupation through numerous graffiti. This adaptive reuse project won the 2022 Aga Khan Award for Architecture.⁹³ It laid the benchmark for future small-scale sensitive rehabilitation initiatives and contributed to the dissemination of the importance of the Fair locally and internationally.

The Guest House main facade before its rehabilitation by Lebanese-based East Architecture Studio.



The Guest House main facade after its rehabilitation by Lebanese-based East Architecture Studio.



⁹³ Aga Khan Development Network (AKDN), "Winners of the 2022 Aga Khan Award for Architecture 2020-2022 Cycle, September 20, 2022", <https://the.akdn/en/how-we-work/our-agencies/aga-khan-trust-culture/aga-khan-award-for-architecture/aga-khan-award-for-architecture-2022-winners> (accessed May 2, 2023).

2.3.4 Government Policies, Ownership, Ordinances, and Management

2.3.4.1 Founding Decrees and Ownership Status

The Permanent International Fair in Tripoli was founded with the issuance of Decree no. 4027 by the Lebanese Government on May 4, 1960, which authorized the establishment of an international fair in Tripoli. With the declaration of the project as a public utility (Decree no. 6247 dated 25/2/1961), the necessary adjoining plots were expropriated later in 1961 and then in 1968 by CEGP to launch the construction works.⁹⁴ It was not until 1998, that the ownership of the expropriated lands was officially transferred to the RKIF Administration.

The name of the Fair was amended several times. From "The Authority of Lebanon's International and Permanent Fair in Tripoli" (Decree no. 9706/1962) to Lebanon's International and Permanent Fair in Tripoli (Law 30/1980). After the end of the Civil War, the name of Lebanon's Permanent International Fair in Tripoli was associated with Rachid Karami, the former Tripolitan Prime Minister assassinated in 1987 (Law 67/August 1991). Therefore, from May 1995 until today, the name of the Fair has officially become "Rachid Karami International Fair in Tripoli" (Law 415/1995).

2.3.4.2 Governance Structure and Management Framework

On February 25, 1961, Decree no. 6247 was issued, and it stipulated the creation of a public institution called "the Permanent Tripoli Fair Administration" that had a civil status to manage and exploit the Fair. Also, Decree no. 6248 was issued on the same day (February 25, 1961) and stipulated the creation of the first board of administration. This was followed by Decree no. 8532 on February 16, 1962, which assigned Amado Chalhoub as the first Director-General of the Fair's Administration. Although affiliated with the Ministry of Economy, this Administration

enjoyed a certain degree of administrative and financial independence with the prior control by the Ministry of Finance. Its Administrative Board included a president and six members appointed by the Council of Ministers. Its expenditures were divided between building costs and administrative costs, and its staff included two permanent employees, workers, and contractual experts.

Since the early 1960s, the Fair has been subject to the General System of Independent Authorities (Decree no. 150/1959 and its amendments). However, Law 30/1980, did not only stipulate the removal of the word "Administration مصلحة" from the title of the Fair, which became "Lebanon's International and Permanent Fair in Tripoli", but it also enlarged the spectrum of its operations to include artistic and cultural events, placed it under the tutelage of the Minister of Economy and Trade (via the government commissioner appointed by the minister), and the control of the Ministry of Finance, and confirmed it being subject to Decree no. 4517, dated 13/12/1972, of the Establishing Statute of Public Institutions. This law (80/30) exempted the Fair management from the supervision of the Civil Service Council, but subjected it to the supervision of the Audit Bureau and financial inspection.⁹⁵

Over the years, the above-defined administrative and operation framework as stipulated by Law 30/1980, did not prove to be either practical or efficient, particularly due to the administrative routine and bureaucracy that delay the implementation of the Board's decisions by the two concerned ministries. Consequently, Law 274/2022 for the reorganization of RKIF was enacted and approved in March 2022. This law aims to encourage and facilitate future investments while protecting the Fair's architectural character. However, it remains partially enforced due to the current political status in the country that prohibits the

⁹⁴ Decree no. 15489, dated July 22, 1968, allowed for the expropriation of additional plots for RKIF.

⁹⁵ The prior control of the Ministry of Finance and the relationship with that of the Ministry of Economy changed with the approval of the Cabinet under the new RKIF private Law no. 274 in 2022.

appointment of a new Administrative Board, and hence, the issuance of some organizational and/or implementation decrees (مراسيم تنظيمية) for some of its undetailed articles.

Like any other independent public administration, RKIF has a Director General appointed by the Council of Ministers and an Administrative Board. Composed of a Chairman and six members, the Administrative Board is nominated by the Minister of Economy and appointed by a presidential decree for a three-year renewable term after the approval of the Council of Ministers.⁹⁶

According to the internal bylaws for the Rachid Karami International Fair, the Administrative Board has the decision-making authority; it supervises the Fair's activities and ensures its proper functioning. The Board takes the necessary decisions to achieve the purpose for which it was established (Article 2 of the bylaws). It also approves business programs and the annual budget and decides on works, supplies, and services within the applicable regulations and tracks.

The RKIF Director is a member of the Board and the head of the executive agency, the Administration (الديوان), responsible for implementing the Board's decisions and ensuring the day-to-day operations at the Fair. The Administration is made up of four sections; Financial, Operation, Marketing, and Legal sections. The number of employees can reach up to 64 including guards. Nevertheless, RKIF has two-thirds vacant positions.⁹⁷ This lack of human resources is due to several reasons, mainly the low budget allocated for the Fair in addition to the low salaries.

2.3.5 The Reorganization of RKIF's Governance Policy

Today, the Fair faces major challenges, not least of which is the absence of good governance, including the modern legal-operational framework likely to attract specialists and entrepreneurs to join its working team. The legal framework of the Fair, which has only become more complex since 1960, restricts its activity with many different laws, decrees, and decisions, in addition to its placement under two guardianship authorities. As a result, the Administration's activities have been compromised like other public institutions in the country where effective communication strategies with the national or international public or private sector stakeholders are lacking.

This failure has been accentuated, on the one hand, by a state policy that favors private initiatives at the expense of the public sector and, on the other hand, by a situation of insecurity and political instability of which Tripoli has been a major victim of even in the post-Civil War period. Furthermore, the exclusivity of hosting exhibitions in Lebanon granted to RKIF in 1995 by the government does not seem to be successfully enforced.⁹⁸ The political centrality and the liberal nature of the Lebanese regime in addition to a very active private sector, seasoned by its foreign experiences during the War, deprived the Tripoli Fair of the major economic and cultural events of the 1990s and onwards, while, instead, these events were monopolized by the capital, Beirut.

In the past few years, Tripoli's Fairground has witnessed a change in the approach of its Board. Warranted by the delicate situation of the exposed concrete and the partial collapse

⁹⁶ With the appointment of a new Administrative Board per Law 274, this structure will change. Law 274 combined the role of the decision-making authority and the implementing authority in the person of the Chairman of the Administrative Board, who will play both roles that of the Director-General and the President of the Board.

⁹⁷ By the end of 2022, RKIF had 18 employees (four administrators and 14 guards) in addition to the Director-General.

⁹⁸ The Council of Ministers issued Decree no. 86/1995 giving RKIF the exclusivity to host international exhibitions effective by January 1, 1996. With the condition to host at least one exhibition annually (as a minimum requirement for this decree to stay in force), the government did not succeed in its enforcement due to the high competition of large companies (private exhibition organizations that grew during the dormant state of RKIF) in the capital Beirut, and their growing role in stimulating the economy and capacity in attracting visitors.



The Grand Cover in 2020, showing the failure of the anchorage for the prefabricated fascia.

of some concrete soffits and roof of the Grand Cover, the Board opted to accept project proposals that include the rehabilitation of one or many structures for adaptive reuse. This reactive approach could be as threatening to the integrity and authenticity of the complex and Niemeyer's concept of unity and harmony as any large-scale development project, especially in the absence of a master plan.

It goes without saying that in addition to the generally unstable security situation and political circumstances of the country, the above legal, financial, and administrative framework has had major repercussions on the overall management dimension and the RKIF complex's current conservation, operation, and development context.

The lack of financing on the State level has put the RKIF Administration in a very precarious position of needing a revenue stream to help with stabilizing all of the buildings on the site and

to help find a sustainable use for each building in the future, in the face of an ever-decreasing operating budget that barely covers salaries. While being reactive in their conservation and development approaches rather than proactive, the current Administration has been keen on preserving the identity and function of the RKIF structures as much as practically possible when negotiating with potential investors and developers. However, this has led to the adoption of a fragmented approach to the conservation and development of the RKIF complex.

On the other hand, the severe shortage in budget and staff (over 40 staff), especially technical staff specialized in marketing and advertising, necessary to promote the Fair's facilities internally and externally, has reduced the Fair's income into short-term rental of spaces for local and national exhibitions and conferences, and other activities such as festivals, concerts, TV ads, and the like. Other longer-term agreements for land rental exist for sports activities such as go-karting and

cycling, as well as renting part of the empty land to serve as the UNHCR's sub-office in Tripoli (The UN Refugee Agency).⁹⁹

Warranted by the degrading physical condition of RKIF structures and the partial collapse of the Open-Air Theatre soffit in 2015, and motivated by the Public Private Partnership Law no. 48 ratified in 2017 by the Parliament,¹⁰⁰ the current RKIF Administration has been open to potential project proposals of any scale that can restore and operate the Fair's different facilities and structures and/or develop the empty plots located outside of Niemeyer's project. This attitude has increased the interest of local investors and developers and encouraged some to propose several projects at the Fair. However, since 2019, these proposals have been on hold due to Lebanon's compounding socio-economic crisis and the impact of the devaluation of the Lebanese pound.¹⁰¹

The newly approved Law 274 (March 2022) was born out of the need to address particularly challenging issues - mainly administrative and financial mechanisms - thought to have blocked or prevented the proper operation of the Fairground and its development. While doing so, the law included only one specific article (article 18) dedicated to the protection of the Fair's character and features as designed by Niemeyer. It defined a core zone and a buffer zone. The law allowed additions in the buffer zone but not in the core zone (reuse of existing structures without any changes to the initial volumes).¹⁰²

This law aims at simplifying the regulatory system and allowing more financial flexibility and faster decision-making by the RKIF Administrative Board. The role of the Ministry of Finance has been removed (no pre- or post-approvals of new investment contracts or on spending from the public annual budget). In addition, the role of the Ministry of Economy is restricted to audits and approvals of new investments and operational contracts.

At the same time, to avoid lengthy bureaucratic procedures for project approvals and new developments, the new law reduced the periods of approvals required by the Ministry of Economy (MoE) to 15 days for new investment or operations contracts. If no official reply is received from MoE within the set duration, the RKIF Administrative Board can proceed. The law also included incentives, exemptions, and compensations for developers to invest in the Fair.

In particular, article 18 of this law stipulates that "both the Administrative Board and the investors should preserve the authenticity of the constructions built in the Fair and take into account their external architectural character and their cultural value, which was confirmed by their inclusion on the UNESCO World Heritage Tentative List...". The law subdivides the Fair into two zones:

- Zone A is a rectangle (80 x 500 m, eighty meters long and five hundred meters wide). It includes Niemeyer's designed complex. Zone A and its structures are subject to the requirements of UNESCO for sites nominated for inclusion on the

⁹⁹ The FOT (Furnish, Operate, and Transfer) agreement with the Quality Inn hotel investor has recently ended and the hotel is currently not operational.

¹⁰⁰ No regulatory decrees for Law 274 are issued yet by the Council of Ministers.

¹⁰¹ The World Bank, "The World Bank in Lebanon: Overview," 2022, <https://www.worldbank.org/en/country/lebanon/overview>; and Ruth Simson, "All trends pointing to a downward spiral, searching for hope in Lebanon's compounding crises," *International Alert*, May 2021, https://www.international-alert.org/blogs/all-trends-pointing-downward-spiral-searching-hope-lebanons-compounding-crises/?gclid=CjwKCAjwge2iBhBBEiwAfXDBR7xzBaZyvmZgzQ3ZcstfbwD3iHyUcA_ZmU5j_RisM0lknYnATV55IRoCKwYQAvD_BwE (accessed May 9, 2023).

¹⁰² However, this law contradicts the expectations of the World Heritage Committee (as well as the recommendation to the World Heritage Committee of ICOMOS) to redefine the core zone as the entire elliptical site and the buffer zone as the perimeter beyond the ellipse. The directive from the World Heritage Committee is to review and clarify the boundaries during the Reactive Monitoring Mission. By enlarging the core zone, there will be greater control over the compatibility of what is constructed in the remainder of the ellipse, and through the addition of zoning regulations, reduce the impact of future development in the perimeter of the ellipse from overwhelming the World Heritage site.

World Heritage List, and any intervention, whether it is a restoration, reconstruction, or internal development, is subject to the approval of the Ministry of Culture.

- Zone B covers the rest of the Fair's site located within the oval shape, that form a buffer zone for heritage constructions. Zone B (the Buffer Zone) is subject to the requirements of buffer zones for sites nominated for inclusion on the World Heritage List. New constructions are subject to the approval of the Ministry of Culture.

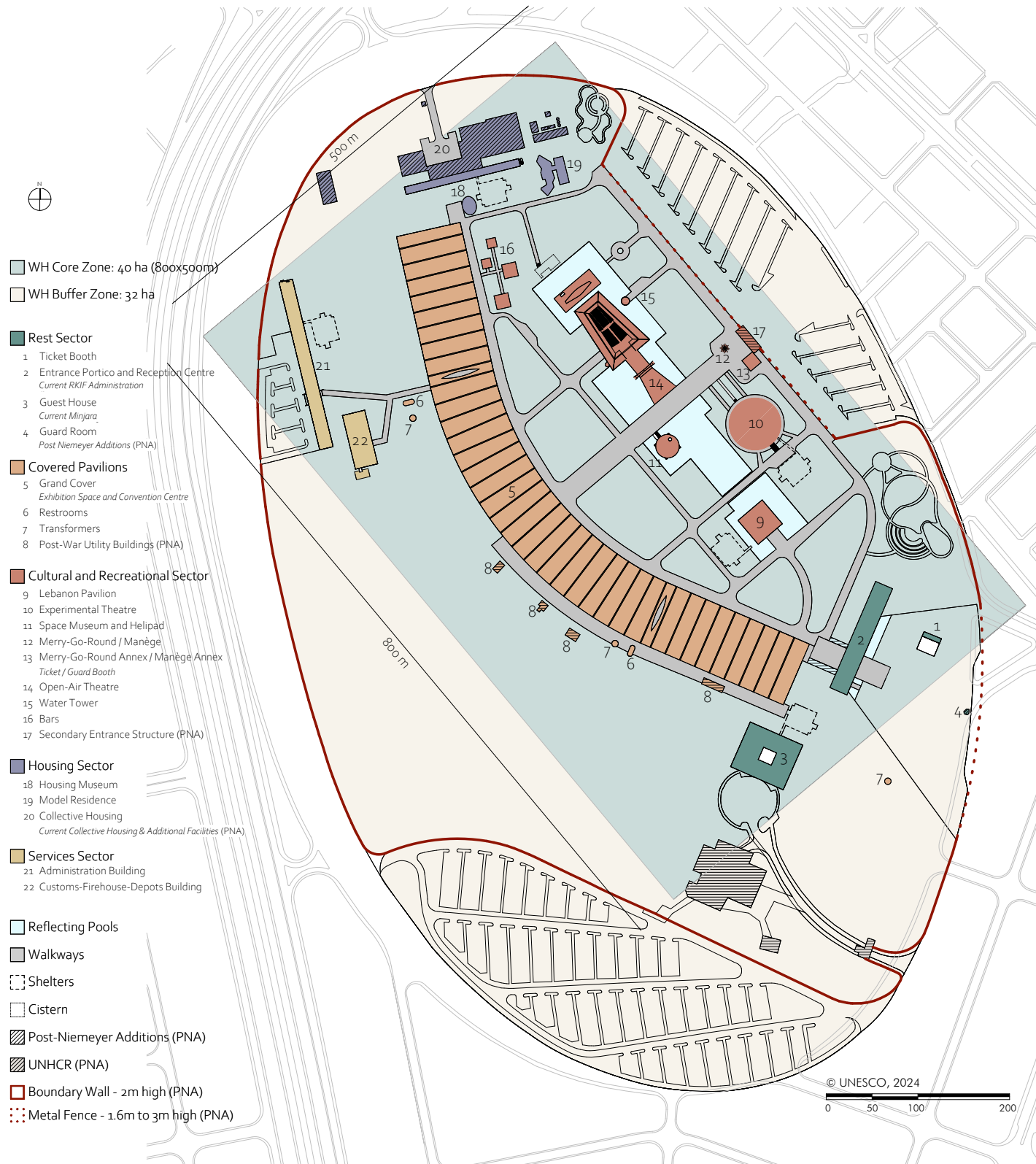
This particular law does not address holistically and equally the need for the protection, management, conservation, and future development of the core and buffer zones. While focusing on encouraging development, it restricts the role of the Ministry of Culture to the evaluation and approvals of new development and/or conservation projects within Zones A and B and excludes its monitoring technical role over minor interventions during events' preparation and execution. The Ministry of Culture is also excluded from the day-to-day management and care for the complex. In the absence of bylaws (organizational decrees *مراسيم تنظيمية*), the role of the Ministry of Culture and the mechanism of its involvement is not clearly stated within Law 274.

With the inscription of RKIF to UNESCO's List of World Heritage in Danger on January 24, 2023 at the 18th Extraordinary Session of the World Heritage Committee, the governance including management, conservation, and/or development of the site must fall now within the parameters of *The Operational Guidelines for Implementation of the World Heritage Convention*,¹⁰³ and hence, it is hoped that the Ministry of Culture's role, being the responsible authority to ensure the implementation of the 1972 Convention on behalf of the State Party, is enhanced while respecting the existing laws in place, giving way for more informed participatory management and care for what has now become a World Heritage Site.



View from the reflecting pool of the OAT, looking southwest.
Note the Graffiti and status of the lower part of the Water Tower.

¹⁰³ UNESCO World Heritage Centre, *Operational Guidelines for the Implementation of the World Heritage Convention* WHC.21/01, (July 31, 2021); <https://whc.unesco.org/en/guidelines/> (accessed May 9, 2023).



The plan shows the World Heritage Site limits of RKIF as proposed by the State Party. These limits are set based on Law no. 274: The protected rectangular area (Zone A) encompassing all Niemeyer-designed structures is the World Heritage core zone and the extant part of the oval (Zone B) corresponds to the World Heritage Buffer Zone.¹⁰⁴

Source: Based on the initial plan submitted with the Emergency Nomination File. Republic of Lebanon, *Emergency Nomination of Rachid Karami International Fair – Tripoli-Lebanon* (2022); <https://whc.unesco.org/en/list/1702/documents/> (accessed May 11, 2023).

¹⁰⁴ Refer to Chapter 3, Section 3.11.2 and Chapter 5, Sections 5.1 and 5.2 for the World Heritage Committee recommendations in relation to RKIF's WH site boundary.



View of the Open-Air Theatre, looking north. Note the Quality Inn hotel in the background.

© Chawki Fafat, 2018



CHAPTER 3

Assessment of Cultural Significance

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ASSESSMENT OF CULTURAL SIGNIFICANCE



Policy for managing a place must be based on an understanding of its cultural significance ”

Australia ICOMOS, *Burra Charter*, 2013, article 6.2

3.1 Introduction

The purpose of assessing cultural significance is to understand the values assigned to a heritage place and based on their evaluation, to reveal their significance through future interventions, presentation and interpretation. In this chapter, the Conservation Management Plan explores RKIF as an Oscar Niemeyer design, his unique concept for RKIF as an international fairground, and the relationship between his buildings and the landscape of reflecting pools and open spaces.

In addition, RKIF's local significance is explored in terms of its social history and urban role. The material significance of RKIF's physical fabric is discussed as well as the threats and vulnerabilities to the site. Character-defining features, also known as attributes, are identified, as these elements convey site significance, and thus need to be treated with particular care. The survival of what was built and what has been altered is described, along with the corresponding impact to authenticity and integrity.

There is a discussion of the thematic framework within which RKIF is positioned as a Modernist monument, from which a comparative analysis is made to other World Heritage and Tentative List sites, as well as nationally protected Niemeyer ensembles and structures in Brazil, Niemeyer-

designed sites in the MENA region, and other MENA-region fairgrounds. The site is then positioned as a national landmark for Lebanon. A review of RKIF as a World Heritage site in danger is undertaken, followed by the Statement of Outstanding Universal Value (OUV) for which the site was inscribed on the World Heritage List. The chapter culminates with a broader Statement of Cultural Significance, encompassing not only the site's OUV but also its significance within Lebanese society, locally and nationally.

3.2 As a Work by Oscar Niemeyer

3.2.1 The Architect

Born in 1907, Oscar Niemeyer's international recognition can be traced back to 1936 when he joined a team led by Lucio Costa to design the headquarters of Brazil's Ministry of Education and Public Health. Currently named *Palácio Capanema*, this building is the first high-rise to have been executed according to principles of modern architecture set by Le Corbusier and was subsequently featured in the exhibition, *Brazil Builds*, at the Museum of Modern Art in New York in 1943.¹⁰⁵

¹⁰⁵ Philip L. Goodwin and Smith G.E. Kidder, *Brazil Builds: Architecture New and Old, 1652-1942/Construção Brasileira: Arquitetura Moderna e Antiga, 1652-1942* (New York: Museum of Modern Art, 1946).

Lucio Costa later invited Niemeyer to co-design with him the Brazilian Pavilion at the 1939 New York World's Fair and the project's ability to interweave beauty, modernity, and the tropics resulted in an unqualified success among North American and European architectural critics who praised the building in a number of important journals, such as the *Magazine of Arts*, *Architectural Record*, *Architectural Forum*, *Architettura*, *Casabella*, and *L'Architecture d'Aujourd'hui*.¹⁰⁶

The Fair's Architecture Commission, headed by Stephen Voorhees – then President of the American Institute of Architects – approved the final scheme unanimously and "with a great deal of enthusiasm."¹⁰⁷ Costa cites one of the Commission's members as having declared the Brazil Pavilion as "one of the best things presented to the Fair."¹⁰⁸ A year later, Niemeyer met Juscelino Kubitschek, the mayor of Belo Horizonte, who commissioned him to design the Pampulha Modern Ensemble, which was added to UNESCO's World Heritage List in 2016.

In 1947, Niemeyer was invited to join an international "Board of Design" that had been charged with the mission of designing the United Nations Headquarters project.¹⁰⁹ Despite the fact that Wallace K. Harrison, who led the Board of Design, insisted that Niemeyer had "to move on his own" and that "he had been invited to

participate as a full member of the team,"¹¹⁰ the then young Brazilian architect initially abstained from presenting any drawings. This was due, or so Niemeyer wrote, to Le Corbusier's fear that his own scheme – which he had begun developing prior to the formation of the Board of Design – was being misunderstood and that yet another scheme from the same ideological camp would add to what was then perceived as an ongoing confusion.¹¹¹ As Niemeyer recounts in a letter written to his then mentor Lucio Costa, he kept on refusing on the basis that he "did not want to do anything that might vex or undermine Le Corbusier."¹¹²



Excerpt from *L'Orient* article dated April 28, 1962 announcing the name of the "famous Architect of Brasilia, Oscar Niemeyer, for the Fair in Tripoli."

Source: Courtesy of *L'Orient-Le Jour*.

© L'Orient-Le Jour Archives*

¹⁰⁶ F.A. Whiting, Jr. (Editor), "New York World's Fair," *Magazine of Arts* 32, no. 5 (Washington, DC: The American Federation of Arts, May 1939), <https://www.biblio.com/book/magazine-art-may-1939-volume-32/d/346732380> (accessed September 29, 2023); "New York Fair: Flexibility, Circulation and Light Control," *Architectural Record* (August 1939): 46 <https://usmodernist.org/AR/AR-1939-08.pdf> (accessed September 29, 2023); "World Fairs: New York - San Francisco," *Architectural Forum* 70, no. 6 (June 1939): 448-449, <https://usmodernist.org/AF/AF-1939-06.pdf>; and Lucio Costa, Oscar Niemeyer and Paul L. Weininger, "Pavilion du Bresil: Exposition Internationale a New York," *Architecture d'Aujourd'hui* 13-14 (September 1947): 20-21, https://portaildocumentaire.citedelarchitecture.fr/pdfjs/web/viewer.html?file=/Infodoc/ged/viewPortalPublished.ashx?eid%3DFRAPN02_AA_1947_013-014_1 (accessed September 29, 2023).

¹⁰⁷ Anonymous, "Termo do julgamento do concurso de anteprojetos para o Pavilhão Brasileiro em Nova York," *Arquitetura e Urbanismo*, (1938): 99.

¹⁰⁸ *Ibid.*

¹⁰⁹ In order to avoid the lengthy competition process that produced the League of Nations on Lake Geneva, the then Secretary-General, Trygve Lie, appointed a Board of Design, which consisted of Gyle Soilleux (Australia); Gustave Brunfaut (Belgium); Oscar Niemeyer (Brazil); Ernest Cormier (Canada); Ssu-ch'eng Liang (China); Le Corbusier (France); Sven Markelius (Sweden); Howard Robertson (United Kingdom); Julio Vilamajo (Uruguay); and Nikolai Bassov (USSR). Wallace Harrison acted as Director of Planning and was ultimately in charge of the project.

¹¹⁰ George A. Dudley, *A Workshop for Peace* (Cambridge: MIT Press, 1994), 137.

¹¹¹ Oscar Niemeyer, "O projeto das Nações Unidas," *Módulo* 96 (1987): 28.

¹¹² Oscar Niemeyer, Letter to Lucio Costa, undated (Casa de Lucio Costa Archives).

On April 25th of that year, Niemeyer finally presented his scheme, which consisted of perspectives drafted by Hugh Ferriss, a model, and eight plates of drawings. A brief on the eighth plate not only explained the project but, surprisingly enough, also called the attention of his colleagues "to the advantages offered by scheme number 23 in functional as well as plastic interest."¹¹³ Number 23 was the scheme proposed by Le Corbusier, which had an open-air theater above the General Assembly building. The final project was based on Niemeyer's proposal as Harrison advised the Board: "that the only satisfying scheme is the one carried out and drawn up by Niemeyer, similar to Le Corbusier's idea."¹¹⁴

By 1956, Niemeyer was entrusted with the organization of the design competition that would select a master plan for Brazil's new capital, Brasilia, inscribed as a World Heritage site in 1987. Having been appointed head of the architecture department of NOVACAP,

the government agency created to develop Brasilia, Niemeyer eventually designed all major government headquarters and palaces. Following his reputation after Brasilia, he was invited, in 1962, by the Lebanese Government to develop the plans of the Tripoli Fair in Lebanon.

Throughout the remaining trajectory of his career, Niemeyer received many international prizes and awards, such as the International Lénin Prize (1963), the Pritzker Prize for Architecture (1987), the Golden Lion at the sixth International Architecture Exhibition of the Venice Biennale (1996) and Japan's Praemium Imperiale prize (2004).

3.3 As an International Fairground

3.3.1 The Architecture

As with all other projects designed by Niemeyer, the first document to be produced in his creative process was an "album," a set of consecutive plates that consists of a handwritten argument illustrated with numbered sketches in the margins. The album for the Tripoli Fair project that Niemeyer drafted in 1962 was printed and published the following year by the Lebanese public works agency, the *Conseil Exécutif des Grands Projets*.

In this foundational document, Niemeyer argues that international fairs must be resituated according to notions of harmony and unity, which is something that had hitherto not been the case.¹¹⁵ Niemeyer goes on to say that the Lebanon International Fair will be the first to be based on a criterion of aesthetic unity and equilibrium, where pavilions are designed as shelters for the exhibition of products rather than have the false characteristics of a palace or residence.

M. OSCAR NIEMEYER (CRÉATEUR DE BRASÍLIA) S'EST RENDU AUSSITÔT À Tripoli

pour élaborer, sur place, les plans de la Foire

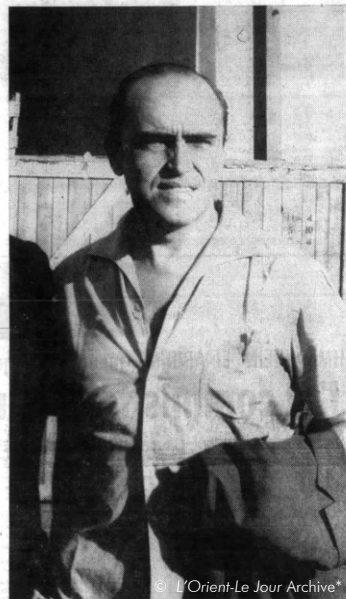
Oscar Niemeyer, 54 ans, considéré comme l'un des plus grands architectes du monde, est arrivé à Beyrouth hier matin, à bord du S.S. « Achille », sur l'invitation du gouvernement libanais, afin d'élaborer les plans de la prochaine Foire Internationale de Tripoli. Il a été accueilli par M. Ballivier de Freitas, ambassadeur du Brésil au Liban, et M. Amado Chalhoub, directeur de la Foire. Lundi, il sera reçu par le Président Chehab, à Zouk.

Niemeyer, qui est une des « gloires nationales » du Brésil, a accordé, il y a quelques mois, au correspondant de « L'Orient Littéraire », une interview exclusive où il définissait le métier d'architecte, tel qu'il le conçoit.

« L'architecture c'est le complément de la vie, et la vie c'est ce qui importe avant tout. Je suis en faveur d'une liberté plastique presque illimitée, qui, au lieu de s'assujettir servilement à des raisons techniques ou fonctionnelles déterminées, constitue une invitation à l'imagination, aux choses nouvelles et belles, dont l'audace et l'esprit créateur puissent surprendre et étonner, et qui permette — quand il le faut, — une atmosphère d'extase, de rêve et de poésie. »

Au sujet de Brasilia, il affirme : « Ce que j'ai cherché à faire, c'est une œuvre d'art. Il se peut que je me sois trompé mais je trouve que ce que j'ai fait est beau. D'autres, surtout ceux dont l'opinion compte énormément pour moi, sont du même avis. Je pense surtout à Le Corbusier, mon grand maître, et à Jean-Paul Sartre, mon ami. »

« Certains secteurs de l'architecture contemporaine s'insurgent contre ma conception de liberté plastique.



M. Niemeyer photographié, hier matin, à son arrivée à Beyrouth.

Excerpt from *L'Orient* article dated July 29, 1962 announcing the arrival of Oscar Niemeyer to develop the plans of the Fair in Tripoli.

Source: Courtesy of *L'Orient-Le Jour*.

¹¹³ Oscar Niemeyer, *Brief for the UN Headquarters, Scheme 32, plate no. 8* (Oscar Niemeyer Foundation Archives).

¹¹⁴ Wallace Harrison, cited in George A. Dudley, *A Workshop for Peace* (Cambridge: MIT Press, 1994), 403.

¹¹⁵ Oscar Niemeyer, "Mémoire Descriptif du Projet de la Foire Internationale et Permanente du Liban à Tripoli," in *Foire Internationale et Permanente du Liban à Tripoli*.

It should be noted that Oscar Niemeyer's architecture assumes, first and foremost, its autonomous status as an aesthetic object prior to performing any function. In his essay on form and function, Niemeyer could not have been more explicit on this matter: "I am in favor of an almost unlimited plastic freedom, a freedom that is not slavishly subordinate to the reasons of any given technique or of functionalism."¹¹⁶

The distinguishing factor between form and function is beauty, one that is neither derived from utility nor from that which a particular building is programmed to fulfill. Beauty is itself understood by Niemeyer as an "indispensable function, the only one capable of leading architecture to the higher level of a work of art."¹¹⁷ It certainly does not rest on a programmatic purpose, which relieves architecture from being approximated to any sort of machinic process, the beauty of which would otherwise be measured by how well it performs its function. For Niemeyer, architecture is, on the contrary, a pleasure apparatus "capable of arousing surprise and emotion by [its] very newness and creativeness; a freedom that provides scope—when desirable—for moods of ecstasy, reverie and poetry."¹¹⁸

Such a position against reification is, in many ways, similar to Theodor Adorno's notion of the autonomous work of art, as developed in his *Ästhetische Theorie*. Architecture, like a work of art, we are told, is able to expose the "delusory presuppositions of engagement" because of its ability to transgress socio-historical moments.¹¹⁹ Autonomy is therefore meant to disassociate architecture from historically charged systems of production as well as from the modeling of processes be they social, mechanical, natural, or digital. Much as in Adorno, Niemeyer would nonetheless maintain that the autonomy of architecture serves to resist a pre-determination



Excerpt from *L'Orient* article dated August 1, 1962. During an interview with Raoul Verney, Oscar Niemeyer describes the Fair in Tripoli to be a "museum for the modern object."

Source: Courtesy of *L'Orient-Le Jour*.



Excerpt from *L'Orient* article "The architect must always look for a new solution", dated September 14, 1962. Written by Oscar Niemeyer, the article explains to the public the conceptual background of his design for the Fair in Tripoli and the new solution represented in the design of the Grand Cover.

Source: Courtesy of *L'Orient-Le Jour*.

¹¹⁶ Oscar Niemeyer, "Form and Function in Architecture," *Módulo* 21 (1960): 3.

¹¹⁷ Oscar Niemeyer, "Considerações sobre a arquitetura brasileira," *Módulo* 44 (1976): 37.

¹¹⁸ Niemeyer, "Form and Function in Architecture," 3.

¹¹⁹ James Harding, "Historical Dialectics and the Autonomy of Art in Adorno's *Ästhetische Theorie*," *The Journal of Aesthetics and Art Criticism* 50, 3 (1992): 184.

generated by historiographic discourse rather than claim independence from practical life or society. The ability to see, or even create architecture outside the vicissitudes of social or other apparatuses, allows it to survive beyond immediate inputs, influences, group, or class (making it thereby amenable to a pleasure-based reception).

“

... an exhibition pavilion, truly to express the spirit of a pavilion, should be reduced to a mere roof, a mere shell to encase the exhibits and not, as generally happens, plastered with the sugary characteristics of a palace, a residence, etc.”¹²⁰

Le président Karamé à la presse :

«L'idée d'un bâtiment unique, tel que conçu par M. Oscar Niemeyer pour la Foire de Tripoli, est révolutionnaire»

- Le bâtiment central aura 750 mètres de longueur sur 70 de largeur, et 7 de hauteur
- Les pavillons seront reliés par un train électrique pour le déplacement des visiteurs
- Le coût total du projet est estimé à 22 millions de livres

Le président du Conseil des ministres, M. Rachid Karamé, a tenu hier à midi en son cabinet du Siraï, une conférence de presse à laquelle ont assisté de nombreux représentants de la presse, de la radio et de la télévision.

Après avoir accueilli la bienvenue aux journalistes, M. Karamé a déclaré que l'ensemble de projets tels que la Foire Internationale du Liban à Tripoli, l'aménagement du Sine basins du port de Beyrouth, la construction d'un nouveau Centre Gouvernemental, etc., « permettront au Liban d'accéder à une place de choix parmi les nations évoluées ».

L'amitié de M. Niemeyer pour le Liban

M. Karamé a ajouté : « L'architecte, M. Oscar Niemeyer, ministre de Brasília, a accepté avec empressement de venir au Liban pour dresser les plans de la Foire de Tripoli, ce qui compte de nombreux amis au Liban et parmi les congrès libanais du Brésil ».

« Le terrain sur lequel s'élève la Foire a été imposé à M. Niemeyer. Celui-ci aurait préféré un terrain situé au bord de la mer. Une fois le plan de la Foire établi, le terrain aurait été plus facile à aménager, non seulement celui des constructions, mais aussi celui des installations ».

Un bâtiment unique et révolutionnaire

Le Chef du gouvernement a poursuivi : « M. Niemeyer a divisé son plan en deux parties : le bâti-



© L'Orient-Le Jour Archives*

Excerpt from L'Orient article dated September 4, 1962. In his speech to the press, Lebanon's Prime Minister Rachid Karami describes the design of the Fair as "revolutionary".

Source: Courtesy of L'Orient-Le Jour.

For architecture to make sense, Niemeyer would say, it must move and induce pleasure, after all, "beauty is also a function."¹²¹ And should beauty be indeed measured by the pleasure it elicits, one might also consider Roland Barthes as another possible reference to Niemeyer's discourse on function, where like a text, architecture "contents, fills, [and] grants euphoria."¹²²

For Niemeyer, the curve has always been in direct opposition to what is straight as well as to what becomes normatively standard within modern architecture.¹²³ This can best be illustrated in his *Poema da Curva* (1975), which seems to directly counter Le Corbusier's *Poème de l'Angle Droit* (1955), even if by the time Niemeyer wrote his poem, Le Corbusier's had already begun abandoning the rectitude of his angles. The opposition between the two poems is nonetheless flagrant yet so is Le Corbusier's eventual change of mind, which was noted by Niemeyer himself when he cites Ozenfant: "Le Corbusier, after having defended the purist discipline and loyalty to the right angle to which he claimed particular rights, seems to have decided to abandon it, having felt in the wind the premises of a new Baroque, coming from elsewhere."¹²⁴

It remains true, however, that in the discourse of Le Corbusier, the curve had been accused of being "ruinous, difficult and dangerous; it is a paralyzing thing."¹²⁵ For Le Corbusier, a river, like an idea, is ruled by the "law of the meander," which inevitably throws them both off course and consequently bends their straightness (i.e., their metaphoric clarity): "The loops of the meander have made something like figure eights, and that's stupid."¹²⁶

¹²⁰ Oscar Niemeyer, "Feira Internacional e Permanente do Líbano em Trípoli" Módulo 30 (October 1962): 11.

¹²¹ Cited in Elyane Lins Correa, *Oscar Niemeyer: Reflexiones sobre la Arquitectura*, Ph.D. diss. (Barcelona: Universitat Politècnica de Catalunya, 1999), 156.

¹²² Roland Barthes, *The Pleasure of the Text* (New York: The Noonday Press, 1975), 14.

¹²³ Oscar Niemeyer often told the story when Gropius visited his house in Canoas and said that it was beautiful yet not reproducible, about which he condescendingly then thought: "silly things can indeed be said with airs of seriousness." Oscar Niemeyer, "Os caminhos da arquitetura," *Piracema* 1 (1993): 36.

¹²⁴ Oscar Niemeyer, *A Forma na Arquitetura* (Rio de Janeiro: Avenir Editora, 1980), 29-30.

¹²⁵ Le Corbusier, *The City of Tomorrow* (Cambridge: The MIT Press, 1972), 16.

¹²⁶ Le Corbusier, *Precisions on the Present State of Architecture and Planning* (Cambridge: The MIT Press, 1991), 143.



Excerpt from *L'Orient* article dated December 24, 1966, showing Oscar Niemeyer during his second visit to Tripoli with Ferdinand Dagher in front of the RKIF's Model. In his conversation with *L'Orient*, Oscar Niemeyer presents the Tripoli Fair as the architectural example for all other future fairs.

Source: Courtesy of *L'Orient-Le Jour*.

Eventually, “at the most desperate moment” a river will again run straight, “thus a pure idea has burst forth, a solution has appeared” and neither straight line nor idea are sinuous any longer.¹²⁷ The sketch that illustrates this “law of the meander” was drawn while flying over South America itself and was later incorporated in the *Poème de l'Angle Droit* where it is approximated with “the crawling, the sinuant, the reptant,” not to mention worms and snakes “hailing from the potential of carrion.”¹²⁸ In such a conception, the meander stands for what is old and irrational versus the new and rational straight line of modernity.

Le Corbusier's use of such metaphors probably sounded not all that convincing to Niemeyer, for whom the meander, the zigzag, or the path of least resistance have their intrinsic value in Brazil and are often valorized according to their

degree of *ginga*, which translates as “swing” in English and which, for Niemeyer, is certainly something that ought to be promoted rather than disdained. It is ironic that Le Corbusier himself originally recognized such a value yet later mocked it in an inexplicable about face. In the posthumously published manuscript of *La Construction des Villes*, Le Corbusier urged planners, as early as 1910, to retain the lesson of the donkey in the design of roads, for example.¹²⁹ This analogy of the meander, abandoned by Le Corbusier, was ultimately recuperated by Niemeyer who, faced with such declared yet inexplicable phobia for the sinuous, eventually wrote his own ode to the curve:



It is not the straight angle that attracts me.

Neither does the straight, hard, inflexible line, drawn by men.

What attracts me is the free and sensuous curve that I find in the mountains of my country, in the sinuous flow of its rivers, the clouds in the sky, the body of a beloved woman.

Of curves the universe is made, the curved universe of Einstein.¹³⁰

The meandering curve happens to be the most recognizable signature of modern architecture in Brazil and as such, it first appeared in the ramp of the Brazilian Pavilion that Niemeyer and Lucio Costa designed for the 1939 New York World's Fair. Access ramps became for Niemeyer, from then on, the very architecturalization of the meander, so ridiculed by Le Corbusier. The consequence of using ramps, for Niemeyer, was to extend the pleasure of penetrating a building by prolonging the visual display of its beauty in

¹²⁷ *Ibid.*

¹²⁸ Le Corbusier, *Poème de l'Angle Droit* (Paris: Editions Connivences, 1989), 35.

¹²⁹ Charles-Edouard Jeanneret, *La Construction des Villes* (Paris: Fondation Le Corbusier, 1992).

¹³⁰ Oscar Niemeyer, “Poema da Curva,” *Módulo 97* (1988): 26-27.



RKIF's Grand Cover.
Also known as the
"Boomerang".

relation to its surroundings. By not having to rely on the mechanical step imposed by stairs and by causing a shift from the conceptual to the sensorial, the ramp liberated access from undue mechanization and materialized the promenade that Le Corbusier himself had suggested.

Niemeyer's projects are, in general, designed in such a way as to make them as penetrable as possible. Supports are reduced, volumes are lifted off the ground, obstacles are removed, rooftops are reachable, all contributing to maximum penetrability. A building by Niemeyer does not stand in the way of access, it can be walked under or above, can be seen right through or from a distance, and even its unavoidable balustrades diminish their impeding function by turning into benches.

Oscar Niemeyer's project for the Tripoli Fair also owes its significance to, and is a precedent of, an architecture he had developed elsewhere and that has been deemed worthy of legal protection at national and international levels. While in Tripoli, Niemeyer repeated details from his projects in Brasilia, as well as tested out ideas that were later applied to major buildings designed in the very months following his Lebanese sojourn and that have since been added to Brazil's list of historic sites, along with many other of Niemeyer's works.¹³¹

Once back in Brasilia, for example, Niemeyer designed the *Instituto Central de Ciências*, which was marked by a ceremonial entrance, a *Praça Maior*, that in many ways recalls the monumental entrance to the site in Tripoli. This becomes particularly evident when both monumental entrances are compared to the *entrada magna* of Lucio Costa's 1936 project for a university campus in Rio de Janeiro, on which Niemeyer worked as a young draftsman.

Lucio Costa later won the Brasilia design competition, and it was Niemeyer who had already been selected to design most of Brazil's new federal government buildings. With its concrete exoskeleton surrounding a glazed volume and floating on water, the Lebanon Pavilion also stands as a direct model for one of Niemeyer's most sophisticated buildings, namely his second version for Brasilia's Ministry of External Relations, or *Palácio do Itamaraty*. The architecture of the roof of the Itamaraty Palace happens to also carry over the same structural logic that was developed for the Guest House in Tripoli. The columns of the Lebanon Pavilion form a series of pointed arches and are visibly a nod to local architecture yet, if flipped upside down, they are a direct reference to the famous columns of the Alvorada Palace, designed four years earlier.

¹³¹ Brazil's heritage register, the National Historic and Artistic Heritage Institute (i.e., *Instituto do Patrimônio Histórico e Artístico Nacional*, IPHAN), has so far listed 27 works by Niemeyer on its register of protected sites.



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© Ricardo Stuckert/Presidência da República/Wikimedia.com

Left Brasília's Ministry of External Relations, *Palácio do Itamaraty*, designed by Niemeyer in 1962.

Source: A C Moraes, *Palácio do Itamaraty, Brasília, Brasil*, (May 4, 2008), Wikimedia, Flickr, CC BY 2.0, <https://commons.wikimedia.org/w/index.php?curid=14985911> (accessed March 10, 2024).

Right Exterior view of the Alvorada Palace, *Palácio da Alvorada*, designed by Niemeyer in 1957.

Source: Ricardo Stuckert, *Exterior view Palácio da Alvorada*, (May 4, 2006), Presidência da República, https://en.m.wikipedia.org/wiki/File:Palacio_da_Alvorada_Exterior.JPG (accessed March 10, 2024).



© UNESCO/Leva Saudargaite, 2023

RKIF's Lebanon Pavilion designed by Niemeyer in 1962.

The Experimental Theatre in Tripoli also has a famous precedent, the *Oca*, designed a decade or so earlier for the Ibirapuera Park in São Paulo.

While the project in Tripoli has gone through a series of modifications since it was first designed in 1962, it has stayed true to the original design syntax articulated in the earliest album text and sketches. By giving the buildings a monumental scale able to dignify industrial production, the project's intent was, and is, to recognize the importance of the Lebanese Republic on the world stage. Change over time is inevitable and when it comes to the cultural legacy of his work, Niemeyer would, no doubt, agree with the *Québec Declaration on the Preservation of the Spirit of Place* that was made at the 16th General Assembly of the International Council on Monuments and Sites (ICOMOS).¹³² What was always important to Niemeyer, and made clear by ICOMOS, is

that the significance of monuments cannot be disassociated from their "intangible elements (memories, narratives, written documents, rituals, festivals, traditional knowledge, values, textures, colors, and odors, etc.)."¹³³

For a complex such as the Tripoli Fair to maintain its authenticity, therefore, it must adequately support both its tangible and intangible dimensions in order to perpetuate the ideas that brought the nation and architecture together in the first place. The importance of the project is such that it leaves little room to maneuver outside its own syntax. By intervening mainly in the landscape's architectural voids and on the project's borders, the evolving program can be both updated and upgraded while enhancing the desired monumentality of the place, be it by confronting, challenging, or respecting it. Manipulations in section, *i.e.*, pushing, folding,

¹³² ICOMOS, *Québec Declaration on the Preservation of the Spirit of Place*, Québec - Canada, October 4, 2008, <https://whc.unesco.org/uploads/activities/documents/activity-646-2.pdf> (accessed November 1, 2022).

¹³³ *Ibid.*

Left The Oca, an exhibition pavilion at Ibirapuera Park in São Paulo, designed by Oscar Niemeyer in 1951.

Source: Eduardo Yamanaka, *Pavilhão da Oca*, (February 6, 2012), Wikimedia, https://commons.wikimedia.org/wiki/File:Pavilhao_oca_ibirapuera.jpg, (accessed March 10, 2024).

Right RKIF's Experimental Theatre designed by Niemeyer in 1962.



and lifting, add up to possible strategies that can contribute to Niemeyer's design syntax.

Monumentality and the valorization of industrial production are what drove this project, be it by making the main structure visible from a distance, by eliminating supports underneath the Grand Cover, by siting pavilions on water in order to double them in size and reflection, or by creating noble spaces for the display of industrial and commercial products. Structurally, the Lebanon Pavilion achieves what was not possible to implement back in the architecture of Brasília's palaces: a real exoskeleton that truly carries the load of the entire building. This made it possible to free up the space –where pilotis would usually be– from all and any supporting elements.

Niemeyer's project in Tripoli is a fine and rare example of a mid-20th-century campus architecture and a major representative work of such an architecture in the Arab Middle East. With perhaps the exception of Seattle 1962 World's Fair, there are no fairgrounds of that era and style that have survived intact to this day, as much as Niemeyer's has.¹³⁴ Each building across the entire site is innovative, not only in terms of form but also in terms of technique. Long

spans without intermediary support, for example, resulted in one of the earliest applications of post-tensioned concrete technology in the country, if not the region.¹³⁵ A living expression of principles and ideals advanced by architecture's Modern Movement, Niemeyer's project was effectively integrated into the context of the Middle East, i.e., near the historic center of the city Tripoli, itself inscribed on the World Heritage Tentative List. The project has since been not only in the press but in the many books and journals that study Niemeyer's architecture. The international architectural journal, *L'Architecture d'Aujourd'hui*, was among the first to publish the project in 1965.¹³⁶ Decades later, the project continues to be featured in books written by architectural historians, such as David Underwood and Styliane Philippou.¹³⁷

3.4 As a Landscape and Series of Pools

As in just about all of Niemeyer's works, vast lawns play a vital role in setting up perspectives and foregrounds that reveal and conceal portions of the program where volumes are in stark contrast with the plane out of which they

¹³⁴ A big difference between RKIF and the Seattle 1962 World's Fair is that the latter included buildings designed by various architects, whereas the former is the implemented vision of a single architect. For further information about the Seattle World's Fair, refer to Paula Becker, Alan J. Stein and the Historylink Staff, *The Future Remembered: The 1962 Seattle World's Fair and Its Legacy* (Seattle: Seattle Center Foundation, 2011).

¹³⁵ Ferdinand Dagher (member of the CEGP), Interview with Farès el-Dahdah on Oscar Niemeyer's Project in Tripoli, Beirut, October 1, 2001.

¹³⁶ Oscar Niemeyer, "Foire Internationale et Permanente du Liban à Tripoli," *L'Architecture d'Aujourd'hui* 105 (1965): 96-10.

¹³⁷ David Underwood, *Oscar Niemeyer and the Architecture of Brazil* (New York: Rizzoli, 1994), 156-158; Styliane Philippou, *Oscar Niemeyer: Curves of Irreverence* (New Haven and London: Yale University Press, 2008), 316-317.



View of the Cultural and Recreational Sector revealing the characteristic style of Niemeyer: the curving concrete or free forms.

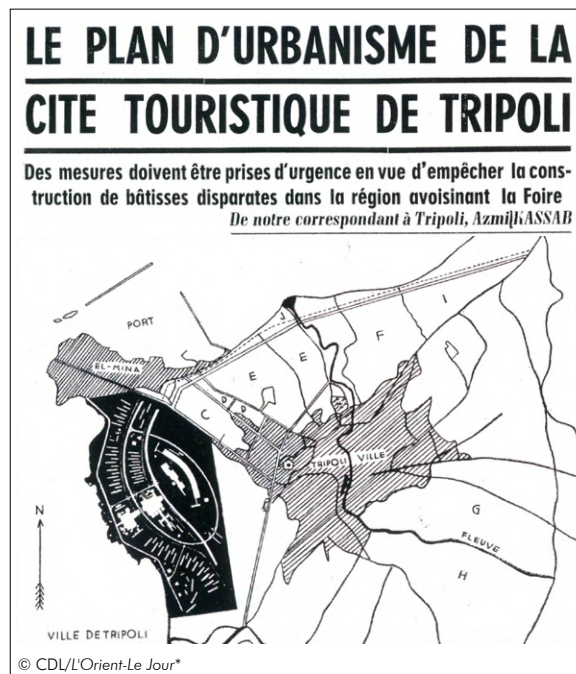
emanate. Subtle sectional changes in the ground plane, for example, underscore and highlight the process of arriving to and accessing the site. It is a strategy that reinforces the monumental effect of the project as it extends the pleasure of arrival, for example, or by offering new viewpoints from where buildings and landscape can be contemplated. A number of projects by Niemeyer feature such a strategy, e.g., the Mondadori Headquarters in Segrate, near Milan, Italy, designed in 1968 as well as the Ministry for External Relations building, or Itamaraty Palace, in Brasília, Brazil, designed in 1962. Other governmental buildings in Brasília were retroactively surrounded by reflective pools such as the Presidential Palace, or Planalto, designed in 1958.

3.4.1 The Niemeyer Landscape

Niemeyer's initial vision for the landscape was oriented towards the sea, his conception of the international Fair as part of a larger urban development that was anchored in the agricultural landscape of orchards, the "western gardens" of Tripoli. He envisioned the development of a seafront city that integrated parks and vast gardens into the urban fabric.



"In the new districts of Tripoli, these dwellings will be built within parks and garden spaces, and be surrounded by schools, nurseries, clubs, cinemas, churches and mosques, etc."¹³⁸



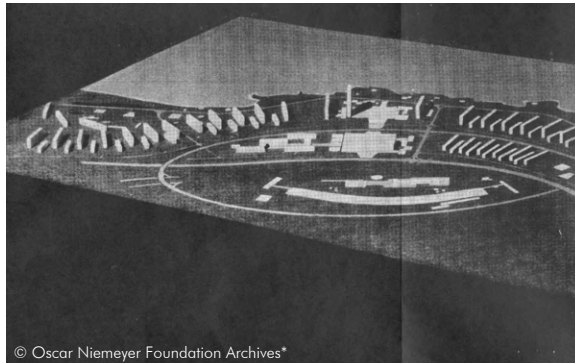
Excerpt from *Le Commerce du Levant* (CDL), Article by Azmi Kassab dated October 27, 1962 concerning the proposed Master Plan of the touristic city in Tripoli.

Source: Courtesy of CDL/L'Orient-Le Jour.

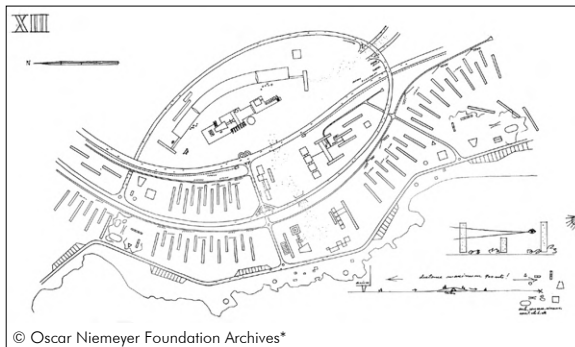
¹³⁸ Azmi Kassab, "M. Oscar Niemeyer nous parle de la Foire de Tripoli," *Le Commerce du Levant* 826 (September 15, 1962): 1 [Translated from French].

Niemeyer's initial vision was not considered, the priority being the international Fair, not a high-quality urban development and its vision to modernize Tripoli. Niemeyer's farsightedness predicated the threat of denigrating "collective housing to mere real estate commercial interests, [that] deprives it from all comfort, green surface, and any complementary facilities that are essential to it,"¹³⁹ which is in fact the process that came to transform the urban peripheries of RKIF.

Sensitive to the context, aware of the value of opening up the project visually, spatially and climatically to the Mediterranean, Niemeyer oriented the curvature of the Grand Canopy toward the sea – the orientation reversed as it stands today open to the medieval city. The viewshed from the main boomerang-shaped or "Grand Cover" exhibition building, with its main axis perpendicular to the coastline and its curvature orientation embracing the sea, shows



© Oscar Niemeyer Foundation Archives*

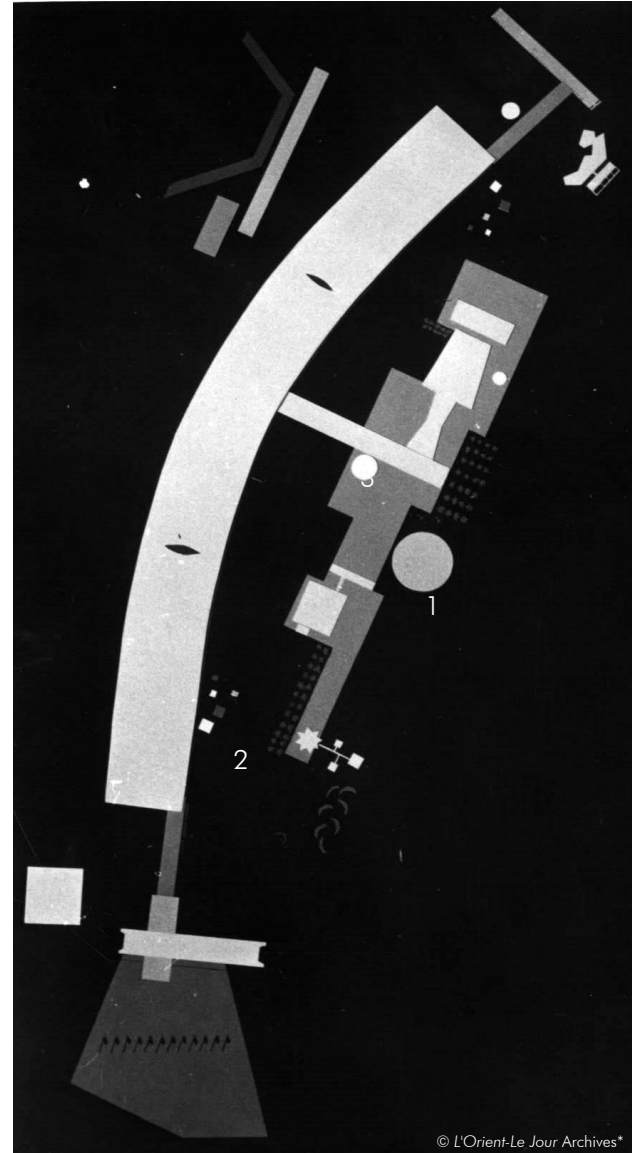


© Oscar Niemeyer Foundation Archives*

1962 original model (above) and the master plan (below) by Oscar Niemeyer, showing the curvature of the Grand Cover oriented towards the sea.

no obstruction of any dwelling or tree. It was very important for him to protect the whole site from any surrounding construction, in order to ensure the availability of space, air and sunlight all around it.

As envisioned by Niemeyer, the project's landscape was an open space, a void uninterrupted by trees, in dialogue with the



© L'Orient-Le Jour Archives*

Niemeyer's model of RKIF showing the project landscape composition and the location of the three proposed palm groves.

Source: Courtesy of L'Orient-Le Jour.

¹³⁹ *Ibid.*

sculptural buildings. Niemeyer's conception emphasized the complementarity between solid mass, the buildings, and void, the surrounding spaces, as a key to the appreciation of both. The two are inseparable.

Three broad underlying design principles can be distinguished in the Niemeyer-designed RKIF landscape: integration and asymmetry; Modernist sculptural forms; and harmony between mass and void.

3.4.1.1 Integration/Asymmetry Rather than Gridded/Regularity

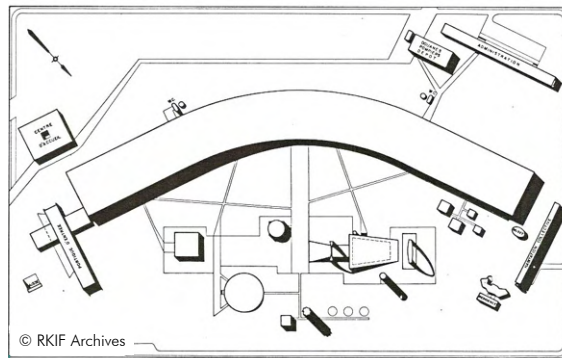
Niemeyer's original concept of the landscape plan shows an intention to break the linearity and symmetry inherited by the Humanist principles of his modern era, in which large-scale projects used to follow the cross shape such as Chandigarh designed by Le Corbusier and Brasilia designed by Lucio Costa. Although the overall master plan of Niemeyer's Fairground clearly recognizes the Humanist cross shape through the significant presence of the wide central transversal path perpendicular to the curvilinear main exhibition space (Grand Cover), it also shows attempts to break the linearity of the overall design.

This asymmetry in the landscape is manifested in the oblique secondary walkways that branched off from the main curvilinear pathway and naturally converged at the entrance of certain buildings such as the Lebanon Pavilion, the Open-Air Theatre, and the Experimental Theatre, thus creating an engaging architectural promenade in the spirit of a gradual discovery. Also, Niemeyer had an intention to make the landscape an integral part of his concept, which was manifested in the asymmetrical arrangement of the three gridded layouts of palm groves.

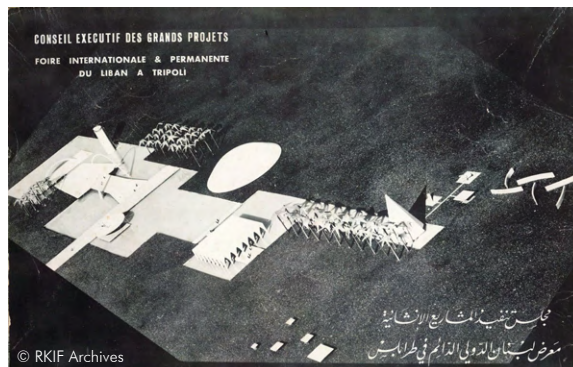
3.4.1.2 Modern/Sculptural Rather than Classical/Uniformist

Niemeyer's original approach to the landscape is Modernist par excellence as he separates assortments of trees the same way he separates buildings in order to present them as objects in space. This sculptural characteristic is very clear in his original model where palm trees are conceived in architectural terms, a grid of palms that form a solid block.

Niemeyer's approach to landscape, as such, was far removed from the landscape of municipal parks in Lebanon where trees and shrubs are planted in rows along the peripheries of lawn areas. Also, Niemeyer strategically designed a series of reflective pools to mirror the sculptural forms that he created and enhance the iconicity of the solids whether buildings or palm trees.



Master plan by ACE showing the oblique secondary walkways, 1964.



Original model by Oscar Niemeyer showing the gridded layouts of palm groves, as published on the cover of the CEGP brochure, 1963.

3.4.1.3 Unity/Harmony over Confusion/Disharmony

Niemeyer's original approach to the landscape is unity and harmony contrary to "what we see, reminiscent of all the fairs of the past to the present day, a cluster of buildings that have nothing to do with each other, often present architectural value or high constructive technique, but which together are simple elements of confusion and disharmony."¹⁴⁰ In landscape terms, Niemeyer intended to emphasize this unity through non-orthogonal walkways and flat reflective pools that highlighted horizontal continuity by reflecting the iconic architecture. Also, he was keen on reducing any visual obstruction of the southern and northern approaches to the Recreational and Cultural Sector by balancing blocks of gridded palm groves to offset the buildings on both sides of the main axis.

3.4.2 Importance of RKIF's Landscape

The Rachid Karami International Fairground is one of the few examples of Modernist landscape architecture of this scale in the Arab Middle East. Niemeyer was a pioneer of the Modern Movement; his conception of landscape is inseparable from the iconic architecture he created. The latter is evident in the RKIF master plan, with the subtle interplay of solid mass, the buildings and gridded block of palms, and void, unobstructed expanses of lawn. The movement network, curvilinear and oblique walkways, contribute to the delicate balance of solid mass and void, connecting the buildings and orchestrating the experience of visitors.



RKIF's post-War landscape looking south towards the Main Entrance Portico, showing the secondary paved pathway.

© UNESCO/Hana Itani, 2023

¹⁴⁰ Niemeyer, "Feira Internacional e Permanente do Líbano em Trípoli," 4.

3.5 As a Green Open Landscape

3.5.1 Post-Niemeyer Planted Landscape

Planted in 1996, Niemeyer's voided landscape was filled with trees and shrubs. Today, RKIF's densely planted landscape that embraces Niemeyer's iconic modern architectural heritage has gained a new significance to Tripolitans as a planted landscape and the largest publicly accessible open space in the city.¹⁴¹

Apart from the date palms at the western limits of RKIF and the naturally occurring low vegetation, RKIF's site was devoid of woody plants, trees, and shrubs during and after construction. In 1996, BECA, a Tripoli-based consultancy, was commissioned with a planting layout for RKIF.

Execution of the planting plan was carried out by Daisy Contracting in 1997, and it included planting of trees and shrubs, mainly in the Recreational and Cultural Sector, the Rest Sector, and the Eastern Car Park. In 2009, two new gardens were added inside the Northeastern and Southeastern boundary of RKIF. Later in 2012, the Southern Car Park, initially implemented in 1974, was planted.

A landscape vegetation survey carried out by UNESCO's Beirut Office in March 2023 confirms the presence of 1,847 woody plants, trees and shrubs, and over 90 different plant species.¹⁴² The planted landscape of today constitutes an additional layer to RKIF's significance that is appreciated by Tripolitans.



RKIF's post-War planted landscape, showing a deliberate alignment of trees encircling the periphery of the lawn, juxtaposed with sporadically scattered species nestled within the green expanse.

¹⁴¹ See Appendix 1 on the results of UNESCO Beirut's Public Survey, 2021.

¹⁴² See Appendix 6 for UNESCO's Landscape Vegetation Survey, Mapping and Analysis 2023.



RKIF's planted landscape changes from 1970-2013 (from left to right):

- a) 1970: After site clearance for construction few palm trees remained in the western part
- b) 1997: Planting the Cultural and Recreational Sector, the Rest Sector and the Eastern Car Park
- c) 2000: Planting of the Quality Inn Garden
- d) 2009: Planting the Northeastern and Southeastern Gardens
- e) 2013: Planting the Southern Car Park

Source: (a) Aerial photo, Lebanese Army Forces - Directorate of Geographic Affairs*; (b-e) Adapted from Google Earth.

Activities taking place at the Main Entrance Plaza/Car Park.



Activities at RKIF's Eastern Car Park.



RKIF's Southern Car Park with street vendors catering for refugees visiting the UNHCR.



3.5.2 Multiple Use of RKIF's Car Parks

As a sizable congregation space, Niemeyer's Main Entrance Plaza/Car Park constitutes the main entrance to the Fairground and it serves as a parking space. The Main Entrance Plaza, intended by Niemeyer as an urban congregation space, has evolved today to fulfill his concept. It is a favored community gathering for Tripolitans for special events, and festivals. Nevertheless, public use of this space is preplanned and must be approved by the RKIF Administration.

3.5.2.1 Eastern Car Park

The Eastern Car Park is similarly popular with Tripolitans as a freely open public space. Trees planted in 1997 have matured to form an impressive green canopy that has transformed it into a green area. To compensate for RKIF Administration's decision for a restricted-access policy into the Fairgrounds, free unrestricted access was offered to Tripolitans into this Car Park, which became one of the main leisure and picnic areas in the city, regularly used by families especially during weekends. Socio-spatial practices associated with this Car Park landscape have contributed positively to the perception and valuation of RKIF by the Tripolitan community. At the same time, this vegetated parking constitutes visually a green buffer zone to the Recreational and Cultural Sector, which is at the heart of Niemeyer's conception.

3.5.2.2 Southern Car Park

The Southern Car Park serves as an assembly space for refugees seeking the offices of the UNHCR located across the street from this parking area. The parking is also used by street vendors catering to these refugees. A portion of this parking is used as a Go-Karting arena.

3.5.3 Importance of RKIF's Landscape Today

Although the general layout of RKIF remains unchanged, vegetation planned and planted in 1996-1997 has come to fill the void, which undermines the essence of Niemeyer's conception of landscape as the interplay of void and mass. Just as critical to Niemeyer's conception is the diverse choice of plant species and the conventional practice of planting of trees and hedges to define the lawns. As a result, the voids are broken up into compartments that obstruct the flow of space and block viewsheds.

The mature planting and well-maintained gardens that exist today, however, are important in their own right yet more so in the context of Tripoli, a city lacking open and green public landscapes. To the ordinary Tripolitan, those that are not aware of Niemeyer's initial conception, the dense vegetation is an inseparable part of the image of RKIF. And, with limited public access to the Fairground, socio-spatial practices

associated with the vegetated Eastern Car Park and the Main Entrance Plaza/Car Park, have become an important facet of life in Tripoli.

Unlike buildings, landscapes are in flux, continually changing, partly through intention but mostly because as a biophysical presence, i.e., landscapes evolve. Today, the planted landscape of RKIF is a palimpsest or accumulated layers established to embody cultural conceptions and political aspirations over time.

Historically, the landscape of the RKIF project site was a productive one, consisting of orchards and cultivated fields, for which Tripoli was famed. This was a living heritage, whose collective memory is still valued by the people of Tripoli, dubbed *Al-Fayhaa*, denoting the scent of orange blossoms emanating from the citrus groves filling up the coastal plain.

It is the cultivated coastal landscape that was selected as the site of the international Fair once the decision was made to locate it in Tripoli. The cultivated landscape was decanted of orchards and fields to accommodate Niemeyer's conception, a landscape that was devoid of trees, where open space is in dialogue with the built forms. Modifications to the landscape, from the 'full' agricultural landscape that was economically profitable and socially engaging



RKIF's built and planted landscape, showing hedges along the reflecting pool of the Lebanon Pavilion and the scattered trees within green lawns.

Shrubs and trees obstruct the visual relationship between the Lebanon Pavilion and Grand Cover in the background.



to the one that was generally treeless, presented a significant change to Tripolitans. The change was accepted, however, as part and parcel of the prominence gained by Tripoli for being selected and the promise of economic gain from the international Fair.

Today, the distinctive architecture conceived by Niemeyer and the overall configuration of the landscape with its walkways and reflective pools are for the most part unaltered. However, the open, treeless landscape conceived by Niemeyer has changed considerably. Alterations to the landscape are difficult to reverse, particularly given its perceived value by Tripolitans. RKIF was planted in 1996, with the empty spaces so important to Niemeyer's vision filled with large tree canopies, palms, orthogonal tree rows, small and large shrubs.

The planted landscape has come to acquire a new significance for Tripolitans, an integral part of socio-spatial practices, everyday recreation, promenading, dog walking as well as the only public space of scale for large festive gatherings such as *Eid* and *Eid* prayers. In addition, there is the growing need for public spaces and gardens in Tripoli whose population has increased many

times and building fabric densified. Because RKIF was not accessible to the people of Tripoli during the Lebanese Civil War and in the decades that followed, the average Tripolitan was not exposed to and did not experience the Modernist vision and open landscape conception of Niemeyer, which continues to be appreciated and valued predominantly by architects and researchers.

Moreover, the underlying cultural conception of garden and landscape in the Middle East is dominated by a preference for fruit trees, a garden space that is 'full', packed with trees.¹⁴³ This perhaps explains the decision to plant RKIF's landscape.

In summary, the landscape of RKIF is not only a modern architectural heritage but has, in addition, gained new significance as a 'beautiful' planted landscape and large, somewhat publicly accessible open space. To the inhabitants of Tripoli, the planted landscape is an incarnation of the cultivated landscape that was lost to the project. It is necessary to recognize the duality of the RKIF landscape heritage as embracing Niemeyer's Modernist architecture but also the significance of the site to Tripolitans as a green and open space at the city scale.

¹⁴³ Jala Makhzoumi, "Interrogating the Hakura Tradition: Lebanese Garden as Product and Production," *International Association for the Study of Traditional Dwellings and Settlements*, Working Paper Series, vol. 200, (2009): 50-60; Jala Makhzoumi, "Unfolding Landscape in a Lebanese Village: Rural Heritage in a Globalizing World," *International Journal of Heritage Studies* vol. 15, no. 4, (Taylor and Francis: Oxford, 2009): 317-337; Jala Makhzoumi, "Borrowed or Rooted? The Discourse of 'Landscape' in the Arab Middle East," D. Bruns, O. Kuhne, A. Schonwald and S. Theile (eds.) *Landscape Culture-Culturing Landscapes: The Differentiated Construction of Landscapes* (Wiesbaden: Springer Verlag, 2015), 111-126.

3.6 As a Socio-Economic and Cultural Space

Recognizing that the social value of RKIF is derived from its significance to the Tripolitans, a public survey, performed by UNESCO in 2021, collected over 48% of responses from the residents of Tripoli.¹⁴⁴ The aim was to ensure that the CMP took into account the diverse perspectives, values, and interests of the local as well as national population. The assessment of RKIF's social value necessitates the understanding of the past and current aspirations and values of the local population so that they are integrated in the future conservation and management of the Fair.

3.6.1 The Fair as an Economic Opportunity

The Fair acquired its local importance even before its construction. The announcement of the construction of an international fair in Lebanon in 1957, mobilized Tripolitans to demand the consideration of Tripoli for its future location. This reaction was a result of the increased sense of marginalization felt at the time, due to the political and economic centrality of the capital Beirut. In fact, the political circumstances, which resulted in the independence of Lebanon and the inclusion of Tripoli and the North in Greater Lebanon by the Mandatory Authority, were seen locally as a deliberate detachment of the City from its Arab hinterland and of its economic territory. This detachment reduced the economic influence of the city in its region and caused a political break in regard to the Ottoman period.¹⁴⁵

From this announcement, the local press and the city's economic organizations lobbied for the construction of the Fair in Tripoli. Some personalities, such as Azmi Kassab, even took the initiative to visit international fairs in the

Middle East and returned with the conviction that the city of Tripoli presented the best conditions to host the Fair project.¹⁴⁶ The announcement of the construction of the Fair in Tripoli in November 1959 gave new hope to Tripolitans. A new mobilization of the local public opinion then occurred in favor of the realization of this vital project expected to bring the city out of its economic slump, especially through job creation and tourism attraction.

In this regard, Abdallah Al-Bissar wrote in *Al-Hadara* newspaper the following: "...The fear that visitors will come to the exhibition and leave it as a transit without going through Tripoli... The Fair should be a reason for opening up Tripoli to the world."¹⁴⁷

This mobilization marked the beginning of a period that extended until the outbreak of the Civil War in 1975. This period experienced several key stages closely followed by local public opinion, including the promulgation of the first decree authorizing the construction of an international Fair in Tripoli in May 1960, the choice of the location, the launching of the construction site, the debate about the area of the Fair's site, the pressure put on the government to ensure the budget for each phase of construction and for the expropriation of additional land for the project.

Local public opinion was considered responsible for each of these stages and for the culmination of the project toward a satisfactory result for Tripoli and Tripolitans. The Tripolitan's commitment certainly helped to optimize the choices and the construction of the major works constituting the project of the Fair, an effort that, unfortunately, was interrupted with the start of the Civil War.

¹⁴⁴ See the distribution map of residents who responded to the survey in Appendix 1, UNESCO Beirut's Public Survey 2021.

¹⁴⁵ Mousbah Rajab, *Le Vieux-Tripoli un espace économique en voie de mutation. Problématique et perspectives d'avenir*, PhD thesis (Paris: Paris 1 – La Sorbonne, 1993), 59, 61.

¹⁴⁶ Azmi Kassab, "طرابلس أنسب مكان للمعرض الدولي، وفيها تتوفر جميع أسباب نجاحه وازدهاره" [Tripoli is the most suitable place for the international fair, where all the reasons for its success and prosperity are available] *Al-Hadara* (October 8, 1959).

¹⁴⁷ Abdallah Al-Bissar, "المعرض لن يحيي من لا يريدون الحياة" [The Fair will not revive those who do not want to live] *Al-Hadara*, (November 4, 1962): 4.

After the end of the Civil War in 1990, the debate restarted around the operation of the Fair. The partial rehabilitation work of the Grand Cover and, subsequently, the organization of two major exhibitions in October 1998 and October 2001,¹⁴⁸ gave hope to the Board of the Fair and the City.¹⁴⁹ This hope did not last. The proliferation of international exhibitions in the capital, despite the exclusivity decision given to the Tripoli Fair through the Decree no. 86/95,¹⁵⁰ and which only hosted modest local exhibitions, revived the debate in the local press, expressing the anger of local public opinion who believed in a conspiracy against their city. In fact, the decree concerning the exclusivity was frozen by the Council of State (مجلس شورى الدولة) in 2005, due to the complaint submitted by the conglomerate of exhibitions' organizers.¹⁵¹ The slogan of the six "M"s was then launched in Tripoli, expressing the paralysis (or marginalization) of major local and regional public facilities, all beginning with the letter "M" in Arabic: the Port, the Oil Refinery, the Airport, the Train Station, the Fair, and the Olympic Stadium.

Moreover, the plots surrounding the Fair to the east were considered to have the most expensive land price per square meter.¹⁵² In fact, the

residential area located on the eastern side of the Fair still remains the most luxurious in Tripoli. This fact has added to the resentment of original landowners who not only lost their property without proper compensation, but also lost any hope for better opportunities for their younger generation.

The announcement in 2004 of the Touristic City Project (Chapter 2, section 2.2.4.7) to be developed in the Fair renewed the hope of the Tripolitans with the promises that this project would revitalize the local economy, create jobs for thousands of people, stop the youth migration and attract two million tourists.¹⁵³ A few months later, the project was canceled because of a financial conflict between the Administrative Board and CIDG (Cedarland International Development Group), the consultant party. Again, a Chinese Fair Project was announced in Tripoli in May 2006 and was welcomed by local public opinion and a firm statement by civil society emphasized confronting any attempt to abort the project.¹⁵⁴ This project was very controversial, both at local and national levels. Discussions revolved around the extent to which the city would benefit from the job opportunities that the project would provide, after fears that the labor force would be of Chinese nationality.¹⁵⁵ The war launched by Israel

¹⁴⁸ The International Trading Fair of the Islamic Chambers of Commerce and the Arabic and African Fair.

¹⁴⁹ Anonymous, "مقوماً أعمال المعرض العربي-الأفريقي الخامس في طرابلس. المهندس شعراي: استقبلنا 150 ألف زائر وتم فض عروض المزايدة" [Evaluating the works of the Fifth Arab-African Exhibition in Tripoli. Engineer Shaarani: We received 150,000 visitors, and the DBOT bids were closed], *Al-Tamaddon* (October 24, 2001): 7.

¹⁵⁰ Lebanese University, "حصر إقامة المعارض الدولية بمعرض رشيد كرامي الدولي في طرابلس" [Exclusivity of international exhibitions to the Rachid Karami International Fair in Tripoli], Legal Informatics Center, 1995, <http://77.42.251.205/LawView.aspx?opt=view&LawID=198462> (accessed May 12, 2023).

¹⁵¹ Anonymous, "معرض الرئيس الشهيد رشيد كرامي الدولي في طرابلس. من يعرقل انطلاقته. هذه هي قصة مدينة «ديزني لاند» للمعارض والسياحة والترفيه والتجارة." [Rachid Karami's International Fair in Tripoli. Who Obstructs its Launch. This is the story of 'Disneyland' for exhibitions, tourism, entertainment and commerce. Is it permissible for this project to fail also after freezing the decision of exclusivity of international exhibitions?], *Liwaa Al-Fayhaa wal Chamal* (August 25, 2005): 3.

¹⁵² In 2000, according to Harmandayan's master plan study, the price per square meter around the Fair varied between 1,000 and 1,500 US dollars. In September 2019, an architect and a real-estate expert, Kamal Hajar, estimated the price per square meter in this district at 3,000 US dollars, the second highest in the city.

¹⁵³ Anonymous, "مدينة سياحية داخل حرم معرض طرابلس الدولي. مشروع ثوري ينتشل الفيحاء من ركودها" [Tourist City inside the Tripoli International Fair campus. A revolutionary project that lifts Al-Fayhaa out of its stagnation], *An-Nahar Al-Manateq* (August 14, 2004): 2.

¹⁵⁴ Anonymous, "المعرض الدائم للمنتجات الصينية: 3 آلاف فرصة عمل" [The Permanent Exhibition of Chinese Products: 3 thousand job opportunities], *Al-Tamaddon* (June 5, 2006): 4.

¹⁵⁵ Anonymous, "المعرض الدائم للمنتجات الصينية في طرابلس يلقى دعماً وترحيباً من هيئات المجتمع المدني. نقاش هادئ وموضوعي حول الضوابط والشروط التي تضمن المشروع وتجعله في خدمة الشعب ولبنان. نحتاج الى روح عالية من المسؤولية لتفادي السلبيات وعدم دفن عناصر أساسية وسط الضجيج الإعلامي" [The permanent exhibition of Chinese products in Tripoli is supported and welcomed by civil society organizations. A calm and objective discussion about the controls and conditions that fortify the project and make it serve the people and Lebanon. We need a high spirit of responsibility to avoid negativity and not to bury essential elements amidst the media hype], *Al-Adib* (June 15, 2006): 4.

against Lebanon in July 2006, probably prompted the sponsors of the project to cancel it. With the recent inscription of RKIF on the World Heritage List, the economic interest and value of the site has been revived.

3.6.2 Significance of the Fair for Tripolitan Stakeholders

The results of UNESCO Beirut's Public Survey (2021) and one-on-one interviews with local stakeholders¹⁵⁶ confirm that RKIF is still mostly valued by Tripolitans for its economic opportunity. Unlike the overall result of the survey which indicated that RKIF is mostly valued for its architectural significance on the national level, the rating of values by 299 residents of Tripoli (out of 680 total responses) shows that RKIF is valued, primarily for its economic potential (119), secondly for its architectural significance (109), and then as an open and green urban landscape (87). Moreover, several stakeholders considered the Fair's social value from an economic perspective; the Fair had the task and the duty of creating jobs for the inhabitants in a city where the poverty rate is among the highest at the national level. The other aspect of this social value, for other stakeholders, is that the Fair offers residents a breath of fresh air and should be transformed into an accessible public

space. In addition, the majority of interviewed stakeholders stressed the significance of the Fair's future development potential, noting that the site should have a role more suited to the local and national context through various activities and uses while keeping the function for which the Fair was designed, and giving the right to public access after being developed into a well-managed and controlled urban park. The goal, from their perspective, should be introducing new life to the site, and bringing back the Fair to the city.

3.6.3 Urban Role and Social Practices

As mentioned earlier, the Fair is considered one of the major amenities of Tripoli and the North Region. Interviews with different stakeholders and interest groups, as well as the public survey, showed that many of them also consider the Fair part of the local cultural heritage due to its architectural value as a work by a famous architect. Research, studies, and activities conducted after the War have shed light on the cultural and architectural values of the Fair, which contributed to raising awareness among the local population and stimulated many associations, tourist guides, and schools of architecture. The Fair is open to residents that have a personal membership issued by the RKIF Administration



The Main Entrance Plaza transformed into a playground during Eid Al Fitr Festivities.

¹⁵⁶ Refer to Appendices 1 and 2 on the results of UNESCO Beirut's Public Survey and the Interviews with Main Stakeholders and Interest Groups.



Visitors at RKIF's Experimental Theatre during an art exhibition entitled "Cycles of Collapsing Progress".

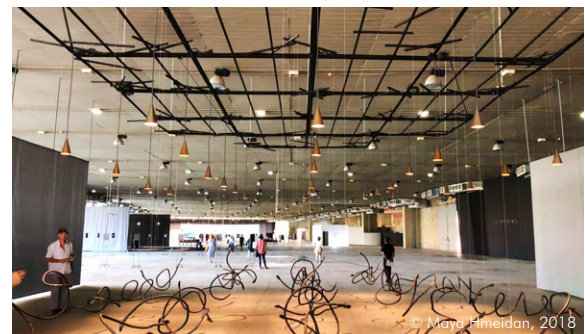
© Maya Hmeidan, 2018

wishing to practice their morning exercise or afternoon promenades. Also, visitors and groups are welcomed with prior permission.¹⁵⁷ Regardless, the site is also accessible during exhibitions, activities, events, concerts and festivities. Even if visitors, usually children and young people, are not interested in attending an exhibition itself, they use the opportunity to come in, walk, play, and watch the crowd. Such occasions attract street vendors. Finally, the convention center and exhibition hall, situated under the Grand Cover, are often used to host socio-political events, *i.e.* receive condolences when the deceased is a local and/or a national leader. This happened at least for Rafic Hariri and Omar Karami, two important political figures.

3.6.4 Conclusion

At the local level, the value of the Fair is mainly economic. For the population of Tripoli (and that of the North in general), the Fair is part of a series of major local facilities whose revitalization will at least restore their city to its economic importance, which was taken away from it after the creation of Greater Lebanon. The image of the Fair, in particular, is that of a potential savior of a marginalized city.

Although a large number of Tripolitans is convinced of the cultural value derived from RKIF's architectural importance as a work by Niemeyer, others consider this cultural image a threat that will paralyze the role of the Fair for which it was created and will prevent any major development necessary for its proper functioning. The recent inclusion of the Fair on the UNESCO World Heritage List should be seen as an opportunity to reconcile these latter fears with its cultural significance.



"Cycles of Collapsing Progress" art exhibition inside the Grand Cover's Exhibition Hall in 2018.

© Maya Hmeidan, 2018



During a performance at the Open-Air Theatre in 2015.

© Rashid Najib, 2015

¹⁵⁷ The reason behind this restricted access policy is due to the incapacity to oversee the safety and security of the place and its visitors given the lack of resources.

3.7 RKIF's Fabric: Significance, Condition, and Threats

Most of RKIF's structures retain Niemeyer's original design, as known from the project album that he developed for the site, the architectural plans developed by his office, and those further developed by his collaborating Lebanese engineers. These are important artifacts of the concrete industry in Lebanon at the time. However, the state of conservation of the concrete structures is poor and this is the main threat to the property (and hence, one of the reasons it was inscribed on the List of World Heritage in Danger).

RKIF's structures are in desperate need of individual in-depth and extensive assessments to understand their conditions and deterioration mechanisms, which is outside of the scope of this Conservation Management Plan (CMP). However, limited studies were performed by the CMP team, which included experts in historic concrete conservation. The aim was to understand the concrete fabric, its significance and condition.

Drawings were reviewed, along with documents, such as specifications and letters, as well as archival photographs taken during construction. Because of the enormous scale of the site, for the CMP, a general visual assessment was performed on most buildings in 2019.¹⁵⁸ Additionally, a more targeted investigation, 3D documentation, and sampling took place in 2022 at the Arch and the collapsed area of the Open-Air Theatre.¹⁵⁹ The focus was on the concrete, being the main structural material, even though other materials were used at the site as finishes. A general discussion of the assessment findings follows below, as more information about the significance, condition and threats of each structure is described in Chapter 4.



During UNESCO's investigation and sampling of the Monumental Arch.



Concrete coring at the Arch.



Concrete coring at the collapsed ceiling of the OAT.

¹⁵⁸ Paul Gaudette, *Oscar Niemeyer's International Fairgrounds*, unpublished condition assessment report submitted to UNESCO Beirut Office (April 20, 2020).

¹⁵⁹ Paul Gaudette and Peter Tarara (WJE), *Open-Air Theatre: Assessment for the Arch and Collapsed Soffit*, study submitted to UNESCO Beirut Office (May 22, 2023). Refer to Appendix 7 for the study report.

3.7.1 Concrete Significance

The results of eight cores removed from the Arch and Open-Air Theatre indicate that the concrete used to build these structures was conventionally reinforced concrete. This analysis confirmed the oral history, which stated that concrete was locally sourced (cement from Chekka, crushed limestone aggregate from nearby mountains).¹⁶⁰ Based on historic photographs, the concrete was batched on site and poured in place.

The concrete is normal weight: for the Arch, the strength is specified as 4,000 psi at the footings and 3,000 psi above. The compressive strength for the Open-Air Theatre was specified to be 4,000 psi. The sulfate content is normal. However, chloride levels exceeded normal limits in three of the eight cores, and the pH in the two samples tested was low at 11.5 and 9.2 respectively (the normal pH of concrete is 12-13). The depth of carbonation was found to vary from ½" (1.27 cm) to 1" (2.54 cm). Microscopic and petrographic observations of two concrete cores confirm these results. It should be noted that the combination of carbonation (lowered pH) with high chloride content acts to accelerate rebar corrosion more so than if one or the other had only been present.¹⁶¹



Samples of two concrete cores extracted from the OAT and the Arch.



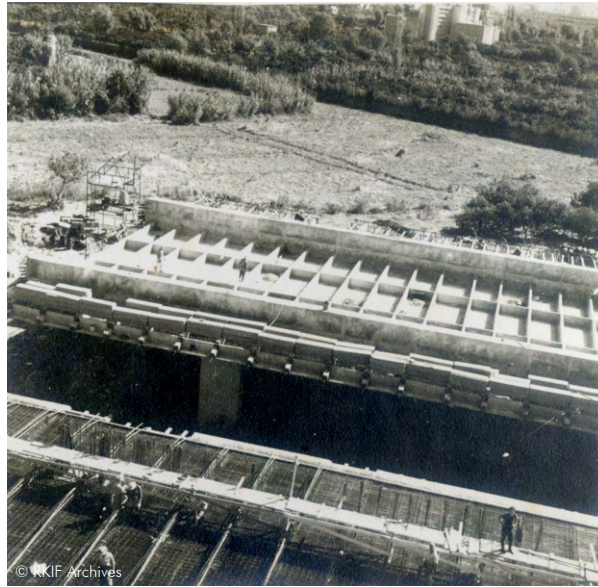
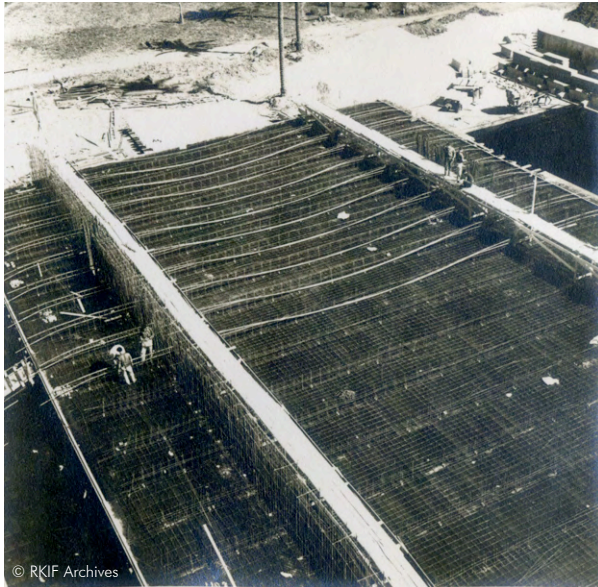
Onsite concrete batching, 1956-1966.
Source: Ferdinand Dagher Collection,
Courtesy of Fadlallah Dagher.



Engineer Noël Abou Hamad during an interview undertaken by Maya Hmeidan on August 9, 2019.

¹⁶⁰ Noël Abou Hamad (Grand Cover Consultant), interview with Maya Hmeidan, Beirut, August 9, 2019.

¹⁶¹ Wiss, Janey, Elstner Associates, *RKIF-Tripoli, Lebanon: Petrographic Analysis of Two Concrete Cores*, in Paul Gaudette and Peter Tarara (WJE), *Open-Air Theatre: Assessment for the Arch and Collapsed Soffit*. Refer to Appendix 7 for the petrographic analysis report.



Left The Grand Cover roof structure during construction with the post-tensioning cables being installed at structural beams over the soffit slab reinforcing (July 1965).

Right Concrete cast in Grand Cover soffit slab and structural beams with post-tensioning.

Source: Ferdinand Dagher Collection. Courtesy of Fadlallah Dagher.

In terms of significance, the concrete material used in the Open-Air Theatre and the Arch is conventional. The Arch is unusual as a concrete structure and the thin shell dome of the Experimental Theatre was uncommon at that time in the region, but so was the pyramidal shape of the Manège, the helipad of the Space Museum, the parabolic shape of the firetruck shed, and even the exoskeleton with recessed glazed box of the Lebanon Pavilion, which inspired at least one other known structure in Lebanon, *La Maison de L'artisanat*.¹⁶² However, the structural design of the Grand Cover is an early example of post-tensioned concrete in Lebanon and the Middle East in general. According to engineer Noël Abou Hamad, a pioneer of the post-tensioned technique in Lebanon and the region, the earliest example of post-tensioned concrete in Lebanon was the Electricity and Power Station in Zouk dating to 1959; this was followed by the Cover of the Barada River in Damascus-Syria in 1962, then the study of RKIF's Grand Cover in 1963 (implemented between 1964-1966).¹⁶³



The site during construction in 1966-1967, showing the Grand Cover's roof.

Source: Ferdinand Dagher Collection. Courtesy of Fadlallah Dagher.

¹⁶² George Arbid, *Practicing Modernism in Beirut: Architecture in Lebanon 1947-1970*, PhD thesis dissertation, (Cambridge: Harvard University, 2002), 154.

¹⁶³ Hmeidan, *Op.cit.*

3.7.2 Typical Observed Conditions

The structures exhibit the deterioration mechanisms typical of aging reinforced concrete (spalling of concrete due to corroding reinforcing bars and carbonation of concrete making it less alkaline), but construction techniques for anchoring the board-formed soffits of many of the structures have rendered them vulnerable to catastrophic collapse. This has occurred extensively under the Open-Air Theatre at the ceiling of the Bowling Alley/Boxing Ring and under the ramp of the Entrance Portico. To a more limited degree, a portion of the fascia of the Grand Cover has collapsed along with a part of the roof/soffit structure.



The condition of the central column of the Water Tower holding the rooftop in December 2023. Severe corrosion of the steel rebars has caused delamination of the concrete (spalling) compromising the structural integrity of the column.

© Wassim Naghi, 2023

There is also severe deterioration of the central column of the Water Tower at the restaurant and roof levels. As a result, many areas of the complex may require restricted access, immediate action, stabilization, and/or shoring,¹⁶⁴ in addition to detailed conservation plans.

For the construction of RKIF, the challenges were the location and the complexity of the architecture. Although the material used was normal concrete, from the beam areas exposed by the soffit collapse below the Open-Air Theatre, the concrete is both marginally mixed and poorly consolidated. This is evidenced by the prevalence of voids and honeycombed areas (lack of cementitious paste) resulting in exposed aggregate towards the bottom of the beams.



© UNESCO/Ieva Saudargaitė, 2023



© UNESCO/Maya Hmeidan, 2019

Above The catastrophic collapse of the board-formed soffit below the Open-Air Theatre. The soffit was not mechanically tied into the beams, but rather was held in place by friction.

Below Status of the false ceiling at the Model Residence. The metal forms were left in place and covered with the soffit. However, the soffit was not mechanically attached to the thin fins of concrete between the metal formwork, causing it to fail.

¹⁶⁴ Refer to Appendix 7 for the study report Open-Air Theatre: Assessment for the Arch and Collapsed Soffit.

3.7.3 Threats and Vulnerabilities

The site was placed on the World Heritage List in Danger, not only because of the fragile condition of the concrete, but also because of the precarious state of Lebanon's economy and the threat of unsympathetic and incompatible development.¹⁶⁵ In terms of the concrete, the structures are exposed to salt-water aerosols due to the site's proximity to the Mediterranean Sea, contributing to the high chloride content as noted above. Combined with carbonation and inherent design defects (for instance, soffits held in place by friction instead of mechanical ties), the concrete is in fragile condition, exacerbated by the lack of resources and maintenance including poor past interventions by contractors untrained in concrete conservation.

Furthermore, the scarcity of funding has constrained the administration of the Fair in terms of adequate staffing, trained personnel, lack of visitor infrastructure and competing urban master plans. Public funding/spending has been minimal. There is no centralized inventory and archives, leading to a general lack of knowledge and awareness of site significance. There is also an absence of vision; also, no provisions have been taken to protect the site from the impact of climate change.



Interior of the Administration Building exposed to the elements. Staining on the underside of the slab is indicative of moisture passing through the concrete. Spalling is also visible at the bottom of the concrete column which is standing in a puddle of water. Water intrusion causes rebar corrosion, which results in concrete spalls.



The Ticket Booth flooded with water after heavy rain due to lack of cyclical maintenance.

¹⁶⁵ ICOMOS, *ICOMOS Report to the World Heritage Committee. Evaluation of nominations to be processed on an emergency basis*, (Paris: ICOMOS January 24, 2023), <https://whc.unesco.org/en/sessions/18EXTCOM/documents/> (accessed April 9, 2023).

3.8 Survival of What Was Built

3.8.1 Impact of Alterations on the Integrity and Authenticity of RKIF

Although the Rachid Karami International Fair has survived remarkably intact as a campus, some of the structures have been modified and this has impacted integrity and authenticity to a greater or lesser degree. The structures that have had the most alterations include the Collective Housing, Grand Cover, Open-Air Theatre, and the Reception Centre under the Entrance Portico (currently, reused as the Administration Building). The paths in the landscape have also been changed as has the landscape itself. More minor alterations have occurred to the Guest House and Bars.

The most radically altered building is the Collective Housing, which was transformed into the no-longer functioning Quality Inn hotel. Here there is a total loss of integrity and authenticity as the façades have been completely redesigned and the only evidence remaining of Niemeyer's original building is the concrete exoskeleton that frames the corners and top of the former structure. Not only are the elevations completely different, but a rooftop addition has changed the volume and the original still-extant external stair has had a floor added. Along the roadside elevation are a series of pavilions that are attached or detached, further marring the original volume.



Above Partial elevation of Quality Inn façade facing the Fairground showing rooftop addition and original exterior stair at the far end with a floor added.

Below Roadside elevation of the Quality Inn hotel (formerly, the Collective Housing) showing rooftop addition and some of the ground-floor pavilions added, along with the central tiled wall.

Above The front elevation of the enclosed portion of the Grand Cover features mostly glazed and some opaque walls. The deep recess of the original columns has been kept although the clean sweep of the concrete soffit has been marred by surface-mounted light fixtures replacing Niemeyer's recessed spots.

Below The back elevation of the Grand Cover as infilled is opaque and punctuated by concrete columns and mid-height beams. The side elevation is similar, however, without the occasional double doors.

The next most altered structure is the Grand Cover. In this case, half of the open volume has been enclosed with a convention center and an exhibition space. These have impacted the authenticity of the Grand Cover as well as its integrity.

A side and back wall have been introduced that are totally opaque, whereas the elevation facing the Fairground is a combination of opaque and glazed walls. On this elevation, the deep recess of the original columns has been maintained, but the clean sweep of the soffit has been interrupted by surface-mounted light fixtures replacing Niemeyer's discrete recessed spots. The opaque back walls are punctuated by a series of columns and mid-height beams, further negating the original design of long spans in between deeply recessed supports that emphasized the open-flowing form of Niemeyer's boomerang-shaped Grand Cover.

At the interior, some smaller rooms and toilets were included in the exhibition space; a mezzanine level, however, was designed but never implemented.

Le Fini de la Grande Couverture:

M. Niemeyer a refusé énergiquement le rayé horizontal des plaques préfabriquées que l'on est en train d'installer pour revêtir les bords de la Grande Couverture. Il tient absolument à les effacer même au prix de boucharder toutes ces plaques.

Excerpt from Nicolas Rizk's "Final Report" to CEGP highlighting Niemeyer's reaction to the finishing of the Grand Cover. Translated from French: "Finishing of the Grand Cover: Mr. Niemeyer has energetically refused prefabricated cladding with horizontal strips being currently put to cover the edges of the Grand Cover. He absolutely insists on removing (deleting) them even if this would cost plastering them completely."

Source: Rizk, "La Foire Internationale du Liban à Tripoli. Rapport Définitif," 9. RKIF Archives.

Another intervention to the Grand Cover was the addition of precast-concrete cladding panels in a reverse L-shape on the lateral side of the cantilevered surfaces. This addition seems to have played the role of concealing some imperfections in the original structure. Broken parts of this added cladding show the red oxide metal primer treatment on the corroded steel and crumbling concrete. It also played the role of protecting the waterproofing membrane base flashing applied in 1994.¹⁶⁶ An attempt to reproduce the original aspect of the cantilever can be noted where the texture of the added part seems to reproduce the exact shape of the original joints.

At the far end of the Grand Cover near the former Collective Housing, a stand of trees has enclosed what should be an open termination. In the case of the Grand Cover, authenticity and integrity can be recovered as the intervention is conceivably reversible.



The clean sweep of the open Grand Cover featuring large spans and deeply recessed columns where it is unenclosed. The precast horizontal board-form finish of the fascia covering the slab edge was not approved by Niemeyer.



At the far end of the Grand Cover, a stand of trees encloses what should be an open end.

¹⁶⁶ Documents provided by Dar Al-Handasah Shair & Partners reveal that this additional layer, placed during construction, was most probably partially repaired during the 1998 intervention.

The seating arrangement of the Open-Air Theatre has been changed. The current fiberglass seats are also not original, nor is the concrete audio-visual booth.



The Open-Air Theatre has been altered as well, impacting authenticity. In addition to a small concrete audio-visual booth, the seating arrangement was changed in order to increase the number of seats thereby altering the central aisle. In fact, the upper row of seats has an impaired view of the stage. The current fiberglass seats are also an addition. The original layout of the seating could potentially be recovered, reversing the impact on this structure.

The Post-Modern renovation of the interior of the former Reception Centre.



The Reception Centre under the Entrance Portico (now functioning as the Administration Building) has been significantly altered at the interior, which was mostly gutted and renovated in the Post-Modern style. There is some integrity left to the staircase and flooring towards the rear of the main floor. However, the entrance and the lower floor have been completely renovated with an associated loss of authenticity. In addition, waterjet nozzles in the reflecting pool totally disturb the original concept of a mirrored reflection of the building from the pool.

The renovated lower floor of the former Reception Centre.



The landscape has been substantially changed from Niemeyer's original intention, which was to view the low-rise structures of the Fairground as sculptural objects placed in a series of reflecting pools and lawns, with three discrete palm groves being the only other vegetation.

The hardscape paths are rectilinear now, unlike the original design, and many are paved in crazy-paving stonework as opposed to concrete pavers. The lawns have had lush vegetation added. Damaging to Niemeyer's conception of balancing void and building mass, the planting follows the lines of the 'orthogonal' walkways implemented post-1990 and that veer away from the diagonal paths designed by Niemeyer.

Crazy-paving stonework is non-original as is the lush vegetation and rectilinear paths.



While the integrity of the hardscapes could conceivably be recovered, the authenticity of the landscape as a series of lawns is no longer extant, the vegetation has matured and created a much-desired oasis for Tripolitans, some of whom refer to it as the Central Park of Tripoli.



The four Bars as seen from the rooftop of the Quality Inn hotel (former Collective Housing). Niemeyer's Fairground structures, which were intended to be viewed as sculptural objects on lawns, have become embedded between mature vegetation, now considered significant as an oasis by the residents of the overdeveloped city of Tripoli.

A good example of adaptive reuse with very little loss of authenticity and integrity is the Guest House, which was recently chosen as one of the winners of the 15th cycle of the Aga Khan Award for Architecture. Known as *Minjara*, the building acted as a design center, showroom and workshop for the Tripoli furniture industry until early 2024, thus keeping with the spirit of the Fairground, which was intended to showcase commercial activities. The transformation of the interior is discrete, modern, and in keeping with Niemeyer's aesthetic. However, recent developments have left the building empty again¹⁶⁷.



The Guest House, winner of a 2022 Aga Khan award, has been adaptively reused as *Minjara*, a design center, showroom and workshop showcasing Tripoli's furniture industry.

The Bars have some minor alterations that slightly impact their authenticity. These can easily be reversed.

The Fairground structures have had their exterior concrete painted a more-or-less uniform pale green. There is some physical evidence as well as archival information that some of the concrete structures were originally whitewashed. The interior of the Lebanon Pavilion has also been painted. Paint is considered a reversible change and the integrity of the original colors can be re-achieved.



Interior of the transformed Guest House.

¹⁶⁷ Lemma Shehadi, "Trade revival: carpentry workshop in Tripoli, Lebanon, by East Architecture Studio and Oscar Niemeyer," *Architectural Review* (April 22, 2024), <https://www.architectural-review.com/buildings/trade-revival-carpentry-workshop-in-tripoli-lebanon-by-east-architecture-studio-and-oscar-niemeyer> (accessed May 31, 2024).



Left Interior of a Bar.
Right Whitewash peeking through the paint on the column of the former Reception Centre under the Entrance Portico.

Finally, it is important to stress that although the Fairground briefly operated as such following partial rehabilitation post-Civil War, most exhibitions that have taken place were of local and/or national importance rather than international. The RKIF structures, except the Experimental Theatre, were completed and furnished prior to the advent of the Lebanese Civil War. During the War, the site was occupied by the Syrian army. The structures during this period were stripped of all glazing and fixtures, and no original furnishings remained. Therefore, the Fairground's authenticity and integrity rely on its intactness as a campus.

3.9 Thematic Framework Comparison

3.9.1 Background

For the purposes of this CMP, a comparative analysis was performed while the site was still on Lebanon's Tentative List so as to better understand the site's significance. The Rachid Karami International Fair was compared to 11 World Heritage sites and 10 Tentative List



sites. The sites were selected for their potential relevance to RKIF in an effort to understand the distribution of comparable sites already on the World Heritage List and those being proposed for listing that are on the Tentative List. In addition, non-World Heritage and non-Tentative Lists sites were selected for comparison. These include nine protected Niemeyer-designed sites in Brazil, three additional Niemeyer-designed sites in the MENA (Middle East and North Africa) region, nine Mid-Century Modernist sites in MENA, and four other permanent fairgrounds also in MENA.

“

The purpose of the comparative analysis is to ascertain, first, whether there is scope in the World Heritage List for the inclusion of the nominated property, and second, to demonstrate that there are no comparable properties in the same geo-cultural area ... with similar values expressed by the property and might be defined at the regional level or worldwide.¹⁶⁸”

¹⁶⁸ Duncan Marshall, ed., *Preparing World Heritage Nominations* (Paris: UNESCO, 2011), 67.

Specifically, for sites of the Modern Movement, which have been identified as a gap on the World Heritage List by ICOMOS,¹⁶⁹ the Getty Conservation Institute (GCI) has considered carefully what separates Modernism from other types of heritage. They conclude that characteristics of the Modern Movement include: “A series of ‘themes,’ ‘phenomena,’ or ‘drivers’ around which the analysis of twentieth-century heritage sites could take place, among them communications, governance, mobility, science and technology, and culture...”¹⁷⁰

- Commerce and industry
- Commerce – World’s Fair sites¹⁷¹
- Increased globalization
- New ways of expressing form and responding to functional demands¹⁷²

3.9.2 Criteria Considered

In order to perform a comparative analysis, criteria had to be identified that are characteristic of RKIF and then compared to sites on the World Heritage and Tentative Lists, and other similar complexes in the MENA region and elsewhere. RKIF consists of around 20 buildings on a purposefully designed campus. These structures are built of concrete and represent the sculptural forms that are typical of Oscar

Niemeyer’s buildings. They are also examples of Mid-Century Modernism as well as Modernism in the Middle Eastern context. Therefore, the nine criteria selected for comparison are as follows:

- Commerce and industry
- Increased globalization
- Functional demands
- Campus typology
- Exposed concrete
- Mid-century Modernism
- Mid-century Middle East
- National identity
- Technology/innovation

3.9.3 Comparative Analysis

3.9.3.1 Similar Sites on the World Heritage or Tentative Lists

The following 11 World Heritage sites were reviewed in depth: *Ciudad Universitaria de Caracas* (Venezuela), The Architectural Work of Le Corbusier (serial cross-boundary nomination of various State Parties), Brasilia (Brazil), Pampulha Modern Ensemble (Brazil), Royal Exhibition Building and Carlton Gardens (Australia), Le Havre, the City Rebuilt by Auguste Perret (France), Fagus Factory in Alfeld



Ciudad Universitaria de Caracas, Venezuela built to the design of the architect Carlos Raúl Villanueva between 1940 and 1960. The university campus integrates the large number of buildings and functions into a clearly articulated ensemble.

Source: Jorge Andrés Paparoni Bruzual, *Universidad Central de Venezuela-Ingeniería* (2008), <https://www.flickr.com/photos/venex/3039109542/> (accessed March 10, 2024).

¹⁶⁹ Jukka Jokilehto, ed., *The World Heritage List. Filling the Gaps – an Action Plan for the Future* (Paris: ICOMOS, 2005).

¹⁷⁰ Susan Macdonald and Gail Ostergren, *Developing an Historic Thematic Framework to Assess the Significance of Twentieth-Century Cultural Heritage: An Initiative of the ICOMOS International Scientific Committee on Twentieth-Century Heritage*, (Los Angeles: Getty Conservation Institute, 2011), 4.

¹⁷¹ *Ibid.*, 13

¹⁷² The last two are from the Canadian model. *Ibid.*, 4-5.

(Germany), Van Nelle Fabriek (Netherlands), Centennial Hall in Wrocław (Poland), Central University City Campus of the *Universidad Autónoma de México* (UNAM) (Mexico), and Berlin Modernism Housing Estates (Germany). When compared to these 11 World Heritage sites, the ones that met seven of the nine comparison criteria are described below.

The Architectural Work of Le Corbusier was found to have similarities in terms of increased globalization, functional demands, campus typology, exposed concrete, Mid-Century Modernism, national identity, and technology/innovation. Brasília, of which Oscar Niemeyer designed many of the structures, has commonalities not only of the architect but also of increased globalization, functional demands, campus typology, exposed concrete, Mid-Century Modernism, national identity, and technology/innovation. Pampulha Modern

Ensemble was also co-designed by Oscar Niemeyer and the same criteria apply. Of the remaining World Heritage Sites, the only other one that meets seven of the nine criteria is Centennial Hall in Wrocław. Here we have similarities in commerce and industry, increased globalization, functional demands, campus typology, exposed concrete, national identity, and technology/innovation. However, none of the sites are in the Middle East, nor are they representative of the mid-century Middle East.¹⁷³

The 10 Tentative List sites that were reviewed in depth are: The Architectural Works of Alvar Aalto (Finland), Head Office and Gardens of the Calouste Gulbenkian Foundation (Portugal), Ensemble of Álvaro Siza's Architecture Works in Portugal (Portugal), Los Pozos, Xilitla (Mexico), National Schools of Art, Cubanacán (Cuba), *Palais de la Culture, ancien siege de Ministere de l'Education et de le Santé*, Rio de Janeiro



Faculty of Architecture, part of the educational complex at the National University of Bogotá in Colombia. Designed in 1936 by the German educator Fritz Karsen and the German-Colombian Architect Leopold Rother, the University City of Bogotá was a pioneer project in Latin America, which not only incorporated the concept of campus, but served as a laboratory of architecture and urbanism.

Source: Edgar Andrés Sarmiento García, *Universidad Nacional de Colombia. Facultad de Arquitectura*, (November 17, 2007), https://commons.wikimedia.org/wiki/File:00-130_Universidad_Nacional_de_Colombia._Facultad_de_Arquitectura4.jpg (accessed March 10, 2024).

¹⁷³ Further descriptions of each site from UNESCO's website and the comparative analysis tables can be found in Appendices 3 and 4.



Aerial view of Niemeyer-designed Ballroom (Casa de Baile), part of Pampulha Modern Ensemble, a visionary garden city project created in 1940 at Belo Horizonte. The Ensemble comprises bold forms that exploit the plastic potential of concrete, while fusing architecture, landscape design, sculpture and painting into a harmonious whole.

Source: Marcilio Gazzinelli, *Pampulha Modern Ensemble: Aerial view of the Ball Room*, (October 1, 2014), UNESCO World Heritage Centre, Nomination File, whc.unesco.org/en/documents/142163 (accessed March 10, 2024).

(Brazil), The architectural legacy of Rogelio Salmona: an ethical, political, social and poetic manifesto (Colombia), University City of Bogotá (Colombia), University of Tehran (Iran), and Serial Nomination of Tehran's Modern Architectural Heritage (Iran). When RKIF was compared to these 10 Tentative List sites, only three were found to meet seven out of the nine comparison criteria. These are described below.

The Head Office and Gardens of the Calouste Gulbenkian Foundation were found to meet increased globalization, functional demands, campus typology, exposed concrete, Mid-Century Modernism, national identity, and

technology/innovation, as was the *Palais de la Culture, ancien siege de Ministere de l'Education et de le Santé*, Rio de Janeiro. Again, neither of these is representative of the mid-century Middle East. In addition, neither belong to commerce and industry. However, the Serial Nomination of Tehran's Modern Architectural Heritage did meet commerce and industry, as well as mid-century Middle East in addition to increased globalization, functional demands, campus typology, exposed concrete, Mid-Century Modernism, and national identity.

3.9.3.2 Protected Niemeyer Buildings in Brazil

The following nine works created by Oscar Niemeyer are protected by Brazilian federal law and have been added to a list of cultural heritage buildings maintained by Brazil's National Historic and Artistic Heritage Institute, (*Instituto do Patrimônio Histórico e Artístico Nacional/IPHAN*): *Centro Tecnológico da Aeronáutica*; *Museu Oscar Niemeyer*; *Museu de Arte Contemporânea de Niterói*; *Praça do Caminho Niemeyer*; *Parque do Ibirapuera*; *Memorial da América Latina*; *Passarela do Samba*; *Casa das Canoas*; *Primeira residência do arquiteto Oscar Niemeyer*. The first is a residential training center, the following two are museums, and the fourth, fifth, and sixth are vast complexes with programs similar to RKIF. The seventh is both an event space by

night and a public school by day. The last two are residences. All nine works have maintained their authenticity, architectural integrity, original programs, and all feature innovative uses of reinforced-concrete technology.

Five of these works are related to commerce and industry, six have received international recognition, four represent the campus typology that RKIF shares, and five were built around the same time. Of the nine works, five can be qualified as representing Brazil's national identity in one way or another. Among these projects, RKIF stands out as being among the largest in terms of scale and the only one outside Brazil to have some kind of officially recognized cultural heritage status.



Niterói Contemporary Art Museum, Niterói, Rio de Janeiro, Brazil. The museum was designed by Niemeyer and completed in 1996.

Source: Donatas Dabravolskas, *Contemporary Art Museum in Niteroi City*, (October 31, 2018),

https://commons.wikimedia.org/wiki/File:Contemporary_Art_Museum_in_Niteroi_City_3.jpg, (accessed March 10, 2024).



Source: Halley Pacheco de Oliveira, *O Museu Oscar Niemeyer (MON)*, (September 11, 2013), https://commons.wikimedia.org/wiki/File:Museu_Oscar_Niemeyer_MON.jpg (accessed March 10, 2024).

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Lebanese Ministry of Defense designed in 1965
by André Wogenscky and Maurice Hindié.



Shaded walkway on pilotis - Lebanese Ministry of Defense designed in 1965 by André Wogenscky and Maurice Hindié.

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3.9.3.4 Similar Niemeyer Complexes in the Middle East and North Africa

Over the course of his career, Oscar Niemeyer was commissioned to design the following other large-scale projects in the MENA region: University of Science and Technology Houari Boumediene (Algeria), Leisure Island in Abu Dhabi (United Arab Emirates). These projects stretch across two countries and only the ones in Lebanon and Algeria were executed.

In addition to RKIF, all these projects received international recognition, were conceived around the typology of the campus, were designed around the same time, represent advances in reinforced-concrete technology, and were meant to underscore national identities.

Of these projects, RKIF stands out as being not only among the vastest in terms of built area but also due to the fact that most of the other projects were never built. Similar to RKIF, the University of Human Sciences in Algiers is a large campus with empty voids and pavilions that do not impede circulation.



Faculty of Science and
Technology (USTHB)
Houari Boumediene at
the University of Algiers
(Algeria), 1968.

Source: K1 said2005, USTHB en été, (October 13, 2007), Wikimedia Commons, https://commons.wikimedia.org/wiki/File:USTHB_en_%C3%A9t%C3%A9.jpg (accessed March 15, 2024).

3.9.3.5 项目团队在项目实施过程中应如何管理项目沟通？

Four other projects in the region qualify having programs similar to RKIF, *i.e.*, the Damascus International Fair (Syria), the Tehran International Permanent Fairground (Iran), the Izmir International Fair (Turkey), and the Baghdad International Exhibition (Iraq). These projects stretch across four countries in the region. All these projects have programs dedicated to the exhibition of commercial and/or industrial goods. All are part of international associations, represent a degree of national identity, have maintained their programs as originally intended, and do follow a kind of campus-planning typology. Among these projects, however, RKIF is one that has kept its original Mid-Century Modernist architectural integrity.

3.9.4 Conclusion

In terms of nationally protected Oscar Niemeyer projects in Brazil, RKIF stands out as being the largest in scale. The same applies to projects Niemeyer designed in the MENA region, in addition to the fact that most were not executed. As compared to the four other surviving fairgrounds in the area, RKIF is the only one that has maintained its Modernist identity. Although there are several comparable sites on the World Heritage List and Tentative List in terms of comparison to the selected nine criteria, RKIF is unique. Not only does RKIF represent Mid-Century Modernism in the Middle East, of which there are very few sites inscribed, but it is also the only complete fairground that is on the World Heritage List. Therefore, there is no doubt that RKIF fills a gap on the current World Heritage List.

3.10 As a National Landmark

3.10.1 The Fair at the National Level

Until the early 2000s, the Fair was not really mentioned in the various national heritage discourses. It was not until 2004, that a research team of Lebanese scholars was formed to carry out a study on the work of Oscar Niemeyer in Tripoli.¹⁷⁴

For the research team, the Modernist architecture of the Fair was considered part of the already rich local urban heritage, from the Mamluk and Ottoman historic fabric to the French Mandate and Modernist Architecture. Triggered by the content of an article that appeared in the *An-Nahar* newspaper on August 14, 2004, promoting the significance of the Cederland proposal and the impact of the project on the Fair, intellectuals, scholars, architects, and Lebanese and foreign safeguarding associations were mobilized, motivating an important discussion about the significance of Niemeyer's design that was initiated and led to the rediscovery of the Fair and its history.

An open day was organized on February 12, 2005, by the research team mentioned above, and to which the two Orders of Architects and Engineers (Beirut and Tripoli), associations, teachers, and students from Lebanese universities were invited. During this day, the organizers presented the first elements of their research and organized a guided visit to the Fair's buildings. The day ended with a debate and recommendations.

From this open day onward, joint collaboration with other associations like Patrimoine Sans Frontiere and APSAD, allowed the organization of several meetings and workshops on the Fair

between Lebanese and foreign universities. This mobilization also led to the preparation for an international seminar that was supposed to be held during spring of 2006. The aims of this seminar were to promote the site of the Fair both in Lebanon and abroad, to initiate a reflection concerning the possibilities of revitalizing the site and of making it more accessible to the inhabitants of Tripoli, and the advocacy for its inscription on the National Inventory List of the Lebanese Cultural Heritage.¹⁷⁵ However, the implementation of this seminar was interrupted by the launching of the "Chinese Fair" project in the spring of 2006 and the Team's engagement in the debate as well as the later conflicts in the country.¹⁷⁶ In parallel, these awareness and collective advocacy efforts led to the inscription of the international Fair on the Watch List of the World Monuments Fund (WMF) in August 2006.¹⁷⁷

All these actions gave the Fair national and international recognition and, since then, it has become a destination for tourists and schools of architecture as well as a theme for research. The inscription of the Fair on the UNESCO Tentative List in 2017 and, recently, on the UNESCO World Heritage List in Danger, was certainly the crowning achievement of collective efforts made over many years at the local and national levels. Up until the present moment, RKIF's heritage values have not been legally recognized by the responsible authorities (Ministry of Culture).

Nevertheless, the nomination of RKIF to the World Heritage Tentative List in 2018 and the subsequent preparation of an Emergency Nomination to the World Heritage List in 2022

¹⁷⁴ The research team was created in 2004 and included Architect George Arbid, Urban Planner Joe Nasr, and Urban Planner Mousbah Rajab. The first objective was to collect data and research the Fair's archival record. This team organized an open-day at RKIF with tours and lectures on February 12, 2005.

¹⁷⁵ Text taken from the unpublished proposal written by the organizers of the open day after a series of meetings with several local and French NGOs under the title: "Tripoli International Fair. International Seminar – Spring 2006".

¹⁷⁶ The July 2006, the Israeli War on Lebanon, followed in 2007 and 2008 by other military events in Tripoli and the North.

¹⁷⁷ World Monuments Fund, "World Monuments Fund Announces 2006 World Monuments Watch List of 100 Most Endangered Sites", November 2, 2009, <https://www.wmf.org/press-release/world-monuments-fund-announces-2006-world-monuments-watch-list-100-most-endangered> (accessed May 20, 2023).

are clear indicators of the official recognition of RKIF's exceptional value, be it on the national or the international levels. In addition, the newly endorsed Law 274 recognizes the heritage value of RKIF (initially, for being on the World Heritage Tentative List). Law 274 enforces the role of the Ministry of Culture in the control of development at least in Niemeyer's core zone. However, this law is not yet considered fully operational as some of its articles may require more detailed implementation decrees, especially where the buffer zone is concerned (as determined in Law 274 and the World Heritage Nomination file).

Despite the absence of national designation, and hence, a national strategy that promotes RKIF as a historic and heritage place, the general public appears to value this place for its architectural and aesthetic significance and its urban and economic potential. UNESCO Beirut's survey results, undertaken between October 2020 and February 2021 to assess the public valuation and expectations about RKIF, confirmed the general public's recognition of the complex mostly for its architectural, urban, aesthetic, and then economic values (from the highest ratio to the lowest one), while the historic and social values scored at the bottom of the valuation scale.

This is mostly comprehensible since, from one side, the history and the circumstances of the Fair's construction have not been properly interpreted nor disseminated, and from the other side, RKIF has not produced the expected social role in the daily life of most Lebanese or Tripolitans, specifically. Moreover, among the four above-mentioned qualities of RKIF, the built structures were the most popular (418), with open park space coming in a close second (408). Historic site came in third (320) with 138 respondents indicating they were unsure about this quality.¹⁷⁸

A considerable percentage of respondents to this survey (73%) disclosed a desire to see RKIF nationally designated and promoted similarly to other national heritage sites in Lebanon, particularly the Crusader Citadel of Tripoli, and Baalbek Temples. Those who did not agree on national designation (22%) thought that this legal protection might prevent the development of the site.

With its recent international recognition as a UNESCO World Heritage Site (January 2023), the Ministry of Culture is bound to designate the site as a National Heritage Site. The two available options based on the present law in place – the Law on Antiquities 166/1933 and its amendments in 1936 and 1966 – are:

- Listing on the General Inventory of Historic Sites and Monuments through a ministerial decision (ادخال على لائحة الجرد العام للمواقع والأبنية التاريخية بموجب قرار وزاري)
- Inscription on the General Inventory of Historic Sites and Monuments through a presidential decree (تسجيل على لائحة الجرد العام للمواقع والأبنية التاريخية بموجب مرسوم جمهوري)

This being said, the statutory designation through a presidential decree offers a higher degree of protection and control over RKIF's core and buffer zones; above all, it prevents any kind of development on the inscribed parcels without the prior consent of the Directorate General of Antiquities (DGA) - Ministry of Culture, and it gives DGA the opportunity to define regulations for the buffer zone.¹⁷⁹ However, this option is not practically possible at the moment, until the successful election of a president for the country.¹⁸⁰

According to the Law on Antiquities 166/136, archaeological tells, historic sites or monuments (standing or in ruins), historic landscapes, grottos,

¹⁷⁸ Refer to the Analysis Report of UNESCO Beirut's Public Survey in Appendix 1.

¹⁷⁹ The inscription through a presidential decree permits the Ministry of Culture to regulate the surroundings (the buffer zone in the present case) of an inscribed lot/monument. Typically, a 50-m radius around the inscribed monument is used as a *non-aedificandi* zone and 100 m beyond the 50 m may be developed with a height of only 3 m or single-story buildings. In the present case, the options would be open for the Ministry of Culture to put the needed regulations for the buffer zone according to UNESCO's World Heritage standards. However, this can be achieved only if an inscription decree is issued.

¹⁸⁰ The term of the last president's mandate expired on 31 October 2022; the Council of Ministers have not yet succeeded in electing a new president.

Top and Center
Posters developed within the framework of the poster and tapestry competition "Concours d'affiches et de cartons de tapisserie" exhibition at the Sursock Museum, 1963. One of the thematics for the poster competition, in addition to tourism, was the newly launched project of the Tripoli Fair.

Source: Images by Dalati and Nohra. Courtesy of Sursock Museum Beirut*.



Amado Chalhoub, RKIF Director (left), explaining the project to President Charles Helou (September 1964 - October 1970) and Prime Minister Rachid Karami (center) during a site visit.

Courtesy of Laurice Chalhoub.

or inscriptions dating back before 1700 AD are considered antiquities and they are *ipso facto* protected by the law even if they are not listed nor inscribed on the National Inventory List for historic monuments and sites. However, buildings and sites after 1700, could be considered similar or antiquities and thus could enjoy the same protection, only if they are listed or inscribed on the National Inventory List. The criteria for listing or inscribing a site of heritage value as defined by this law focuses on the architectural and aesthetic qualities of an asset, in addition to the significance of its historic narrative.

RKIF encompasses wider significance and meanings than what is defined under the Law on Antiquities. Therefore, it does not only qualify for national statutory designation, but also future designation should encompass the different meanings and associations including the local and national community-held values, for it is:

- A node to the golden ages of Lebanon and a source of pride. RKIF is one of the major government-led infrastructure projects implemented during the nation-state building period; a representation of the modernization of the economy and a symbol of progress at the time when Lebanon was still a young nation. It was, and still is, a beacon of hope for a better Lebanon, despite all the disappointments and the ups and downs since the inception of the idea of a fair in Lebanon. As rightly expressed by Mollard, "Reclaimed before it is regenerated, the Rashid Karami Fairground is still resonantly emblematic of a visionary collective political and cultural ambition, and an open promise to the Lebanon of tomorrow."¹⁸¹

¹⁸¹ Manon Mollard, "Revisit: Rashid Karami Fairground by Oscar Niemeyer," *Architectural Review* (February 20, 2019), <https://www.architectural-review.com/buildings/revisit-rashid-karami-fairground-by-oscar-niemeyer?search=https%3a%2f%2fwww.architectural-review.m%2fsearcharticles%3fparametrics%3d%26keywords%3dmollard%2c+manon%26pagesize%3d10%26cmd%3dgotopage%26val%3d%26sortorder%3d1> (accessed May 20, 2023).

- An architectural masterpiece associated with one of the most renowned Modernist architects, and a tangible example and contributor to the history of Modernism in Lebanon and the region. RKIF was an inspiring example to other local Modernist architects with its innovative design concepts.
- An open-air museum of the modern object, with its variety of geometric forms, curved structures, and construction techniques. RKIF acts as a field for research and learning for current and emerging architects, engineers, urban planners, and heritage practitioners.
- A green open landscape in the heart of a congested city where most festivities take place.
- A resource for socio-economic and cultural regeneration. RKIF is an inspirational place for art and culture. With its magical quality as a derelict site, RKIF was able to attract exhibitions, photographers from around the world, fashion shows, art installations, and commercial advertising, capable of moving the art scene from Beirut to Tripoli.¹⁸²
- A reflection of the spirit of time with its ideals and concepts, technological innovation (the Experimental Theatre), and longing to promote science and research (i.e. the scientific exploration of space at the Space Museum).¹⁸³
- A place of memory for the turbulent and violent history of Lebanon.



Guided visit of RKIF for landscape architecture students of the Lebanese University during February 2024.

© Maya Hmeidan, 2024

¹⁸² Christophe Rioux, "Quel Avenir pour la Cité Oubliée de Niemeyer", *Le Quotidien de l'Art au Liban*, Edition No. 1591, October 23, 2018, <https://www.lequotidiendelart.com/articles/13567-au-liban-quel-avenir-pour-la-cite-C3%A9-oubliee-de-niemeyer.html>; Maya Ghandour Hert, "INSTALLATION - L'artiste allemande a relooké la Foire Rachid Karamé Franziska Pierwoss trace des lignes rouges à Tripoli", *L'Orient-Le Jour*, June 9, 2008, https://www.lorientlejour.com/article/591888/INSTALLATION_-_L%2527artiste_allemande_a_relooke_la_Foire_Rachid_KaraméFranziska_Pierwoss_trace_des_lignes_rouges_a_Tripoli.html (accessed May 15, 2023).

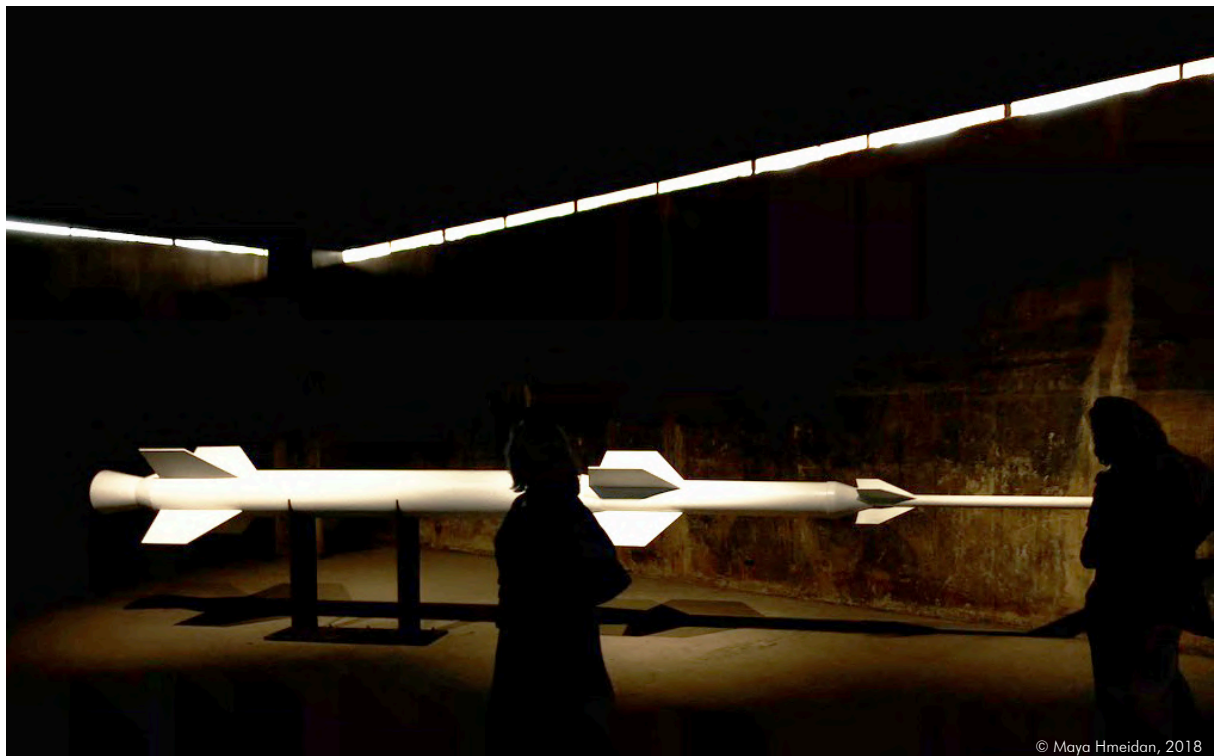
¹⁸³ Manoug Manougian, a mathematics professor at Haigazian University, led a group of young scientists, students, and army experts in the late 1950s to develop an infant space program for Lebanon and launched the first Middle Eastern rocket. The Lebanese government subsequently funded the project with the sum of 12,000 Lebanese Pounds in 1963, and the same amount in 1964. More than ten solid-fuel Cedar rockets were launched from Lebanon during the early 1960s, the time of the space race, revolutionary ideas, and Pan-Arabism. The launchings gave rise to national celebrations. To commemorate the 21st anniversary of Lebanon's independence, a series of stamps representing the Cedar IV rocket was issued. The Arab defeat of 1967 put an end to the initiative and slowed down the thrust towards this aspect of technological modernity in this part of the world. Richard Hooper, "Lebanon's forgotten space programme," *BBC News*, November 14, 2013, <https://www.bbc.com/news/magazine-24735423> (accessed May 15, 2023); Elissa Hassan, Annahar, "The proud history of the Lebanese Rocket Society", *An-Nahar*, (July 10, 2017), <https://www.annahar.com/english/article/995570-the-prideful-history-of-the-lebanese-rocket-society> (accessed May 15, 2023).



A reproduction of a 1964 postage stamp, produced by the Lebanese Postal Service to commemorate the 21st anniversary of the Lebanese Independence. Depicted is the Lebanese Rocket Society's Cedar IV rocket.

Source: Richard Hooper, "Lebanon's forgotten space programme," BBC News, (November 14, 2013), <https://www.bbc.com/news/magazine-24735423> (accessed May 15, 2023).

This national designation should not curtail the future development of the complex, nor that of the other areas within the elliptical boundary of the site (outside of Niemeyer's core zone). It is well known that these lands were expropriated by the government for future expansion and the addition of other facilities (be it of cultural or economic type). Therefore, the national designation should clarify the different approaches to the World Heritage site and its buffer zone. The first should involve restoration and repurposing of the complex with compatible functions and programs that do not harm the values represented in the historic fabric and its forms. While acknowledging the need for growth and development, the new changes should respect the existing fabric of the complex.



A scale reproduction of the original 8 meter long Cedar IV rocket of the Lebanese Rocket Society, differing only in its white color, by artists Joana Hadjithomas and Khalil Joreige, exhibited at the Space Museum during the art exhibition "Cycles of Collapsing Progress" in 2018.

3.11 As a World Heritage Site in Danger

3.11.1 RKIF World Heritage Emergency Nomination

For a nomination to be approved for World Heritage listing, it must possess Outstanding Universal Value (OUV),¹⁸⁴ as well as meet the test of authenticity and integrity. There are six OUV criteria for cultural and mixed heritage sites:

OUV Criteria

- (i) to represent a masterpiece of human creative genius;
- (ii) to exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town-planning or landscape design;
- (iii) to bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared;
- (iv) to be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history;
- (v) to be an outstanding example of a traditional human settlement, land-use, or sea-use which is representative of a culture (or cultures), or human interaction with the environment especially when it has become vulnerable under the impact of irreversible change;
- (vi) to be directly or tangibly associated with events or living traditions, with ideas, or with beliefs, with artistic and literary works of outstanding universal significance. (The Committee considers that this criterion should preferably be used in conjunction with other criteria.)¹⁸⁵

The RKIF nomination was submitted in 2022 to the World Heritage Centre for emergency listing under three of the six OUV criteria for cultural

heritage and mixed sites. These included criteria (i), (ii), and (iv) as quoted below.

Rachid Karami International Fair (Lebanon)

"The Rachid Karami International Fair in Tripoli is an outstanding example of urban planning and architecture of the 20th century Modern Movement, with Oscar Niemeyer's unique architectural language successfully integrated into the context of the Arab Near East.

"This vibrant architecture, which is a pure example of Niemeyer's Brazilian Modernist style that was infused with traditional elements of local architecture, was intended to express the aspirations of newly independent Arab people to partake in the universal process of modernization.

"Built in Tripoli, the capital of the Northern Governorate in Lebanon and the second largest city in the country, and incorporating around 70 ha of multifunctional fairground space, it was meant to express high ambitions on an international level and bring a sense of self-affirmation for post-independence Lebanon. Designed by Niemeyer as a new modern urban core for Tripoli between 1962 and 1967, this ambitious project consisted of dynamic curved structures of large spans and concrete shells, the largest in the Middle East at that time, generous multi-level public spaces, and event venues.

- **"Criterion (i):** The Rachid Karami International Fair complex in Tripoli, designed with Oscar Niemeyer's Brazilian Modernist principles as a new modern urban core for the city of Tripoli, is a major creation of the human genius, which represents a vivid expression of the principles and ideals advanced by the Modern Movement and effectively

¹⁸⁴ Jukka Jokilehto, *The World Heritage List. What is OUV?* (Paris: ICOMOS, 2008).

¹⁸⁵ UNESCO, *Operational Guidelines for the Implementation of the World Heritage Convention*, 20-21.

integrated in the context of the Arab Near East, near the historic centre of the city which is itself inscribed on the Tentative List. The scale and monumentality of the Fair complex and modern urban core project were closely linked to an ambitious development strategy and a process of self-affirmation expressing the search for modernity and for a new identity during the 1960s.

- **"Criterion (ii):** The Rachid Karami International Fair project in Tripoli expresses in an exceptional way the vast modernization movement that developed in the Arab Near East since the 1950s. The successful integration of Brazilian Modernist concepts into the context of the Arab Near East in Tripoli is also a vivid example of cultural exchange in the field of architecture.

"Moreover, the close collaboration between Oscar Niemeyer, the architect of the complex, and the Lebanese engineers who prepared the technical studies, the execution drawings, the tender documents and supervised the execution of the project according to the architectural drawings prepared by the architect's office, was a remarkable example of a technical exchange between different continents: Lebanese engineers and contractors gained valuable experience with sophisticated reinforced concrete structures of large spans and concrete shells, the largest in the Middle East at that time, while a new generation of Lebanese architects was inspired by Niemeyer's "Brazilian Modernism", which reflected in several of their works whether in Lebanon or in the Arab Near East.

- **"Criterion (iv):** Oscar Niemeyer's monumental fairgrounds project in Tripoli is an outstanding example of World Fairs

that emerged in the newly independent Arab countries to express national pride and partake in the universal process of modernization. It constitutes a unique example of a large-scale Modernist exhibit design typology, which rejects the usual international exhibitions model with its discordant sprawl of individual pavilions, and replaces it by an architectural typology characterized by simplicity and discipline where a single large main structure hosts the various pavilions and a set of minor spaces serve a social-reformative and educational purpose."¹⁸⁶

3.11.2 RKIF World Heritage Inscription

The Rachid Karami International Fair was inscribed on the World Heritage List on January 25, 2023, based on the Decision of the 18th Extraordinary Session of the World Heritage Committee. Criterion (i) was not found to be justified by the ICOMOS World Heritage Panel and was not accepted by the World Heritage Committee in their final decision. The site was inscribed under criteria (ii) and (iv) and, as an emergency nomination, was also simultaneously inscribed on the List of World Heritage in Danger.¹⁸⁷

In reference to the OUV statement which follows, for criterion (ii), the site embodies the modernization of the Arab Near East, as well as the exchange of technology between Niemeyer, the Lebanese engineers who developed the tender documents, and the local contractors who executed the work. The site's reinforced concrete was considered structurally innovative in the Middle East at that time. Under criterion (iv), the Rachid Karami International Fair is noted as an outstanding and unique example of a World's Fair using a new typology wherein pavilions were to be assembled under a single structure, the Grand Cover, supplemented by additional structures of

¹⁸⁶ Republic of Lebanon, *Emergency Nomination of Rachid Karami International Fair-Tripoli-Lebanon*, <https://whc.unesco.org/en/list/1702/documents/> (accessed November 30, 2023).

¹⁸⁷ UNESCO World Heritage Convention, *Decision 18 EXT.COM 5.1, Any other matter: Nominations to the World Heritage List - Nominations to be processed on an emergency basis - Lebanon*, <https://whc.unesco.org/en/decisions/8047> (accessed April 20, 2024).

social and cultural usage. In terms of integrity, it is noted that the complete 72-ha elliptical site still exists (estimated to be worth \$2 billion currently), and that nearly all of the original components are extant, mostly in their original design form, with only one irredeemably altered (Collective Housing). Despite later landscape modifications, the original reflecting pools that many of the structures sit in are still extant.

As for authenticity, most of the structures retain Niemeyer's original design, as known from the project album that he developed for the site. Even though the structures were stripped of finishes and furnishings during the Civil War, the spirit of modernization and liberalization of Lebanese society is still present and embodied by the site.

The World Heritage Committee provided recommendations, which are considered in more detail in Chapter 5. To briefly summarize, these include: establishing the exact geographic coordinates of the site; defining a buffer zone outside of the original elliptical property to be discussed during the reactive monitoring mission; developing land-use and zoning

regulations for the immediate vicinity of the site and within the ellipse outside of the Niemeyer core zone; including in the management structure representatives of civil society, cultural heritage-protection institutions, professionals and academic institutions; implementing a detailed conditions assessments of each structure; digitizing the documentation available at various locations so that it is readily accessible; informing the World Heritage Centre of any major projects that could impact on OUV; developing and implementing Heritage Impact Assessments (HIAs) for any projects that could impact OUV including for the Knowledge and Innovation Centre (KIC - a competition held in 2019 for the use of the unbuilt portion of the original elliptical site); and the revision of the two urban master plans for Tripoli and El Mina.¹⁸⁸

In the ICOMOS World Heritage Panel's recommendations, it was noted that the completion of the Conservation Management Plan is critical. In addition, ICOMOS emphasized the need for performing a conditions assessment of each individual structure so as to develop a comprehensive treatment plan.¹⁸⁹



General view of RKIF's Cultural and Recreational Sector.

¹⁸⁸ UNESCO, *Eighteenth Extraordinary Session* (Paris: UNESCO, January 24, 2023), 2-5.

¹⁸⁹ ICOMOS, *ICOMOS Report to the World Heritage Committee. Evaluation of nominations to be processed on an emergency basis* (Paris: ICOMOS, January 24, 2023), 1-11.

3.11.3 Statement of Outstanding Universal Value (OUV)

The emergency inscription of RKIF on the World Heritage List and the World Heritage List in Danger was accepted based on the following justification for Outstanding Universal Value:

"Brief Synthesis

"The Rachid Karami International Fair-Tripoli has been erected in Tripoli, the second largest city in Lebanon and the capital of the Northern Governorate, and was designed by Oscar Niemeyer between 1962-1967 and built until 1975. The main building of the International Fair consists of a huge oblong covered exhibition space, the Grand Canopy, under which the exhibition pavilions of several countries could be freely installed. The entrance to the International Fair complex begins at the southern end of the Grand Canopy: a vast ramp leads to a raised portico from where the visitors can discover the entire composition. A series of educational, recreational and cultural facilities were immersed within a "Brazilian Tropical Garden" and connected by water pools and pedestrian passages. In the northern part, a ceremonial ramp leads to the outdoor amphitheatre, surmounted by a monumental arch forming a symbolic gateway to modernity and a landmark of the city of Tripoli.

"The use of traditional elements of local architecture was intended to express the aspirations of the newly independent Arab peoples to take part in the universal process of modernisation. For its scale, its daring structural solutions, its architectural expression, its vast modernist public spaces and gardens, its links to post-independence identity buildings, and despite the deterioration of most of its structures and the endangered integrity of several of its components due to the ageing of the concrete, the Rachid Karami International Fair-Tripoli is one of the most representative works of modern architecture of the 20th century in the Arab States.

- **"Criterion (ii):** The Rachid Karami International Fair-Tripoli expresses in an exceptional way the successful integration of Brazilian modernist concepts into the context of the Arab Near East in Tripoli and is a vivid example of cultural exchange in the field of architecture. The collaboration between Oscar Niemeyer, the architect of the complex, and the Lebanese engineers and contractors has given them valuable experience in sophisticated large-scale reinforced concrete structures and concrete shells, while a new generation of Lebanese architects was inspired by Niemeyer's "Brazilian modernism", which is reflected in several of their works, whether in Lebanon or in the Arab Near East.
- **"Criterion (iv):** Oscar Niemeyer's monumental International Fair project in Tripoli is an outstanding example of world fairs that emerged in the newly independent Arab countries to express national pride and take part in the universal process of modernisation. It constitutes an outstanding architectural example of a large-scale modernist exhibition complex, which defines an architectural typology characterised by simplicity and discipline where a single main large structure hosts the pavilions; a set of smaller structures serve social-reformative and educational purposes.

"Integrity

"The Rachid Karami International Fair-Tripoli covers an elliptical area corresponding to the limits of the fairground as it was built and contains all buildings designed by Niemeyer. Almost all buildings and structures were preserved according to Niemeyer's original design but lie in a state of abandonment, while outdoor and landscaped areas are maintained. Despite the loss of interior finishes, fixtures, glazing, doors and equipment due to the

war, the attributes of Outstanding Universal Value have retained sufficient integrity. Some interventions on the Grand Canopy dictated by modern uses are reversible; the transformation of Niemeyer's Collective Housing Prototype has seriously affected its architectural quality and erased the traces of the original design, but attempts have been made to restore the structure to its original conditions. However, the integrity of the property is extremely vulnerable, with the main threat coming from the precarious state of conservation of most buildings, which face serious stability problems due to the severe steel corrosion and the ageing of concrete.

"Authenticity

"The layout and almost all buildings of the Rachid Karami International Fair-Tripoli have been preserved according to Niemeyer's design. In most of the buildings of the complex, the structure defines their form and volume and is proudly exhibited to the audience. The main original structures of the International Fair complex, most of which are made of authentic materials, credibly reflect their period of construction and the quality of their execution.

Despite the loss of interior finishes, fixtures and equipment, the transformation of the collective housing prototype into a hotel, and the interventions to the southern part of the Grand Canopy, the surviving attributes credibly convey the Outstanding Universal Value through the overall layout, the design of the structures, their sculptural conception, and the construction materials. The reflective pools and the hard landscape elements around the buildings are preserved according to Niemeyer's design, the tropical gardens are still present and retain their "Brazilian spirit". The International Fair complex in Tripoli still bears witness to an era of modernisation and social liberalisation in Lebanon and the Arab Near East."¹⁹⁰



Side view of RKIF's monumental arch and elevated ramp leading to the OAT, looking east.

¹⁹⁰ UNESCO, *Rachid Karami International Fair - Tripoli*, <https://whc.unesco.org/en/list/1702> (accessed March 23, 2024).

3.12 Character-Defining Features Associated with RKIF



The sweeping view from the rooftop of the Water Tower, showing the curved concrete forms characteristic of Niemeyer designs.

© UNESCO/Ieva Saudargaitė, 2023

As a culturally significant site, character-defining features (also known as attributes) of RKIF need to be identified and protected. The identification of attributes is indispensable for impact assessments related to World Heritage properties. For RKIF, the character-defining features and attributes have to do with scale and monumentality, campus composition, materiality, shapes, aesthetics, siting, simplicity and discipline, and other intangible qualities. The futuristic aspect of the site to which many Lebanese attached their hopes of modernity constitutes another significant attribute. The character-defining features of RKIF include:

- **Monumentality:** The scale of the site is enormous, ennobling the industrial nature of the construction material. Most of the structures are located in reflecting pools, doubling their size. The monumental effect is enhanced by the volumes contrasting and arising from a plane. The relationship between the solids (buildings) and void (surrounding spaces) is inseparable.
- **Campus-like setting:** The Fairground was designed as a campus with distinct sectors corresponding to activities. The entire composition is viewed from the Entrance Portico's elevated ramp.
- **Exposed concrete:** Also referred to as fair-faced concrete, this aesthetic is very common in Brutalist architecture, and prevalent throughout the site, although there is archival and limited physical evidence that some of the buildings may or should have been whitewashed (*i.e.* the Experimental Theatre). The concrete was site batched and poured in place.
- **Board-formed concrete:** This characteristic is typical of the exposed concrete soffits in many of RKIF's structures as well as some walls.
- **Geometric shapes:** The structures on the site have distinct forms, be it spherical, elliptical, square, rectangular, pyramidal, domed, arched, boomerang, amorphic, parabolic, spiral, etc.

These shapes, carefully sited across the landscape to provide specific viewsheds, read somewhat as sculptural objects. Niemeyer's design principles provided for integration and asymmetry of these Modernist shapes that harmonize, while simultaneously paying tribute to the traditional elements of local architecture. There is also a marked horizontality to the site's structures with the exception of the Arch, which straddles over a monumental ramp.

- **Reflecting pools:** Many of the structures are surrounded by reflecting pools. The intended impression was for these structures to float in space. At the same time as noted above, because their image was reflected in their respective pools, it doubled their size.
 - **Recessed lighting:** As a way to emphasize the continuous plane of board-formed soffits, the architect favored recessed lighting.
 - **Landscape and voids:** Oscar Niemeyer emphasized void space in his complexes. Without voids, his buildings and their overall composition are lost. Niemeyer's voids no longer read at RKIF, be it because of the infilling of the voids through the Collective Housing that permitted views to the sea or the alteration of the landscape from lawns with three distinctly sited blocks of palm groves into a municipal-style garden. It is unlikely that the Collective Housing will be returned to its original design in the short-to-medium term; however, the Niemeyer-designed pathways conceivably could be reimplemented. Although significantly altered by plantings introduced in 1996-1997, now mature and having acquired their own value for Tripolitans as a "green lung," the oblique pathways are an important character-defining feature that has been lost. This original feature potentially can be recovered by selective removal of plantings, particularly hedges that define the current rectilinear pathways.
- In order to mitigate this loss, plantings can be transplanted elsewhere or even replanted as part of the undeveloped portion of the elliptical site. In addition, the current use of the landscape as a public space to enjoy greenery, leisure, and events supports Niemeyer's initial intent of the site's openness towards the city.
- **Modernity:** The Mid-Century Modernist aesthetic, so totally adopted by Oscar Niemeyer, is the common link between the disparate structures, whose functions vary greatly, that ties the entire site together. Mid-Century Modernism is characterized by minimalism and experimentation, open and free-flowing plans, unusual forms and materials, glazed enclosures and transparency. Niemeyer's composition is disciplined and expresses simplicity, while also incorporating the concept of the Brazilian tropical garden. In the case of RKIF, Modernism also represents the aspirations of this young country to take its place in the modern world.
 - **Futurism:** Related to modernity is the futuristic quality of Niemeyer's design for RKIF. The Space Museum is a prime example of these ambitions for the Lebanese state, the first in the Arab world to successfully test and launch rockets. Futurism is part of the design language referenced by Oscar Niemeyer at RKIF and thus, constitutes an intangible value of the site; it is very much still considered by Tripolitans and Lebanese to embody RKIF.

The above list incorporates the attributes (physical features and intangible qualities) that must be retained, conserved, and/or reimplemented (in the case of repairs and upgrades) for RKIF to maintain its cultural values, including the architect's original intentions and today's identified associations with the place. The recognition of character-defining features assists in guiding future decisions so that there is respect for the site's aesthetic and, ultimately, less impact from interventions.

3.13 Statement of Cultural Significance

The following statement of cultural significance provides a summary of RKIF's overall layers of significance across international, national and local community levels. It also incorporates the Outstanding Universal Value (as mentioned in section 3.11.3 above) in response to the recent inscription of RKIF on to the World Heritage List.

The key heritage values (historic, aesthetic, scientific, and social) identified through the assessment of significance process are synthesized in the below statement.¹⁹¹ The content of this chapter, in general, and this statement of significance, in particular, becomes the basis for the development of the conservation policies for RKIF (Chapter 4) and can also be adopted to develop the future management plan of the site.

The Rachid Karami International Fairground (RKIF) emerged in the Middle East as a post-colonial monument to modernization, symbolizing optimism about the future. It was designed by world-renowned architect Oscar Niemeyer, himself a product of Brazil, a Portuguese colony that became a kingdom. Architectural Modernism, and what was then called the International Style, was the image and language of architecture used to articulate the narrative of modernization embraced in the Middle East, which became more prevalent from the 1950s onwards. It was a mechanism used to inspire citizens of newly formed republics to move forward into the second half of the 20th century.

RKIF represents a dialogue between architecture, siting, and landscape - a cross-fertilization of large developments that Oscar Niemeyer was exploring as in his proposal for the United Nations Headquarters on which the final project was based and later, the building complexes he designed for Brasilia. In fact, Brasilia is contemporaneous, and concepts taken from RKIF are re-translated in Brasilia and vice versa.

RKIF's Lebanon Pavilion's arches are inverted in Brasilia's earlier Alvorada Palace. The dome of RKIF's Experimental Theatre takes its cues from Brasilia's National Congress of Brazil. RKIF's Entrance Portico is a model for Brasilia's Ministry of Justice. RKIF both evolves from and is a precedent for Brasilia, itself a World Heritage site. RKIF successfully integrated Niemeyer's Brazilian Modernist concepts into the local context through his close collaboration with Lebanese design professionals, influencing a generation of Lebanese architects and engineers.

Consisting of over 20 structures, RKIF is the only surviving intact Mid-Century Modernist international fairground in the Middle East, if not worldwide, despite the long years of Civil War, abandonment, and neglect. It follows the Damascus Fair of 1954 and the Baghdad Fair of 1957, although many parts of these two fairs did not survive or were drastically altered. It is an expression of political and economic force, representing commercial development and international positioning of nations. Each building is innovative both in construction technology and form, introducing new norms for fairs around the world with the Grand Cover being Niemeyer's way to unify and render coherent what had until then been the result of disparate and unconnected pavilions of dubious stylistic origins.

RKIF is the physical manifestation of these concepts, which was organized "with the aim of promoting technological progress in the service of humanity."¹⁹² The buildings' novel forms are futuristic, emphasized by Niemeyer's landscaping and the siting of each as an object. Today it represents a place in limbo, part of the collective memory of unrealized progress, conjuring nostalgia for an optimistic past, surviving as an urban oasis that serves as a green lung in an over-developed city.

¹⁹¹ According to the ICOMOS Australia's *Burra Charter*, 2013: 4 "Cultural significance means aesthetic, historic, scientific, social or spiritual value for past, present or future generations."

¹⁹² Oscar Niemeyer, "J'ai conçu ainsi la Foire du Liban. Voici pourquoi," *L'Orient* (September 30, 1962).

3.14 Levels of Cultural Significance

All World Heritage sites must pass the test of authenticity and integrity, in addition to meeting one or more of the ten Outstanding Universal Value (OUV) criteria for listing.¹⁹³ According to article 13 of the Nara Document on Authenticity, aspects of authenticity “may include form and design, materials and substance, use and function, traditions and techniques, location and setting, and spirit and feeling...”¹⁹⁴ The Nara Document also states under article 9 that “Conservation of cultural heritage in all its forms and historical periods is rooted in the values attributed to the heritage.” Further, in article 10, it notes “Authenticity ... appears to be the essential qualifying factor concerning values.”¹⁹⁵ Integrity is related to having all of the components necessary to convey cultural significance. At RKIF, there is substantial integrity since the entire original site as well as all of the structures designed by Oscar Niemeyer remain, albeit some more modified than others. Although the structures were mostly complete prior to the Civil War and were subsequently stripped, authenticity at RKIF remains in the form and design, materials and substance, and location, perhaps even in feeling.

As part of the evaluation of the authenticity and integrity of RKIF taking into account changes over time, the landscape and each structure designed by Oscar Niemeyer that is part of the Rachid Karami International Fairground is characterized below. For the purpose of this CMP, the complex is divided into three main elements (the buildings, the built landscape, and the vegetated landscape). Each element (*i.e.* Fairground buildings) is presented along with its respective components (*i.e.* buildings that are scattered in RKIF’s five sectors, such as the Entrance Portico) and sub-components or features (*i.e.* the entry ramp, the canopy (roof) of the Entrance Portico), each along with its varying



The central column supporting the Water Tower roof which offers a panoramic view of the whole site and its surroundings.



The characteristic arcade of the Lebanon Pavilion.

¹⁹³ World Heritage Centre, *Operational Guidelines for the Implementation of the World Heritage Convention* (Paris: UNESCO, 2021), 29-30.

¹⁹⁴ Knut Einar Larsen, ed., “Nara Document on Authenticity,” *Nara Conference on Authenticity* (Paris: UNESCO World Heritage Centre, 1995), xxiii.

¹⁹⁵ *Ibid.*, xxii.

degree of cultural significance despite the overall exceptional level of significance of the place as a whole. RKIF's components, elements, and features contribute to its functionality, aesthetics, overall character and significance. Due to the scale of the site, mentioned features were kept very general.

The point of establishing levels of significance for the different elements and components of RKIF is so that these inform specific conservation policies necessary for the management of future change while retaining the place's significance.

Four levels of significance are identified in the table below; exceptional significance (****), considerable significance (***), some significance (**), and no significance (*). In addition, another consideration is whether alterations are intrusive (Int).¹⁹⁶ For each level of significance, a general conservation treatment policy is given in the table below. This general conservation policy is to be applied in association with other specific policies of the respective component and sub-components mentioned in Chapter 4.

Level of Significance	****	***	**	*	Int
Definition	Original to Niemeyer's design (maintaining high to medium level of integrity)	Keeping with Niemeyer's vision but slightly modified without detracting from significance	Later additions in line with Niemeyer's design that do not impact those with exceptional and considerable significance	Later additions that are unrelated to Niemeyer's conception or design, but are not considered intrusive as it does not have any adverse impact on significance	Intrusive alterations damaging to significance. Alterations that interfere with the understanding of Niemeyer's design, or negatively impact the intended spatial configuration and/or viewsheds, etc.
Conservation Treatment	<p>Conservation, preservation, restoration, reconstruction (i.e. structures' exteriors/volumes)</p> <p>Adaptation and/or interpretation where significant layout, feature, or fabric are altered, missing or deteriorated (i.e. Structures' interiors)</p>		<p>Retain and conserve where possible.</p> <p>Adaptation and compatible alteration are possible.</p> <p>Replacement is only applicable to features with no significance (*)</p>		<p>Remove [] or selectively remove [S] intrusive features to reduce or mitigate adverse impacts on significance</p>

Definition of the levels of cultural significance and related general conservation treatment policy.

Source: Adapted from the Eames House CMP. Burke, et al., *Eames House Conservation Management Plan*, 114.

¹⁹⁶ Wiss, Janey, Elstner Associates, Inc.; Inskip and Gee Architects; and Sargent, *Conservation Management Plan*. Salk Institute for Biological Studies.

CHAPTER 3

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Component	Level of Significance	Sub-component/ Feature	Level of Significance
Manège Annex (currently Ticket/Guard Booth)	***	- Exterior - Interior	*** **
Secondary Entrance Structure	*	- Metal Gate - Concrete Structure	** *
Open-Air Theatre	***	- Ramp - Arch - Seating - Stage - Bowling Alley - Audiovisual booth	**** **** * **** ** Int []
Water Tower	****	- Exterior - Interior	**** ***
Bars (4)	****	- Exterior - Interior	**** **
Model Residence	****	- Exterior - Interior	**** ***
Housing Museum	****	- Exterior - Interior	**** ***
Collective Housing (now defunct Quality Inn)	Int	- Exterior - Interior - Additions - Outdoor pool	** * Int [] Int
Customs-Firehouse-Depots	****	- Exterior - Interior	**** ***
Administration	****	- Exterior - Interior	**** ***



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View from inside the Lebanon Pavilion towards the monumental entrance to the Open-Air Theatre with its ramp and Arch.

3.14.2 Fairground Built Landscape ***

Component	Level of Significance	Sub-component/ Feature	Level of Significance
Walkways <i>Niemeyer's design of the primary and secondary walkways, implemented in the 1970s, was modified in the 1990s thereby jeopardizing the significance of the original design.</i>	**	<ul style="list-style-type: none"> - Primary walkways <i>The curvilinear and the transversal paths</i> - Secondary walkways <i>Oblique walkways, later changed into orthogonal grid</i> - Other post-War walkways - Paving materials <ul style="list-style-type: none"> • Stone paving • Concrete pavers <i>Although original in concept, the current pavers overlay the original concrete pavers</i> 	<p>***</p> <p>[]</p> <p>*</p> <p>*</p> <p>[]</p> <p>*</p>
Reflecting Pools	****	<ul style="list-style-type: none"> - Post-War pools - Fountain nozzles 	<p>Int</p> <p>Int []</p>
Main Entrance Plaza/Car Park	****	<ul style="list-style-type: none"> - Light pole 	****
Underground spaces <i>Although designed by Niemeyer, these below-grade spaces do not have the same level of importance as the above-grade Niemeyer-designed structures as they were intended to be infrastructure support for the above-grade structures. However, they were given (****) as they fit the definition of (exceptional significance) given above in the levels of significance table.</i>	****	<ul style="list-style-type: none"> - Utility tunnels and spaces - Other underground spaces - Bomb shelters 	<p>****</p> <p>****</p> <p>****</p>
Site Boundary	*	<ul style="list-style-type: none"> - Metal Fence - Concrete Boundary Wall - Main Entrance <i>(Main Entrance Plaza)</i> - Secondary Entrance 	<p>**</p> <p>*</p> <p>****</p> <p>**</p>

3.14.3 Fairground Vegetated Landscape Int [S]

Although vegetation within RKIF sectors is not original to Oscar Niemeyer's design, the vegetation landscaping dating to 1997 has taken on significance as the "green lung" and "Central Park" of Tripoli, an oasis in the overdeveloped neighborhood that once was orange groves. For this reason, the treatment approach mitigates the negative impact on each component and sub-component of the initial design while considering the new value through selective removal.

Unlike the Fairground buildings, the Vegetated Landscape is divided into five components:

Component	Level of Significance	Sub-component/ Feature	Level of Significance
- Rest Sector	**		
- Cultural and Recreational Sector	Int [S]		
- Gardens	**	- Southeastern Garden	**
		- Northeastern Garden	**
- Vegetated Car Parks	**	- Southern Car Park	**
		- Eastern Car Park	**
		- Western Car Park: <i>This Car Park was not planted. Spontaneous vegetation should be removed.</i>	Int []
- Seaward Landscape: <i>Vegetation here is spontaneous with the exception of the pre-Niemeyer grove of palms, which should be retained.</i>	Int [S]	- Palm Grove	****
		- Spontaneous vegetation	Int []



CHAPTER 4

Conservation Policies

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CONSERVATION POLICIES

4.1 Introduction

The policies laid out in this chapter have been developed to articulate an overarching conservation approach to safeguard the cultural significance of the Rachid Karami International Fair. These policies have been developed based on a detailed assessment of RKIF’s cultural significance as part of its recent inscription as a World Heritage site in Lebanon. The detailed conservation policies that follow respond not only to the need to conserve and protect RKIF as a complex, including its buildings and landscape, but also take into account requirements that

must be derived to protect its significance and the management needs of its stakeholders. Its conservation is not only guided by the assessment of its significance but also on the observed vulnerabilities, its overall integrity, and its degree of authenticity. The below table recalls the general appropriate adopted approach to the conservation and treatment for RKIF’s main elements, components and sub-components (features) based on their level of cultural significance identified in detail in the last section of Chapter 3.

Level of Significance		Conservation Treatment
□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	****	Conservation, preservation, restoration, reconstruction (i.e. structures’ exteriors/volumes)
□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	***	Adaptation and/or interpretation where significant layout, feature, or fabric are altered, missing or deteriorated (i.e. structures’ interiors)
□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	**	Retain and conserve where possible. Adaptation and compatible alteration are possible.
□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	*	Replacement is only applicable to features with no significance (*)
□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	Int	Remove [] or selectively remove [S] intrusive features to reduce or mitigate adverse impacts on significance

Conservation treatment based on level of cultural significance. Refer to Chapter 3, Section 3.14 for the definition of levels of cultural significance and to Chapter 4, Section 4.2.3 for the exact definition of the mentioned conservation treatment terms.
Source: Adapted from the Eames House CMP.¹⁹⁷

¹⁹⁷ Burke, et al., *Eames House Conservation Management Plan*, 114.

The conservation policies also aim to establish a framework for more general recommendations to meet current and anticipated future needs and address issues of interest. A principal focus of the conservation policies proposed below is to guide and help manage future change to meet evolving needs of the communities that are part of the city of Tripoli.

Rather than preserving the complex as a museum site, RKIF has the potential to evolve into a vibrant complex that could have greater cohesion with the urban environment and the architectural diversity of Tripoli. This suggests that the policies for the future conservation of RKIF may need to identify areas where change may be appropriate. It is noted that the policy guidance included aligns with the charters and doctrinal text developed by the International Council of Monuments and Sites (ICOMOS) for the protection of cultural heritage.¹⁹⁸

As a masterwork of design and planning, RKIF, originally designed by Oscar Niemeyer, merits the highest level of stewardship in terms of its conservation and any rehabilitation treatment. The specific stewardship standards presented below form the basis for treatment recommendations and guidance included in the Conservation Management Plan.

4.2 Overarching Conservation Policies

The treatment recommendations and guidance are organized into conservation policies that are divided into sections for overarching policies that apply to the whole complex and to each of its main elements that include components and

sub-components (features) of the Fairground buildings as well as that of the landscape.

4.2.1 Treatment Approach

The conservation strategies presented throughout the Conservation Management Plan are envisioned to align with the guidance afforded by the Australia ICOMOS *Charter for the Conservation of Places of Cultural Significance (the Burra Charter)* for the *Treatment of Cultural Heritage Places*;¹⁹⁹ This also includes *Guidelines for the Treatment of Historic Landscapes*,²⁰⁰ an international standard for heritage resource stewardship, including its future conservation and maintenance.

The future conservation and development of the RKIF complex should be carried out in accordance with best-practice conservation principles not only included the *Burra Charter*, but also principles articulated in the ICOMOS *ISC20C Approaches for the Conservation of Twentieth-Century Cultural Heritage (Madrid-New Delhi Document, 2017)*.²⁰¹

Policy 1.

Understanding and applying these two documents (*the Burra Charter* and the *Madrid-New Delhi Document*) in full will support the authorities managing RKIF in performing their responsibilities for the conservation and protection of the place.

¹⁹⁸ Charters adopted by the General Assembly of ICOMOS, <https://www.icomos.org/en/resources/charters-and-texts> (accessed May 25, 2023).

¹⁹⁹ *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance*, <https://australia.icomos.org/wp-content/uploads/The-Burra-Charter-2013-Adopted-31.10.2013.pdf> (accessed May 25, 2023).

²⁰⁰ US National Park Service, *The Secretary of the Interior's Standards for the Treatment of Historic Properties. Guidelines for the Treatment of Cultural Landscapes*, <https://www.nps.gov/crps/tps/landscape-guidelines/> (accessed May 25, 2023).

²⁰¹ ICOMOS ISC20C, *Madrid-New Delhi Document: Approaches for the Conservation of Twentieth-Century Cultural Heritage*, https://isc20c.icomos.org/policy_items/madrid-new-delhi-doc/#:~:text=The%20final%20text%3A%20Approaches%20for,English%20for%20comment%20and%20discussion (accessed 23 May 2023).

4.2.2 Implications for Management

The policies and guidelines are aimed at conserving and managing heritage places of the 20th century, which is critical as part of a responsibility to conserve the significant cultural heritage of previous eras.

The guidelines seek to contribute to the appropriate and respectful management of this important period of cultural heritage. They are composed of approaches that seek not only to address issues associated with maintaining, repairing, and replacing historic materials, but also in making alterations that are sensitive to and compatible with the heritage place. It covers the full range of heritage typologies typically recognized as being worthy of conservation including its architecture, structures, its cultural and urban landscape. Together, they provide a framework and guidance for decision-making about work or changes to a historic property.²⁰²

Policy 2.

To ensure that standards and guidelines for concrete heritage management, conservation of historic buildings, and cultural landscapes are followed at the RKIF complex according to international best practices.

4.2.3 Conservation Principles for Treatment of the Complex Ensemble

The following principles of conservation should be observed when dealing with the stewardship, maintenance, repair, treatment, or alteration of the complex at the RKIF. It should be noted that it is imperative to reach a state of acceptable conservation in order to be removed from the List of World Heritage in Danger as part of the recommendations from the World Heritage Committee. Best practice conservation principles from the *Burra Charter* include:

- Conservation is based on respect for the existing fabric, use, associations, and

meanings. It requires a cautious approach of changing as much as necessary but as little as possible; avoid conjecture repair and restoration (Article 3);

- Conservation requires the retention of an appropriate setting. This includes retention of the visual and sensory setting, as well as the retention of spiritual and other cultural relationships that contribute to the cultural significance of the place;
- Conservation may, according to circumstance, include the processes of retention or reintroduction of a use; retention of associations and meanings; maintenance, preservation, restoration, reconstruction, adaptation, and interpretation; and will commonly include a combination of more than one of these;
- Conservation may also include retention of the contribution that related places and related objects make to the cultural significance of a place (Article 14);
- Maintenance is fundamental to conservation. Maintenance should be undertaken where fabric is of cultural significance and its maintenance is necessary to retain that cultural significance (Article 16);
- The impact of proposed changes, including incremental changes, on the cultural significance of a place should be assessed with reference to the statement of significance (Chapter 3, Section 3.13) and the policies for managing the place (Chapter 4). It may be necessary to modify proposed changes to better retain cultural significance. Existing fabric, use, associations and meanings should be adequately recorded before and after any changes are made to the place (Article 27).
- New construction, demolition, intrusions or other changes which would adversely affect the setting or relationships are not appropriate (Article 8).²⁰³

²⁰² Refer to Chapter 5 for further management guidelines and discussion on a management structure and plan for RKIF.

²⁰³ *Burra Charter* (2013).

The *Madrid-New Delhi Document* outlines that sound conservation practice will include the following:

- Identification and assessment of cultural significance, so policies are directed to conserve what is important;
- Application of appropriate conservation planning and management methodology to assess cultural significance and provide policies to retain and respect it prior to commencing work;
- Research the technical and planning aspects of the site to develop specific repair methods to the unique building materials and construction techniques therein;
- Development of policies to conserve significance;
- Acknowledgment and management of pressure for change, which is constant;
- Management of change sensitively to conserve cultural significance- in conjunction with material fabric;
- Ensuring a respectful approach to additions and interventions;
- Recognizing when use contributes to significance and manage accordingly;
- Respecting the authenticity and integrity of the place and site;
- Considering environmental sustainability;
- Promoting and celebrating twentieth-century cultural heritage with the wider community.²⁰⁴

In addition, it should be noted that treatment approaches are categorized and defined as follows. The terms below are referenced and defined in the *Burra Charter* and also defined in *The US Secretary of the Interior's Standards for the Treatment of Historic Properties*:²⁰⁵

- **Adaptation** means modifying a place to suit proposed compatible uses.
- **Compatible** means a use that involves no change to the culturally significant fabric, changes that are mainly reversible, or changes with minimal impact.
- **Conservation** is the process of looking after a place to retain its cultural significance. It may include preservation, restoration, reconstruction, or adaptation – see below.
- **Cultural Significance** includes historic, scientific, aesthetic and social values for past, present and future generations.
- **Maintenance** is the act of keeping property or equipment continuously in good condition – it is distinguished from making repairs, and/or correcting problems.
- **Preservation** is defined as the act or process of applying measures necessary to sustain the existing form, integrity, and materials of an historic property. Work, including preliminary measures to protect and stabilize the property, generally focuses upon the ongoing maintenance and repair of historic materials and features rather than extensive replacement and new construction.
The limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a preservation project. However, new exterior additions are not within the scope of this treatment. The *Standards for Preservation* require retention of the greatest amount of historic fabric along with the building's historic form.
- **Rehabilitation** is defined as the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values. The *Rehabilitation Standards* acknowledge the need to alter or add to a historic building to meet continuing or new uses while retaining the building's historic character.

²⁰⁴ *Madrid-New Delhi Document* (2017).

²⁰⁵ These standards are the nationally recognized tools that guide historic preservation in the United States.

- **Restoration** is defined as the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and reconstruction of missing features from the restoration period. The limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a restoration project. The *Restoration Standards* allow for the depiction of a building at a particular time in its history by preserving materials, features, finishes, and spaces from its period of significance and removing those from other periods.
- **Reconstruction** is defined as the act or process of depicting, by means of new construction, the form, features, and detailing of a non-surviving site, landscape, building, structure, or object for the purpose of replicating its appearance at a specific period of time and in its historic location. The *Reconstruction Standards* establish a limited framework for recreating a vanished or non-surviving building with new materials, primarily for interpretive purposes.



The view from the Grand Cover towards the Cultural and Recreational Sector has been blocked by scattered trees.

Source: Roman Deceker, *An eye-shaped opening in the boomerang-shaped Main Exhibition Space at the Rashid Karami International Fair in Tripoli, Lebanon*, (October 14, 2018), https://commons.wikimedia.org/wiki/File:TripoliLebanonFair_OscarNiemeyer_MainExhibitionHallExtension3-RomanDeceker14102018.jpg (accessed March 10, 2024).

© Roman Deceker/Wikimedia.com

Policy 3.

To preserve Niemeyer's vision for openness of the whole site and complex to the city spatially, visually and programmatically, while considering the current community needs and aspirations as well as the new status of the site as World Heritage. The open spaces of RKIF should eventually become freely accessible to all citizens as a public space for the city as well as to all visitors given its World Heritage status, once the structures have been made safe.

Policy 4.

To uphold the principle of sustainable development related to the stewardship and future resiliency of the Fair's landscape.

Policy 5.

To maintain and respect each building's initial connection with the surrounding structures and spaces of RKIF through the recovery of original pathways and viewsheds within a framework of the landscape management plan (Policies 3 and 158).

4.2.4 Repair and Maintenance

Routine and prompt cyclical maintenance and repair are the single most important actions of a conservation program. RKIF should be cared for by a planned and detailed maintenance and repair program (maintenance plan); this is based upon an in-depth knowledge of each building, its surrounding setting, landscape as well as its materials and physical condition, with regular inspection, and prompt preventative maintenance and repair along with its associated landscape. Any large site needs to also guard against reducing standards of management and deferral of repair and maintenance.

The existing management system of RKIF is to be complimented, considering that it is apparent that much of the knowledge and resources are not in place. Additional pressure is exerted as the complex itself has become an international landmark for visiting architects and tourists alike. However, it is the aggregation of minor alterations that detract from the integrity and the presentation of the complex; in some cases, open public areas are downgraded as a result of a lack of periodic maintenance and care. A continuing regime of maintenance and repair is vital. Damage is occurring to the building complex, and thus a damage-limitation strategy is necessary to respond to known threats to the

concrete, any mechanical damage, etc. The development of conservation methods for the various modern building materials and surfaces, together with other treatments that are generally necessary because of deterioration, is paramount to prolonging the life of the complex and its building materials. Developing a conservation maintenance plan and implementation strategy to address immediate issues related to the decline, wear, decay, or damage of the RKIF landscape and its character-defining features is as important as addressing the structures. The methods and treatments can be compiled into a maintenance plan. Such an approach also entails appropriate maintenance operations, frequency, program, and costs.



Status of the underground shelters. Most of the structures suffer from flooding and water stagnation.

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Policy 6.

To carry out a full comprehensive assessment of each building in the complex. Each assessment shall include a full structural evaluation to understand, verify, physically document the structural system that was used to construct each building.

Policy 7.

To carry out photographic documentation of the materials and conditions of each building of the complex, which includes the external concrete finishes, steel, brick, glass, tile, and interior finishes. Photographic documentation should be carried out annually for the first five years, and then every five years thereafter. It is noted that any emergency or “at-risk” items should be documented more regularly to help monitor their rates of deterioration. This documentation should inform any testing for remedial action (present and future) as outlined in Policy 16.

Policy 8.

To document concrete surfaces for both exterior and interior that are unique to each building (as indicated in Policy 7) and retained as part of the overall and continued conservation program of the complex and site. Concrete surfaces should be conserved based on finish analyses, and a highest degree of integrity of surviving and any remaining material fabric.

Policy 9.

To evaluate and document surviving evidence of the Civil War throughout the complex and at each structure so that the level of conservation and/or interpretation can be determined.

Policy 10.

To evaluate all interventions throughout the complex that have occurred after the Niemeyer original design. All post-Niemeyer interventions, including any additional designs to address safety or functional issues, should be thoroughly assessed in order to understand their impact and whether mitigation of earlier rehabilitation programs should be undertaken.



The Grand Cover's waterproofing membrane is in poor condition and has outlived its service life. Waterproofing membranes degrade in UV and require periodic replacement every 20-25 years.

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Policy 11.

To develop and implement a program for immediate stabilization to make the site and its buildings safe. Implementation of said program should be carried out to address all safety concerns as required; the stabilization or 'make-safe' program should not only address safety concerns, but also assess the extent of potential damage, and to repair it so that it also maintains the significance of the place.

Policy 12.

To mitigate any threats of water infiltration into the buildings and underground shelters and tunnels. Consideration should be given to providing new waterproofing-membrane systems over each roof structure while maintaining the integrity of each building.²⁰⁶

Policy 13.

To retain and conserve each building's character-defining features; consider retention and enhancement of all surviving character-defining features and in some cases, potentially reinstate them.

Policy 14.

To reinstate interior material finishes *i.e.* marble, linoleum or mosaic floors or original paint in structures where evidence of original implementation exists (e.g. the Lebanon Pavilion). Replacement with compatible alternative materials is possible based on sound justification.

Policy 15.

To develop and adhere to a detailed and long-term planned maintenance strategy or maintenance plan for the structures as well as the associated softscapes and hardscapes.



Status of the northern half of the Grand Cover. Evidence of staining on the soffit is indicative of water passing through the slab due to lack of maintenance of the waterproofing membrane; this results in rebar corrosion and concrete spalling.

²⁰⁶ Waterproofing membranes typically have a service life of 20-25 years.

Policy 16.

To develop and implement a comprehensive trial strategy of the decay mechanisms affecting the concrete, steel, brick, concrete block, and other material surfaces to mitigate further damage and to inform the maintenance plan. The consequences of remedial treatments necessary to retard the degradation of the materials (concrete, steel, brick, and concrete-block surfaces) should be well understood and fully tested before use.

Policy 17.

To formulate appropriate and consistent cleaning, repair, and maintenance standards with all stakeholders and to coordinate and implement a long-term maintenance program.

Policy 18.

To carry out any remedial work on concrete, brick, concrete block, and other surfaces in such a way that visual continuity with the original surface is retained; for example, any concrete repair work designed to achieve this should be executed with quality and precision. As well as affording protection, treatments should match the color, texture, and finish for any remaining original adjacent materials.

Policy 19.

To ensure that concrete repair work is included as a part of continued maintenance of each structure and surrounding pool; ensure that protocols for concrete maintenance-repair work are included as a part of stewardship for all the structures and built landscape features across the complex.

Policy 20.

To restore the pool surrounding each building or pavilion in order to retain the building's reflection in still water. The relationship and connection of each building and pavilion with the surrounding reflecting pool should always be maintained.

4.2.5 Treatment of Intrusive Elements

A number of items have been identified as intrusive (refer to Chapter 3, Section 3.14); the treatment of each will depend on the mitigation of any negative impact, its condition, and significance. For instance, the planted post-Civil War landscape has been identified as intrusive to Niemeyer's original landscape design. However, as a living landscape of trees and shrubs, mature conifers and palms, it has evolved to become a 'beautiful' garden that is much appreciated by Tripolitans. In this particular case, a mitigation strategy is needed to reduce the impact of the planted landscape on the initial conception of Niemeyer, while retaining Tripolitans' enjoyment of this open and green space.

Policy 21.

To mitigate the impact and/or remove items and additions identified as intrusive in this Conservation Management Plan. Prioritization and a time-based program for the removal or modification of intrusive elements should be established and incorporated into any program of work.



Back (left) and front (right) view of a room added under the Grand Cover during the early 1990s to be used by soldiers. Today, this room is still being used by RKIF workers to store gardening tools.

4.2.6 The Role of Heritage Conservation Professionals

The Conservation Management Plan is intended to guide the future stewardship and development of RKIF. However, the CMP will need to be interpreted and implemented by persons with the relevant technical and conservation-based expertise. As such, conservation technical advice is needed and where work is required to be carried out, it is important to utilize consultants and professionals with proven international expertise and experience in these relevant fields.

A low contract bid that may appear satisfactory can have an outcome in the degradation of cultural significance, including the unifying character of the complex as well as the quality of the historic concrete material fabric for each structure. It is equally important to select qualified contractors with expertise in the specific materials conservation and restoration.

Continuity of relevant and experienced conservation advice should be provided to ensure that all work on RKIF is compatible with its cultural significance. For RKIF, this can be achieved through the establishment of a dedicated conservation management (or scientific) committee, made of a multidisciplinary team of recognized experts whose role is to provide expert advice to RKIF's Administrative Board and the Ministry of Culture, monitor and overlook the implementation of the CMP policies and conservation projects, and support official decision-making.

This committee can also support the World Heritage periodic reporting and the implementation of the World Heritage Committee decisions.

Policy 22.

To designate an independent conservation management team whose responsibility is to oversee the implementation of this CMP and the future conservation program of RKIF.

Policy 23.

To make decisions and carry out all the stewardship, maintenance and/or alterations in the light of expert advice from professionals and consultants experienced in the conservation of buildings and cultural landscapes while also employing experienced contractors.

Policy 24.

To employ only persons qualified and experienced in treating the relevant material (concrete, steel, glass, tile, brick, etc.) and in managing RKIF's planted landscape (horticulture expert) per international standards and practice.



RKIF plan showing the Fairground buildings by sector.

4.3 Specific Conservation Policies

There is no doubt, as explained in the previous chapter, that the significance of RKIF lies in its totality as a complex made of specially designed buildings connected through open spaces, walkways and green landscape. There is also the hierarchy of buildings in terms of importance in relation to function, position, and the like. However, for the purpose of defining this policy framework and to ensure a balanced and objective approach, the RKIF complex is divided into two main elements, the Fairground buildings and the landscape. In turn, the Fairground buildings are broken down into components – these are the different sectors - that are divided into sub-components and their respective character-defining features. Integrity, authenticity as well as the attributes that make these resources significant are evaluated, then the policies are drafted in accordance with the level

of significance of each element, component, and feature, while taking its condition and state of conservation into consideration.

4.3.1 The Fairground Buildings****

4.3.1.1 Rest Sector****

The Rest Sector is located in the southeast corner of the RKIF complex and is defined by the surrounding perimeters of the following Niemeyer-designed structures and elements with reference to the Plaza as a main entrance to the complex; the Ticket Booth, the Entrance Portico and Reception Centre, and the Guest House including the later addition of the Guard Room at the main entrance (see RKIF plan on opposite page showing the buildings of the Rest Sector).



General view of the Rest Sector looking southwest, showing the sunken Ticket Booth in the foreground within the Main Entrance Plaza and the Entrance Portico and the Reception/ current Administration Buildin in the background.

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Ticket Booth*****Exterior ******Interior ****

The Ticket Booth is located east of the Main Entrance Plaza, just before (or east of) the Entrance Portico and Reception Centre. It is primarily a below-grade structure covered by reinforced-concrete roof slab, which extends above the surrounding pavement. The roof slab is exposed concrete, and the underside has a board-form finish. The facade of the Ticket Booth has exposed concrete and brick-masonry walls, with slotted ticket windows. The Ticket Booth is accessed from the Main Entrance Plaza; sometimes accessing this booth is not possible due to flooding.



Left Main facade of the Ticket Booth, showing its current condition, looking northeast.

Right Interior view of the Ticket Booth.



Board-formed exposed concrete wall at the Ticket Booth. This exposed concrete finish along with the brick cladding of the exterior are among the main attributes that define the character of this structure and need to be retained.

Significance, Survival, Vulnerabilities

The Ticket Booth is currently not in use and exhibits concrete and brick-masonry deterioration in numerous locations, likely resulting from water leakage from above and flooding of the recessed structure, possibly due to blocked drainage, and its location below the surrounding paving level. Despite falling into a state of disuse, its architectural significance remains given that evidence of its original design is intact as well as its relationship as a below-grade structure and its configuration with the surrounding pavement.

Significant areas of concrete delamination and spalls are present, as well as water leakage through the roof structure as evidenced by water staining. Prior repairs along roof joints were observed, apparently performed in an effort to mitigate water infiltration. At spalled areas of the concrete roof, corroding reinforcing steel is exposed. Areas of prior concrete repairs appear to be delaminated. Deteriorated areas of brick-masonry delamination and loose mortar were also observed.

Policy 25.

To retain the significance of the Ticket Booth structure, repair the water management and drainage of the below-grade structure, and to repair the building and retain as much of its material fabric including the reinstatement of the entry.

Policy 26.

To refrain from planning or designing any additions or alterations to the Ticket Booth or in and around the surrounding spaces in the Main Entrance Plaza (with the exception of light temporary installations during specific events in the Main Entrance Plaza). Any adaptations to the interior of the Ticket Booth must service a new compatible function (e.g. information center or gallery) so as to maintain its significance and configuration.



Impact of water leakage from the roof of the Ticket Booth over a long period of time forming a kind of stalactites and stalagmites.



The Ticket Booth flooded with water after heavy rain on December 27, 2023.

Entrance Portico and Reception Centre (current RKIF Administration) ****

Près de l'accès principal se situent le Portique d'entrée, le Centre d'accueil avec ses salons de séjour, restaurant, toilettes, coiffeurs, salons de beauté, etc..., destinés au repos des visiteurs, lequel portique, par ses proportions et l'ampleur de ses travées, exprime l'architecture contemporaine que nous aimons voir liée à l'architecture traditionnelle locale.²⁰⁷

**Entrance Portico ******

Entry ramp **** Canopy ****

The Entrance Portico and its canopy are composed of a concrete slab that sits atop a series of twelve columns, which accentuate a monumental approach to the Fair through the ramp access with sweeping views as an elevated viewing platform of the complex from the ramp and concrete bridges. The facade of the Reception Centre, under the Entrance Portico, remains largely unchanged and consists of a series of cast-in-place arched reinforced concrete with a recessed glass curtain wall. The entire Reception Centre is covered by the large concrete canopy of the Entrance Portico, which cantilevers over the main level of the building.



View of the Entrance Portico as seen from the Main Entrance Plaza.

Reception Centre**(current RKIF Administration) *****

Exterior **** 1996-1998 interior *

Aluminum windows **

The original interior was designed as the Reception Centre for RKIF. It was later modified as part of a rehabilitation program to use the structure as the administrative offices for RKIF.

The building consists of two levels whose interiors have been largely modified and do not retain their original layout. The ground-floor level incorporates a series of lightweight partitions that divide the once open space and the basement has been significantly altered with a new design; the central space has been reconfigured into a circular volume that breaks through the upper floor with colored marble flooring (instead of the original white) used throughout. From the entrance, a foyer leads down to the basement level, which includes offices, a conference room, a 100-seat auditorium, and restrooms. The basement level perimeter is surrounded by adjacent exterior reflecting pools that span under the Plaza to the end of the entrance drive.



View of the Entrance Ramp and Main Entrance Plaza as seen from the Reception Centre under the Entrance Portico.

²⁰⁷ Excerpt from Niemeyer's description of the Entrance Portico and Reception Centre, August 8, 1962. [Near the main entrance are the Entrance Portico and the Guest House with its reception halls, restaurants, toilets, hairdressers, beauty shop, etc., intended for the rest of visitors. The Portico, with its proportions and the extent of its spans, expresses the contemporary architecture that we like to see linked to local traditional architecture.] Oscar Niemeyer, "Mémoire Descriptif du Projet de la Foire Internationale et Permanente du Liban à Tripoli," in Foire Internationale et Permanente du Liban à Tripoli (Beirut: Conseil Exécutif des Grands Projets, 1963).



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Left View of the Reception Centre under the Entrance Portico with its reflecting pool to the right as seen from the Main Entrance Ramp.

Right View towards the entrance of the Reception Centre located under the canopy of the Entrance Portico.

Significance, Survival, Vulnerabilities

The Entrance Portico and Reception Centre structures are considered both a gateway to the Fairground and provide programmatic services not only as a reception area but as a central point for control of tourist/visitor services and information about the Fair. Although the function of the Reception Centre was modified to become the central Administration of RKIF, together, the Entrance Portico and the Reception Centre remain a monumental building form that is in keeping with Niemeyer's original architectural concept for a visitor center with a principal point of entry. The arcaded elevation is similar to Niemeyer's Ministry of Justice (1962) in Brasília, Brazil and designed that same year.

The underside and sides of the concrete bridge were observed to have areas of loose and delaminated concrete that should be removed. The bridge should undergo further structural investigation to determine the repair work required. The areas of deteriorated concrete along the underside of the bridge overpasses, ramps, and Plaza perimeter edges also exhibit

exposed corroded reinforcing steel; some of these larger areas of loose and unsound concrete are potentially in danger of falling and should be removed. Large areas of the underside of the Entrance Portico roof slab were observed to exhibit efflorescence and water staining, indicating water leakage through the roof. The conditions of the reflecting pool structure at the basement and the upper roof require further investigation to understand necessary repairs, including conditions at the perimeter edge of the concrete reflecting pools and whether there is a protective coating or waterproofing present. Efflorescence along the pool interfaces with the Main Entrance Plaza and building indicate that water infiltration is occurring through these areas, which most likely do not have any protection or waterproofing (or have protection or waterproofing that has deteriorated). Overall, concrete deterioration at the Entrance Portico bridge appears to be related to corrosion of embedded steel reinforcing bars, and possibly loading damage from heavy vehicular use.

Left Status of the underside of the Entry Ramp, showing signs of concrete efflorescence.

Right The underside of the Entry Ramp showing loose and detached pieces of concrete.



© UNESCO/Paul Gaudette, 2019



© UNESCO/leva Saudargaitė, 2023

Policy 27.

To retain the significance of the Entrance Portico as a monumental entrance into the complex with its adjacent reflecting pools, and bridges/ramps.

Policy 28.

To maintain the glass cube design and perimeter recessed curtain wall of the Reception Centre, as originally intended by Niemeyer. To retain the rectangular facade and its composition of the roof structure as well as the perimeter concrete columns, as part of the overall large rectangular volume and entry reception into the Fairground.

Policy 29.

To monitor further modifications to the interior of the structure and refrain from amending the overall original plan and elevations.

Policy 30.

To refrain from planning or designing any additions around, under, or to the Entrance Portico; to refrain from designing permanent additions to the structure that were not envisioned by Niemeyer.

Policy 31.

To repair and maintain the concrete ramps, reflecting pools, and paved areas and to waterproof (in a manner that is non-intrusive to the historic appearance) those areas so that water infiltration is mitigated into the building structure. To remove the water fountains/nozzles from the reflecting pools.

Policy 32.

To restrict vehicular traffic on the bridge and concrete ramps until a structural assessment has been performed and recommended repairs are executed.

Policy 33.

To retain and protect the adjacent palm grove.

Policy 34.

To consider returning the Reception Centre to its original interior plan (if a major repurposing is scheduled in the future), including interior finishes as originally intended. To consider the resolution of the original two-level building structure in its entirety, as well as the overall interior geometric open plan.

Guest House (Minjara) ***

Exterior ****

2018 interior ***

Non-rehabilitated interiors ****

Overall, after years of abandonment, the Guest House was rehabilitated with an adaptive reuse program and was in use until early 2024; the newly rehabilitated space at the Guest House was inaugurated in 2018. The project was named *Minjara* and in contrast to other buildings at the Fair, the Guest House space served as a meeting place and workshop for suppliers, producers, designers and craftsmen of furniture, a well-known and famed industry of Tripoli. While the ground floor was mainly used by *Minjara*, there are additional areas throughout the main and lower floors of the Guest House that are still not in use and await rehabilitation.

The Guest House consists of two levels and is constructed of reinforced concrete. The concrete roof beams have a board-formed finish; the beams extend horizontally along north-south and east-west axes. The roof beams are exposed along the roof edges at the north and south elevations. The facade walls are a smooth concrete finish with no articulated

window openings. There is a main spine wall, including some rear perimeter walls throughout the building, that have an exposed stone finish. In the newly renovated space, the building plan consists of offices along the east side of the structure and includes an open-air garden. Concrete roof beams also extend over the large open garden area that is surrounded by operable metal-frame-and-glass-panel walls, which allow light and air into the interior.

Most of the exposed concrete components throughout the building were coated as part of the recent repair work and rehabilitation program. Perimeter spaces of the main floor also consist of guest rooms, each equipped with an ensuite bathroom and private garden. While these perimeter spaces were not included as part of the recent rehabilitation, they were observed to have areas of decay and concrete deterioration most likely due to corrosion of embedded reinforcing as well as remaining areas of water infiltration from the roof.



Front (above) and back (below) view of the Guest House after its rehabilitation.



The rehabilitated interior of the Guest House/Minjara.

© UNESCO/Mariam Zgheib, 2019

Significance, Survival, Vulnerabilities

The Guest House and its rectangular form and composition volumetrically remain per the original design. The building plan endures and consists of two floors. Given that the guest rooms of the Guest House remain open to the exterior elements, vegetation has grown and exists in numerous perimeter spaces and at the lower floor. These areas of the interior of the building are exposed to the elements and are in a state of decay due to abandonment. Of note, the basement level apparently floods on a recurring basis.

The Guest House rehabilitation was initially funded by the development and aid agency, Expertise France, and the adaptive reuse design was carried out by East Architecture; the new building program was inaugurated in 2018. The rehabilitation program allowed for the building to be transformed into a new design platform and production facility. As part of the reuse program, all of the improvements were in keeping with the original design by Niemeyer as the recent intervention is completely reversible so that the use of the space can remain flexible and accommodate change in the future. It recently received the 2022 Aga Khan Award for Architecture.



© Oscar Niemeyer Foundation Archives*

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Status of one of the non-rehabilitated part of the Guest House. This area exhibits peeling paint, graffiti, and damage from removal of finishes.

Left corner Plan of the ground floor of the Guest House as designed by Niemeyer, showing the non-rehabilitated guest rooms to the left of the plan.



Status of one of the non-rehabilitated guest rooms (left) along with its loggia (right) at the Guest House. Finishes are damaged and the small gardens at the edge of each guest room are totally overgrown.

Policy 35.

To retain the significant features of the Guest House including the large open rectangular volumes and spaces. The Guest House and its open plan with interior-facing gardens and courtyards should be maintained as they are integral to the interpretation and function of the Guest House and its surroundings.

Policy 36.

To maintain the overall geometry of the Guest House and its spatial relation to the Model Residence and Collective Housing as a unique grouping of buildings with more privacy at the far end of the site as intended by Niemeyer for the Fair.

Policy 37.

To reinstate the lower story, guest rooms and perimeter gardens in the Guest House including their integration with the perimeter spaces of the building. To reinstate the original open spaces within the different units including original floor plans; reinstate concrete walls, exposed natural stone walls, including glass window walls as needed, including exposed beams of the roof geometry as part of the original design of the Guest House.

Policy 38.

To avoid modifications or any permanent additions to the Guest House that alter the rectangular shape and geometric form as part of the character-defining features as a large organic singular volume. To avoid inappropriate changes or alterations that may be permanent to the building and its space as part of its interim and future uses.

Policy 39.

To respect the garden courtyard areas around the center and perimeter guest rooms based on the intended floor plan and layout.

Guard Room (Main Entrance) **

Exterior ** Interior *

The Guard Room, similar to the surrounding perimeter concrete fence of the complex, was reportedly not designed until the mid-1970s and was not included as part of Niemeyer's original design of RKIF. Based on Niemeyer's consultation with architect Georges Doumani, the discussion of the design and construction of a Guard Room, in addition to the perimeter concrete fence of the complex, was being considered in 1972.²⁰⁸ It is noted that despite Niemeyer's general disapproval, it is likely that he accepted the idea of a Guard Room (as a light transparent

construction) and fence based on the needs of the complex and the architect's presented justifications. Based on the evaluation of the existing fabric and its design, it is most likely that the Guard Room was designed and built by the *Conseil Exécutif des Grands Project (CEGP)* along with the site fence during the 1980s.

Significance, Survival, Vulnerabilities

The Guard Room is currently in use at the Fair and is generally intact. It is used as a security post prior to entering the Fair complex.



The Guard Room at the Main Entrance to the Fair's Plaza.

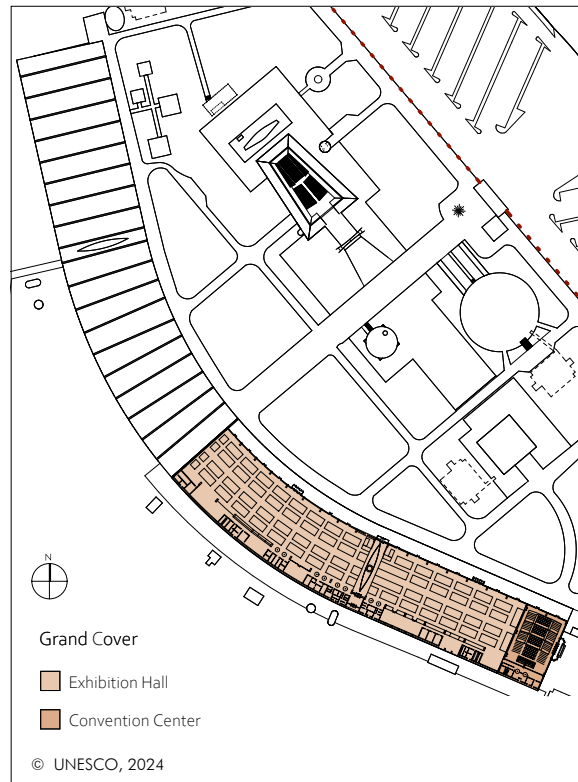
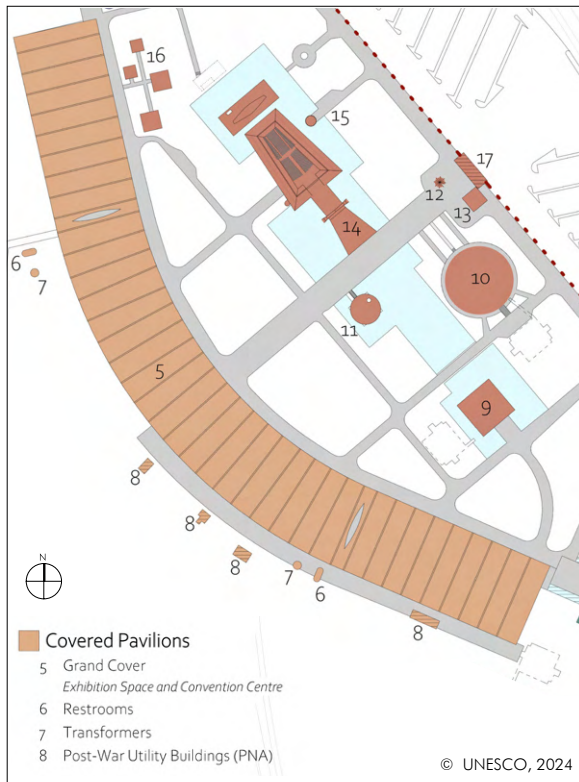
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Policy 40.

The Guard Room should be maintained with its current function as part of the main entrance to the Fair. Any alterations or replacement should consider Niemeyer's original recommended design for a light construction.²⁰⁹

²⁰⁸ Georges Doumani, "Mission à Paris: Consultations avec M. Oscar Niemeyer sur des problèmes de la Foire de Tripoli" [Mission to Paris: Consultations with Mr. Oscar Niemeyer on the issues of the Tripoli Fair] Report submitted to CEGP (February 1972).

²⁰⁹ Any consideration of alternations or replacement should be part of the future RKIF master plan or a design competition for the reconsideration of the whole perimeter of the site and should maintain Niemeyer's intended design for the structure as a light construction. Refer to specific recommendations on Future Development and Use of the Fair in Chapter 5, Section 5.3.



Left Detailed view of RKIF's plan, showing the buildings of the Covered Pavilions.
Right Detailed view of the Grand Cover, showing the functions under its rehabilitated part.

3.3.1.2 Covered Pavilions ****

Grand Cover (Main Exhibition Space) ***

1997-1998 infill exhibition Int [] Unrestored portion of the Grand Cover ****
Precast roof edge * External roof lighting Int []

Niemeyer designed the Grand Cover to float above national pavilions and conceptually across the original layout of the complex. The dramatic architecture of the Grand Cover was achieved through technological innovation using post-tensioned structural concrete. The Grand Cover faces and orients the complex toward the old city of Tripoli.²¹⁰

Niemeyer intended the Grand Cover to host and unify all national pavilions. He considered this aspect of his design to be a valuable contribution to Lebanon, especially in terms of its novel approach when compared to the design of fairs historically and internationally.

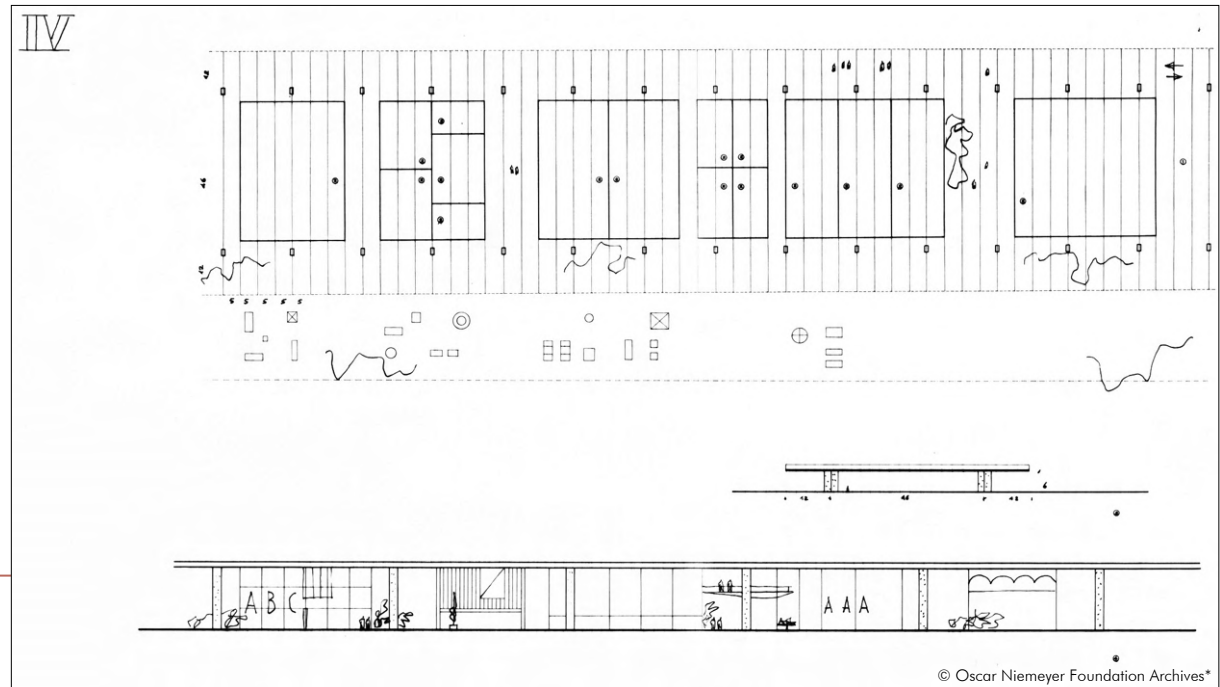
Unlike the conventional way of building an individual pavilion for each country, a series of lightweight structures would act as pavilions, constructed between recessed pillars under the Grand Cover. Niemeyer originally intended these lightweight structures not only to serve as individual pavilions, but their design, respectively, could reach up vertically to the top of the ceiling of the Grand Cover.²¹¹ The curvilinear design with sweeping roof-edge profiles along the Grand Cover at both the front and the rear were originally intended to be refined linear elements aesthetically; the linear edge profile and height aligned closer to its original form and construction in terms of exposing the roof-edge and beam-end building elements.

²¹⁰ The Grand Cover was intended to be a sweeping element and initially connected the site through its orientation towards the seashore and Niemeyer's newly proposed residential and commercial quarter.

²¹¹ Refer to Niemeyer sketches and album in Chapter 2, pages 32-33.

In 1970, shortly after construction, the design of the edge of roof and beam elements was modified with the addition of a precast concrete horizontal band that included a board-formed finish; this altered the intended design of the roof edge.²¹² The added outer precast element was meant to

hide imperfections in the cast-in-place slab and beam edges; however, the addition of the precast concrete band increased the height of the roof edge and also partially concealed the exposed ends of the roof's main beams along the front and rear of the Grand Cover.



²¹² Rizk, "La Foire Internationale du Liban à Tripoli. Rapport Définitif sur la Mission No. 624."



The rehabilitated southern part of the Grand Cover. Notice the added suspended lighting fixtures in the outdoor cantilevered ceiling, as well as the concrete benches, trash bins, and planters in front of the Grand Cover.

Significance, Survival, Vulnerabilities

The Grand Cover is of outstanding cultural significance as a great work of architecture that also represents a critical component and function of RKIF. The flexibility of the design of the space under the Grand Cover allows individual lightweight pavilions and partitionable exhibition spaces. The Grand Cover's partially rehabilitated half served as an exhibition hall for several regional and national exhibitions between 1994 and 1998, and continues to operate partially as the main exhibition space for local and national exhibitions and partially as a convention center that hosts most of the big events taking place in Tripoli and its vicinity.

The Grand Cover has varying levels of completion with some areas incorporating a finished floor slab and the remaining areas exposed to soil conditions. Cast-in-place concrete including a thin layer of finishing mortar covers the roof edge and the exposed ends of the main roof beams. The area of the roof above the rehabilitated exhibition space was covered with roofing that appears to have been more recently installed; it is approaching the end of its service life. In addition to the waterproofing

membrane applied to this part of the roof, repairs to architectural concrete elements have been undertaken using concrete patches and coating applications. Other modifications include installation of an exposed electrical lighting layout, and covering of the slab that was installed at grade.

Given its monumental scale and age, the Grand Cover survives largely intact; however, some changes of details over time have diminished the integrity of its historic appearance. In 1997 and 1998, alterations were carried out that significantly transformed the original design of the southern half of the Grand Cover, mainly the introduction of the enclosure that houses the convention center and the exhibition space. This enclosure combines the use of transparent and opaque separators, hence, contradicts the original intended design detailing.

On the concave elevation of the Grand Cover (facing the Cultural and Recreational Sector), aluminum frames with glass infill were installed that align with the external short side of the original rectangular pillars; also, one of the two original openings in the roof of the Grand Cover

was glazed over with a skylight. A new structure in reinforced concrete and exposed concrete blocks was also added to the convex elevation; however, it is not recessed from the convex side as intended by Niemeyer.

The original lighting was composed of a subtle system of recessed spotlights highlighting the expression of fluidity of the building; however, suspended lighting fixtures have replaced original lighting elements, altering the visual continuity of the cantilever structure as designed by Niemeyer.

The addition of the precast concrete band using a reverse L-shape on the vertical side of the cantilevered surface, seems to have played a role in possibly concealing underlying imperfections of the original structure. For example, missing and sagging sections of the precast concrete

band exhibit underlying signs of corroded steel and areas of red oxide metal primer. The precast concrete band reportedly played a role in protecting the waterproofing at areas of the base flashing installed in 1994.

Current distress conditions include cracked and delaminated concrete at the precast concrete band, which were added to the roof structure and of the main beams above the roof level. There are also several collapsed precast concrete panels, collapsed areas of the roof, in addition to spalled original concrete with underlying exposed corroded reinforcing bars. Much of the ground level below the unrehabilitated part of the Grand Cover is dirt with no concrete slab. The board-formed ceiling of the Grand Cover also shows signs of deterioration.



Right The current exhibition space under the Grand Cover showing the glazed skylight within the roof opening.

Left The same skylight within the unrehabilitated part of the Grand Cover.

© UNESCO/Maya Hmeidani, 2019



© UNESCO/Maya Hmeidani, 2024

Policy 41.

To recognize that the Grand Cover is a work of technological innovation in concrete construction of this era and that it unites with the buildings of the complex and has an outward connection with the Cultural and Recreational Sector and to the city of Tripoli.

Policy 42.

To maintain the Grand Cover as one of the iconic spaces of RKIF and recognize the Grand Cover as representative of RKIF, a role that has been maintained over time through its use and iterative adaptation (for example, as the grand exhibition space of the complex).

Policy 43.

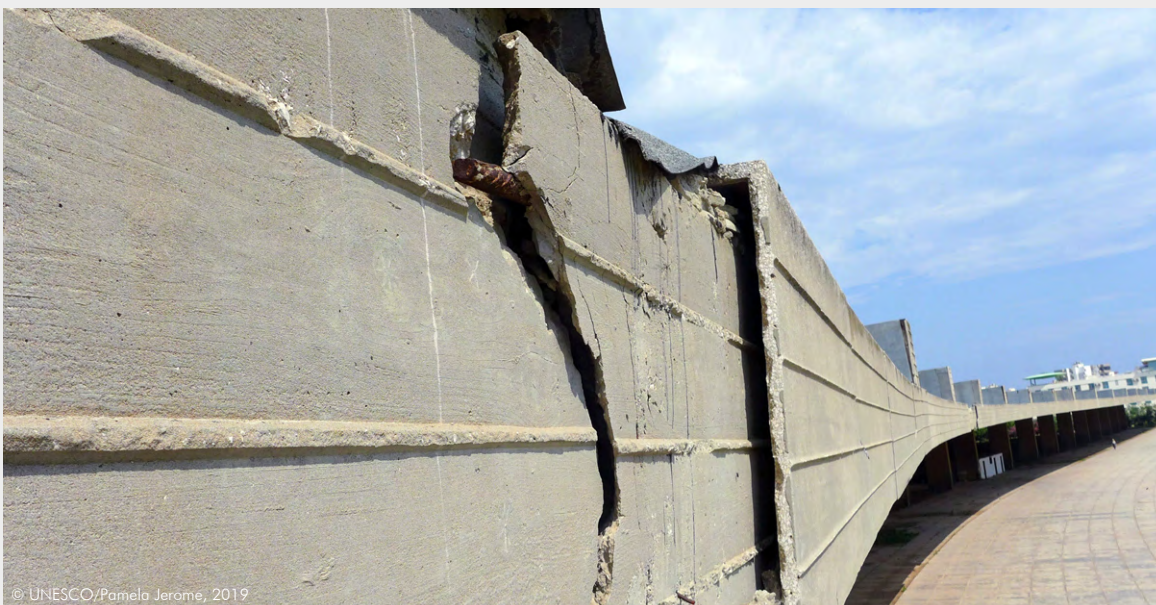
To maintain the overall original design of recessed volumes as part of the concave and convex geometries of the Grand Cover; the short sides along the east and west edges should also retain open space as originally intended by Niemeyer.²¹³

Policy 44.

To recognize that the Grand Cover was planned as a partitionable space for exhibitions. Should other uses be proposed and introduced, the new scheme should be carefully planned to align with the design principles as intended by Niemeyer. To maintain a flexible functionality of the space under the Grand Cover including the recessed individual pavilions.

Policy 45.

To restore the original design of the original concave and convex facades, thus ensuring that the current aluminum-and-glass wall and the opaque split-face concrete block wall with added concrete columns and beams are seen as a temporary measure to enclose the space but do not remain as a permanent part of the building.



© UNESCO/Pariela Jérôme, 2019

The precast-concrete fascia at the vertical face of the cantilever surface of the Grand Cover. Note original underlying concrete surface, which is cracked, including exposed rebar.

²¹³ Consider the installation of recessed discrete volumes of reversible modular pavilions between one and two stories within the space as envisioned by Niemeyer (refer to Niemeyer's drawing of the Grand Cover in page 150).

Policy 46.

To maintain the vantage points and view from the Grand Cover across the RKIF sectors and its green space and outward to the city of Tripoli. To maintain its connection with the landscape, surrounding open spaces, and other buildings of the Fairground.²¹⁴

Policy 47.

To mitigate any structural defects throughout the building including the exposed fascia that terminates roof areas.

Policy 48.

To mitigate the intrusion of alterations of the Grand Cover including inappropriate and visible areas of a concrete parge over the roof slab edge hiding surface imperfections but that have changed the concrete-finish appearance. Areas of applied concrete parge also conceal underlying steel and possible corrosion that may need to be repaired as part of future maintenance of the structure.

Policy 49.

To restore the articulation of the paving in front of the Grand Cover, including directions and patterns of paving leading to adjacent buildings.

Policy 50.

To restore the original recessed lighting system along the exterior structure as originally intended by Niemeyer.

Policy 51.

To maintain the Grand Cover's outdoor ground spaces so that they remain open, with concrete seating, planters, and plantings.



The precast-concrete panel cover at the vertical face of a main beam at the roof of the Grand Cover. Note signs of installed roof plies that are loose at perimeter edges.

© UNESCO/Pamela Jerome, 2019

²¹⁴ This will entail the future removal of the line of trees at the north end of the Grand Cover and the reconsideration of the enclosed half of the Grand Cover.

Transformer Rooms and Restrooms *****Exterior **** Interior ******Transformer Rooms**

Two Transformer Rooms are situated behind the Grand Cover adjacent to the two Restrooms (referred to as Cabinets on Oscar Niemeyer drawings). A third Transformer Room is located to the left in the part of the Fairground between the Main Entrance Plaza and the Guest House. Niemeyer designed the three Transformer Rooms to be housed in buildings formed by a spiral geometry in plan along with a circular shape in keeping visually with other structures on site. The positioning of the Transformer Rooms is unchanged; the structures remain in keeping with Niemeyer's original intent. Originally, the Transformer Rooms were designed within enclosed cast-in-place concrete structures; these would serve as supporting mechanical systems for the adjacent structures. Each structure is constructed using cast-in-place concrete walls and ceilings set on a large cast-in-place concrete rectangular base. The structures are comprised of fair-faced concrete with inner walls forming a spiral and curvilinear shape – they remain open to the external environment and were never used.

Restrooms

The two Restroom structures are also situated behind the Grand Cover and are near the Transformer Rooms. These were originally designed as supporting spaces that could be utilized during activities of the Fair. The buildings' exterior walls are curvilinear at each end and have an overall elliptical shape in plan. These cast-in-place concrete structures are curved building shapes in keeping with other surrounding curved building shapes of the Fairground. Similar to the Bars, the outer structure of the Restrooms remains relatively intact with exposed cast-in-place board-formed concrete; however, the interior fittings are no longer extant. Originally, one of the Restroom's designs included four toilets and four sinks for women as well as four toilets and three sinks for men. Areas of the interior finishes were intended to be painted white along with the installation of marble mosaic tiles. These types of functions can be reinstated in order to provide supporting services to the Fairground structures or, perhaps, can also be adapted for new uses.



Restroom along the pathway that links the Grand Cover with the Services sector. Notice the Transformer Room behind the Restroom to the right.

Significance, Survival, Vulnerabilities

The Transformer Rooms and Restroom structures provide infrastructure and supporting functions within RKIF; they blend in with other structures of the Fair and are also discoverable follies within the landscape. The structures are one story in height and are, therefore, lower than many of the other structures of the Fairground. Their positioning is behind the Grand Cover in the landscape, and one Restroom is located along the pathway that is perpendicular to the Grand Cover leading to the Administration Building and the Customs-Firehouse-Depots Building.

Niemeyer did not use pathways as an approach to access the Transformer Rooms but did for the Restroom structure – accentuating the placement of the structures as a series of follies, while also providing specific program utilitarian functions. Niemeyer experimented with the contrasting use of differing scales and geometries and provided these functions as essential infrastructure, contributing to the uniqueness of the complex. Given their smaller scale, the concrete enclosures of the Transformer Rooms and the Restrooms remain generally intact though the interiors were stripped and were never used as intended.

The structures remain open to the elements. Small, isolated areas of deteriorated concrete exist, including a partial collapse of the slab at the Transformer Room near the Guest House.



Condition of the entrance to the Restroom located behind the rehabilitated part of the Grand Cover.

Policy 52.

To recognize that the Transformer Rooms and Restrooms are a work of design by Oscar Niemeyer combining similar concrete construction for programmatic functions that originally related to the program of activities for the Fair.

Policy 53.

To maintain the Transformer Rooms and Restrooms as follies with supporting functions behind the Grand Cover, which are open to the landscape areas of RKIF. Similar comparable program functions are acceptable as part of future functions in these spaces, provided that they do not alter or damage the historic fabric.

Policy 54.

To maintain the vantage points and the viewsheds from focal points behind the Grand Cover and the surrounding landscape area.

Policy 55.

To mitigate any threats of water infiltration into the buildings.

Policy 56.

To ensure that concrete repair work is included as a part of continued maintenance of the structures. All exposed concrete surfaces (e.g. board-formed finishes) should be preserved in their entirety.

Post-War Utility Buildings (Int)

Four Post-War Utility Buildings were added behind and to the south of the Grand Cover during and after its rehabilitation. Other than the Generator Room, three of these Utility Buildings are currently not in use and are in a state of disrepair and ruin; they are identified as intrusive to the site as they do not respect Niemeyer's design principles.

Generator Room (Int)

The Generator Room, similar to the earlier Post-War Utility Buildings, was added as a support structure to the complex that provided a source of electricity to the site; it continues to do so currently. This Generator Room resides south of the Grand Cover between the Guest House and the Transformer and Restroom structures and is maintained as part of the site.

It is identified as an intrusive later addition to the site that does not respect Niemeyer's conceptual design and aesthetics; however, given its function, the Generator Room should be maintained on a regular basis as the only source of electricity on site until a new source of energy is identified and constructed.

Other Utility Buildings Int []

There are three Utility Buildings behind and to the south of the Grand Cover. These buildings are also not original to the site and were not designed by Niemeyer. The buildings'

concrete-block walls are cracking, along with displacement and missing areas of outer walls. The structures are currently abandoned and dilapidated with foliage growing inside and surrounding the structures.



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© UNESCO/Ieva Saudargaitė, 2023

Above Generator Room, view from the Grand Cover.

Below An abandoned Utility Building behind the Grand Cover.

Policy 57.

To recognize that the Utility Buildings are in a state of ruin and disrepair. These structures are considered intrusive to the site and should be removed.

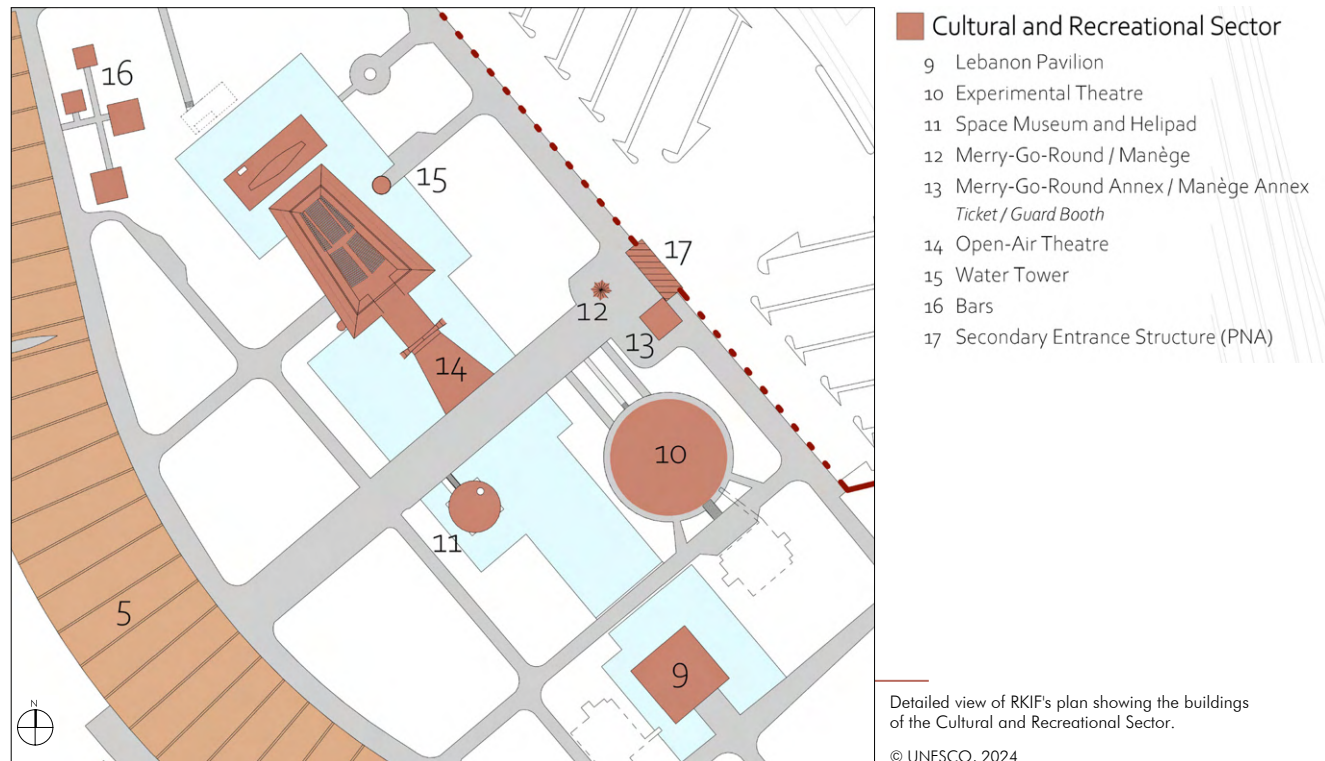
Policy 58.

To recognize that the Generator Room, although intrusive to the site, is currently the only source of electricity for the site and still functions to support the Fair. Consideration should be given to continued maintenance of the Generator Room and its operating function; this should be carried out until a new generator or source of energy is identified for the future function of the Fair.

4.3.1.3 The Cultural and Recreational Sector ****

The Cultural and Recreational Sector is located just northeast in front of the Grand Cover within RKIF. It is defined by the surrounding perimeters of the following structures: the Lebanon Pavilion, the Experimental Theatre, the Space Museum, the Manège and the Manège Annexes, the Open-Air Theatre, the Water Tower and the

Bars. The Cultural and Recreational Sector is situated in a central and separate area within the Fairground, featuring its own dedicated buildings and structures. This zone includes programs for performance stages, cultural displays, recreation as well as theater spaces. Its aim was to create a vibrant and engaging atmosphere for visitors.



Lebanon Pavilion ****

Exterior **** Interior ***

As originally designed, the Lebanon Pavilion is notable for its commanding positions within RKIF and its unique characteristic arches. The design of this structure relates directly to the Open-Air Theatre, as shown in the site plan and model proposed by Niemeyer as part of the original layout of the Fairground. Similar to other RKIF structures, the construction of the Lebanon Pavilion was achieved through structural innovation in Lebanon at that time. The building is sited to be in line with the original entrance approach, with two oblique paths leading to the Pavilion; these paths have been altered and replaced with more orthogonal paths. Niemeyer

intended the Pavilion to be emblematic of Lebanon as its name suggests, particularly in terms of its novel architectural language and its integration within the RKIF complex.

The Lebanon Pavilion is constructed using reinforced concrete. The facade of the building consists of cast-in-place reinforced-concrete arches. The structure incorporates two main levels, a basement level and a ground level, with an intermediate level located between the ground floor and the roof. Access to the interior mezzanine level from the main level is provided by a concrete stairway and a ramp.



Lebanon Pavilion (no. 9) with its reflecting pool.

© Manal Hmeidan, 2024

Significance, Survival, Vulnerabilities

The Lebanon Pavilion is of outstanding cultural significance and is a notable work of architecture within RKIF. The interpretation by Niemeyer is unique given the lightness of the structure. Through the use of the pointed arch, the Pavilion reflects on the national importance of the structure as a specific nod to local architecture. The intended use of the recessed glass box within the building's exoskeleton is similar to buildings designed by Oscar Niemeyer for Brasilia. For example, Niemeyer used a very similar design in the Itamaraty Palace (1962), also known as the Palace of the Arches, or Ministry of Foreign Affairs. He also drew on a similar design for the Planalto Palace (1958), as well as at the Alvorada Palace (1957), both also in Brasilia. Although the glass box at the Lebanon Pavilion is no longer extant, evidence of the metal frames remains.

The monumentality of the Lebanon Pavilion is reinforced by surrounding reflecting pools and its immersion within a green landscape. Its access is provided by an entrance walkway across its reflecting pool. The Pavilion appears to consist of numerous colors, which are composed of layers of paint coatings that have been applied to the exposed concrete surfaces as part of rehabilitative works over time. Newer coatings with earth-tone colors have been applied to the structure, clearly modifying the original appearance of the exposed concrete surfaces. Similar to other buildings at RKIF, the preferred contrast between any whitewashed surfaces and the rough concrete substrates as described in Niemeyer's original drawings, is lessened if not completely absent.



Interior of the Lebanon Pavilion stripped from its linoleum tiles and white marble.

© UNESCO/Ieva Saudargaitė, 2023

Given its monumental scale, the Lebanon Pavilion does survive generally intact; some reversible changes, such as the removal of the glass box and the addition of paint coatings, have not significantly compromised the original design. Evidence of original material fabric is still present as is observable not only by paint finishes but also by signs of the aluminum frame and track from the former window-wall perimeter enclosure and also fragments of original green linoleum tiles and white marble. Repairs to the concrete are needed to protect the structure's historic and physical integrity.

The concrete deterioration on the Lebanon Pavilion's roof structure, exterior facades, bridge over the reflecting pool is most likely due to corrosion of embedded reinforcing steel, although other mechanisms may also be contributing to deterioration. The underside of the concrete at the roof level and the main level was observed to have some minor areas of incipient spalls of the original concrete. Also, deterioration of previous repairs was observed and appears to be related to the installation of shallow mortar materials with inadequate surface preparation.



© UNESCO/Mazen Haidar, 2019



© UNESCO/Mazen Haidar, 2019

Above Exposed steel reinforcing at the column of the Lebanon Pavilion. The concrete has spalled because the reinforcing corroded. The red coating appears to be a bonding agent from a previous repair campaign or an anti-corrosion product.

Below Cement plaster and metal lath enclosing steel framing at the edge of the mezzanine level of the Lebanon Pavilion.

Policy 59.

To recognize that the Lebanon Pavilion is a work of innovative architectural design using concrete construction of its era and that it is united with the other buildings of the Fairground, in particular, with the entrance to the complex as well as the Open-Air Theatre.

Policy 60.

To preserve the overall original arched concrete geometries of the Lebanon Pavilion; the iconic arched arcade should be retained with open spaces around the perimeter portico areas, as originally intended by Niemeyer.

Policy 61.

To maintain the Lebanon Pavilion as one of the iconic spaces of RKIF and ensure that the structure retains its uniqueness architecturally within RKIF.

Policy 62.

To maintain and preserve the cultural symbolic meaning of the Lebanon Pavilion as a distinctive structure dedicated to Lebanon in its design as well as function by Niemeyer. Future private or commercial uses should seek to reflect, directly or indirectly, Lebanon's culture, innovation, art, creativity, science or achievements. Consideration of new adaptive reuses should be reviewed by the conservation management committee/team established as part of this CMP (Policy 22-24).

Policy 63.

To permit temporary uses and installations that are acceptable for events in the space, provided that they do not alter or damage the structure in any way.

Policy 64.

To retain the remaining features of the glass box design, including its design geometries, at the Lebanon Pavilion; the metal frame and glass spacing should be maintained and reinstated.

Policy 65.

To reinstate interior material finishes wherever evidence of implementation exists (Policy 14). Replacement with compatible alternative materials is possible based on sound justification.

Policy 66.

To restore the original aesthetic of the building. Any whitewashed concrete surfaces should be reinstated (newer paint coatings removed), as originally designed by Niemeyer.

Policy 67.

To maintain the vantage points and the viewshed from the Lebanon Pavilion to the Open-Air Theatre across walkways and landscaping; to consider areas of reinstatement or reclamation as part of the original park and green space.

Policy 68.

To mitigate any structural defects of the building, while mitigating the intrusion of alterations, through the restoration of exposed concrete surfaces.

Experimental Theatre *****Exterior **** Interior ****

The Experimental Theatre is located adjacent to the rectangular reflecting pool that is situated in front of the Lebanon Pavilion, and directly across from the Open-Air Theatre. The reflecting pool allows for a dialogue between the Experimental Theatre and the Lebanon Pavilion. The dome structure of the Theatre is opaque and enclosed, as compared to the transparent exoskeleton structure of the Lebanon Pavilion. The Experimental Theatre and its design reference the future, while the Lebanon Pavilion design references a more traditional context; both work together to suggest a future that is also rooted in tradition. The building's design has a clear, continuous visual relationship with the Lebanon Pavilion, the Open-Air Theatre, and the Manège and its Annex (current Ticket/Guard Booth), which represent the original layout of the Fairground.

The Experimental Theatre was never completely fitted out with acoustical finishes and much of the interior remains unfinished. The building is

constructed of reinforced concrete. The dome structure encloses a main circular stage area that was originally intended to be raised up and down from lower levels up to the main level. The ground-floor level of the Theatre includes tread and riser areas for seating, walkways, and a circular performance stage that are also constructed of reinforced concrete. Below the ground level is a basement that includes rooms, corridors, and other sub-grade mechanical spaces.

The original approach to the Theatre consists of oblique paths leading to the building; these paths leading through the surrounding green space to the Theatre do not appear to have been altered from the original plan, except where the path to the west has been widened. A main staircase leads to a submerged entrance, up through the interior of the Theatre. Exterior pathways lead from the Theatre to four emergency exit doors, which are located on opposite sides on each axis through the building.



Experimental Theatre,
looking southeast.

© Maya Hmeidan, 2017

Significance, Survival, Vulnerabilities

The Experimental Theatre is a notable work of architecture within RKIF. The interpretation by Niemeyer closely relates to the Lebanon Pavilion, with the use of the dome at the Experimental Theatre exemplifying a unique invention and modernization. The use of the dome structure parallels other buildings designed by Oscar Niemeyer. For example, Niemeyer uses a very similar design in the *Congresso Nacional* and the *Museu Nacional Honestino Guimarães* in Brasília (2006), the *Lucas Nogueira Garcez Pavilion* or *Oca* in São Paulo's Ibirapuera Park (1951), and the French Communist Party Headquarters in Paris (1971). Niemeyer experimented with the use of the domes at these other buildings and incorporated this feature in the Experimental Theatre, which was meant to have a rotating stage inspired by technological innovation.

Given its large scale, the Experimental Theatre remains generally intact. The interior of the building retains its unfinished character and while largely unaltered, localized areas of concrete deterioration exist. The exterior of the dome has been coated with a waterproofing membrane,

with signs of prior repairs visible. On the interior, evidence of the exposed steel tie wires for fit-out for a dropped ceiling remains. Vulnerabilities also include seasonal flooding of lower areas within the building. On the underside of the dome, evidence of deteriorated concrete includes water staining and efflorescence at numerous areas, with concrete spalls and exposed corroded reinforcing steel.



Ticket booth at the main entrance of the Experimental Theatre.



The unfinished interior of the Experimental Theatre.

Policy 69.

To recognize that the Experimental Theatre is a work of structural innovation in concrete construction in Lebanon during this era, as well as of technological innovation demonstrated in the stage mechanism and acoustic-echo management; it unites the buildings of the Fairground, in particular through its relationship with the Lebanon Pavilion and the Open-Air Theatre.

Policy 70.

To retain the concrete geometries of the Experimental Theatre, including the exterior and interior dome shape, and its relationship with the stage area and surrounding raised perimeter seating, as intended by Niemeyer.

Policy 71.

To maintain the Experimental Theatre as one of the iconic spaces of RKIF, including its uniqueness architecturally within RKIF. Similar intended program functions, including art installations, exhibitions, performances, and social events are acceptable as part of future functions in the space, provided that they do not damage the historic fabric in any way.

Policy 72.

To consider the adjacent Ticket Booth as an annex to the Experimental Theatre and to maintain it as part of this ensemble.

Policy 73.

To maintain the current aesthetic of the building and to conserve the historic fabric including the reinstatement or repair of the exterior and interior concrete surfaces and finishes as originally intended by Niemeyer.

Policy 74.

To maintain the vantage points and the viewsheds to the adjacent reflecting pool, the Lebanon Pavilion, and the Open-Air Theatre.

Policy 75.

To mitigate the threat of seasonal flooding, bulk water intrusion, and water infiltration through the exposed outer concrete dome surfaces. Ensure that concrete repair work and painted surfaces are included as a part of continued maintenance of the structure.



Left Previous repair and concrete patching.

Right Cracking of the external thin layer of mortar covering the reinforced concrete.



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© UNESCO/Maya Hmeidan, 2024

Space Museum and Helipad *****Exterior **** Interior ****

The Space Museum is surrounded by a rectangular reflecting pool that is situated directly across from the Open-Air Theatre next to the Experimental Theatre and in front of the Lebanon Pavilion. The reflecting pool allows for a dialogue between the Space Museum and the surrounding buildings. The open structure of the Museum contrasts with the Experimental Theatre, which is opaque and enclosed; however, its open inverted structure aligns with the transparency of the Open-Air Theatre, which contrasts with the partially transparent exoskeleton structure of the Lebanon Pavilion. The Space Museum and its design also reference the future, similar to the Experimental Theatre; this style contrasts with the design of Lebanon Pavilion, which references a more traditional context.

The building's design has a clear, continuous visual relationship with the Open-Air Theatre, the Experimental Theatre, and the Lebanon

Pavilion that reflects the original layout of the Fairground. The Space Museum is constructed of reinforced concrete and includes a large enclosed main space below grade that was designed to serve as an exhibition space. The inverted horizontal concrete platform structure above grade was designed to serve as a helipad and is accessed by a steel circular ladder. There is a reinforced concrete column that extends from the underground exhibition space and up to the roof of the space museum. The concrete column serves as a structural column and axis for the Space Museum and helicopter pad. The ground floor of the Space Museum includes a rectangular platform with its perimeter surrounded by a reflecting pool.

The original approach to the Space Museum consists of a walkway that extends from the main central pedestrian axis of the complex; a separate walkway leads over the reflecting pool to the



The Helipad on top of the underground Space Museum, looking west.

© Manal Hmeidan, 2024

Space Museum. The building and pathways do not appear to have been altered from the original plan. Light is provided to the lower exhibition space by a perimeter horizontal opening located directly below the inverted platform and helipad. A wide main concrete staircase leads down to the partially submerged exhibition space.

Significance, Survival, Vulnerabilities

The Space Museum is a notable work of architecture within RKIF. The interpretation by Niemeyer closely relates to the surrounding buildings of the complex, including the Open-Air Theatre, Experimental Theatre, and the Lebanon Pavilion, and provides a connection via the surrounding reflecting pool. Niemeyer's use of the inverted platform of the Museum compares and contrasts with the dome of the Experimental Theatre, exemplifying a unique invention and modernization. Niemeyer experimented with the use of these geometries at other buildings and incorporated the inverted platform in the Space Museum, where the raised platform atop the Museum was intended to serve as a helipad, all

inspired by technological innovation. It should be noted that the first rocket in the Middle East was launched by the Lebanese Rocket Society in 1962, an event that was commemorated by the issuance of a stamp in 1964 on the 21st anniversary of Lebanon's independence.

Given its unique geometry, the Space Museum remains generally intact. The interior of the building retains its unfinished character. While largely unaltered, black soot is visible that is the result of a fire that occurred at some time in the past. Localized areas of concrete deterioration exist both above grade and below grade. Evidence of prior repairs or coating applications were not observed. Vulnerabilities also include seasonal flooding of lower areas within the building. On the underside of the exterior inverted concrete platform, evidence of water infiltration includes deteriorated concrete at numerous areas, with corroded steel framing visible and in poor condition along with concrete spalls in the circular staircase.



The main entrance to the underground Space Museum.

© Assaad Seif, 2018

Policy 76.

To recognize that the Space Museum is a work of innovative architectural design in concrete construction of its era, as well as the use of the inverted platform as a helipad; the Museum is united with surrounding buildings of the Fairground through its relationship with the surrounding reflecting pool.

Policy 77.

To retain the concrete geometries of the Space Museum, including the exterior inverted platform's circular shape, the perimeter opening that allows light into the lower exhibition space, and the circular steel stair. Retain the overall design geometry of the inverted concrete structure, including its relationship with the ground-floor podium area and the surrounding reflecting pool, as intended by Niemeyer.

Policy 78.

To maintain the Space Museum as one of the iconic spaces of RKIF, including its uniqueness architecturally within RKIF. Similar comparable program functions (e.g. art installations, exhibitions, and social events) are acceptable as part of future functions in the space, provided that they do not alter or damage the historic fabric.

Policy 79.

To maintain the current aesthetic of the building and to conserve the historic fabric, including the exterior unfinished appearance of the concrete surfaces and unfinished interior concrete finishes, as originally intended by Niemeyer.

Policy 80.

To maintain the vantage points and the viewsheds with the surrounding reflecting pool, the Open-Air Theatre, the Experimental Theatre, and the Lebanon Pavilion.

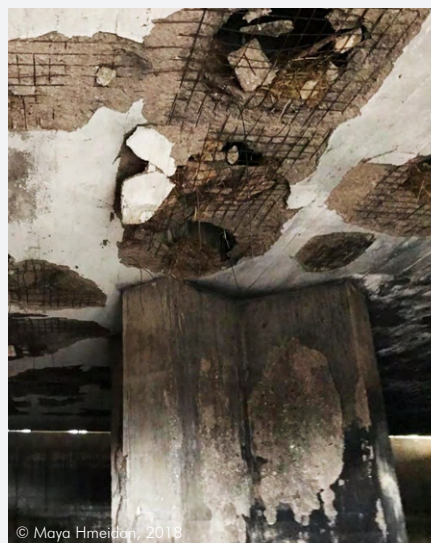
Policy 81.

To mitigate the threat of seasonal flooding, bulk water intrusion, and water infiltration at the lower level.



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The Space Museum's underground exhibition space. The roof of this space stops just clear of the perimeter wall in order to reveal a clerestory that lets light in. A central column and four pillars at each corner make this structurally possible.



© Maya Hmeidan, 2018

The interior of the Space Museum showing considerable damage to the concrete from moisture penetration. Corroded welded-wire mesh is exposed at the soffit along with numerous holes. A large concrete spall can be seen on the central concrete column as well.

Manège, Manège Annex (Ticket/Guard Booth), and Secondary Entrance Structure

The Manège and its surviving Annex (today's Ticket/Guard Booth) and Secondary Entrance Structure are situated across from the Open-Air Theatre and sited on the main axis and approach towards the Grand Cover.

Manège (Merry-Go-Round) ****

*Exterior **** Interior ****

Niemeyer designed the Manège with a clear, contrasting visual relationship with the Open-Air Theatre, and it has a relationship with surrounding buildings that are in keeping with Niemeyer's original intent aligning with the layout of the Fairground.

Originally, the Manège and its Annex structures were designed as a children's playground. The Manège structure is formed from cast-in-place concrete in the shape of a pyramid with accentuated portal opening that allow aeration through ventilation holes at the upper and lower parts of the perimeter walls.

The building form is perhaps reminiscent of a cone-shaped tipi. Several cast-in-place concrete walls along with gravel circles were originally placed behind the Manège building to the north, to serve as an outdoor playground. These walls and gravel circles were removed during the Post-War period.



The Manège (right) and the Secondary Entrance Structure (left) with the Manège Annex in the center as seen from the Water Tower, looking east.

© UNESCO/Leva Saudargaitė, 2023

Manège Annex (Ticket/Guard Booth)***

Exterior *** Interior **

The Manège Annex structure across from the Manège building was originally designed as a supporting space for the children's playground, which was previously equipped with restrooms and a small gathering space. The original approach to the Manège and its Annex aligns with the Secondary Entrance of the Fair along the main pedestrian walkway that extends across the

site from the Grand Cover. The Annex building now functions as a Ticket/Guard Booth when the Secondary Entrance is open for functions at the Fair. There is a new narrow passageway that leads to the square-shaped covered space defined by two perpendicular walls with a stone surface finish which is painted white. The small square-shaped covered Annex space has an overhang, and the building has been painted different colors over time.



Front view of the Manège Annex, looking southeast.



View of the Manège Annex, looking east.

Secondary Entrance Structure **Metal Gate ** Concrete Structure **

It is noted that the Secondary Entrance and its concrete structure is not original to the site and was inserted circa the 1980s following the recommendations of the international expert Michels; it remains largely intact from its original construction architecturally and structurally. Its large rectangular volume expressed by its roof plan atop vertical rectangular columns provides a monumental entry and approach to the Fair. The rectangular roof has a large concrete parapet that conceals the flat roof over the Secondary Entrance emphasizing further the four-sided volume of the structure. There are transparent screens that align with the grid of columns providing entry rows into the Fair. It is assumed that these transparent screens are original to the Secondary Entrance providing an overall clarity through the lower section like a large series of gates into the Fairground complex.



The soffit of the Secondary Entrance has exposed welded-wire mesh and water staining, indicative of the failure of the waterproofing membrane above.



The Secondary Entrance Structure, looking east.

© UNESCO/Ieva Saudargaitė, 2023

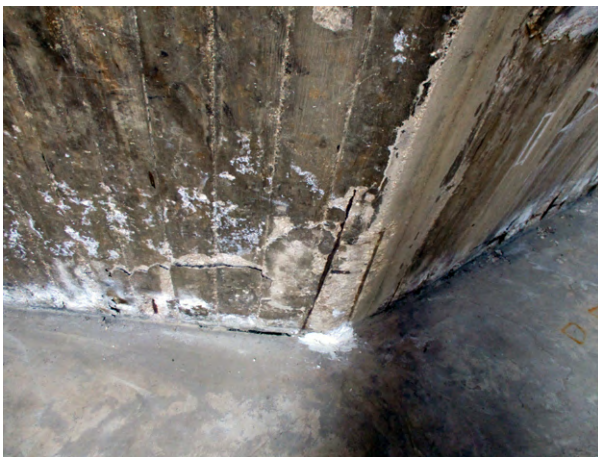
Significance, Survival, Vulnerabilities

The Manège is unique within RKIF although its height is lower than many of the other structures; however, it can serve as a more moderate viewing point from within the structure that was intended to be accessed by children. Niemeyer's use of the main pedestrian approach to access the Manège accentuates a much-intended approach to the pyramid structure, exemplifying the placement of the structure perhaps as a folly. Similar with other buildings across the complex, Niemeyer experimented with the use of this cone-shaped geometry and incorporated this as part of the complex, perhaps echoing the nearby water-tower structure. As part of the overall function of the Fair itself, the interpretation of this building in proximity to the surrounding complex ensemble by Niemeyer also closely relates to functional elements of the site.

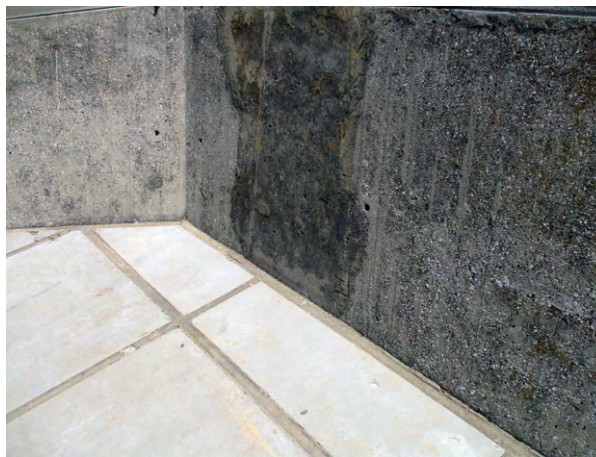
Given its smaller scale, the Manège remains generally intact. The interior of the building retains its unfinished character as evidenced by the fair-faced concrete; however, there are visible signs of soot deposits. There is evidence of prior concrete repairs at selective locations. The small square-shaped covered space of the Annex appears to remain intact although it has

been coated previously. Given that the pyramid structure remains open to the elements, small, isolated areas of deteriorated concrete are noted, with some localized signs of reinforcement along outer surfaces.

The Secondary Entrance Structure does in fact resemble Niemeyer's other structures in terms of its concrete construction with its large rectangular flat roof atop slender rectangular reinforced-concrete columns. This structure along with its gates of metallic bars provide an alternative entrance that is still in use during public events and exhibitions. However, the structure is in need of repair as there are areas of cracking and deteriorated concrete along the building columns and exposed corroded reinforcing steel; there are also areas of loose and unsound concrete which are potentially in danger of falling and should be removed. The Secondary Entrance concrete structure should be made safe for this entrance to continue to serve its function. At the roof structure and slab, including the surrounding parapet, there is concrete deterioration along the roof underside that exhibits water staining and efflorescence indicating water infiltration through the roof; there is also corrosion of embedded reinforcing steel.



© UNESCO/Paul Gaudette, 2019



© UNESCO/Paul Gaudette, 2019

Left and Right Status of the interior and exterior walls at the Manège. Efflorescence and staining are visible indicative of water passing through the concrete. Cracks in the concrete are also present.

Policy 82.

To recognize that the Manège and the surviving Annex are a work of design combining similar concrete construction for program functions that originally related to the use for children at the Fair; they are located adjacent to the Open-Air Theatre of the Fairground, which allows for convenient access to the play area.

Policy 83.

To maintain the Manège and the Annex as one of the ancillary folly spaces of RKIF, including their proximity architecturally to the Open-Air Theatre and their positioning. The small openings of the Manège should not be closed or filled. However, similar compatible program functions are acceptable as part of future functions within the space, provided that they do not damage the historic fabric.

Policy 84.

To maintain the vantage points and the viewsheds surrounding the Manège and remaining Annex and its connection by the pedestrian walkway to the Grand Cover.

Policy 85.

To ensure that concrete repair work is included as a part of the continued maintenance of the structures.

Policy 86.

To maintain the Secondary Entrance location. To repair and maintain the concrete entrance structure and the metal gate of the Secondary Entrance as long as it is in use. Reconsideration for the replacement of the Secondary Entrance Structure and gate is possible.²¹⁵ The Ticket/Guard Booth (formerly Manège Annex) structure can also remain as part of an alternative entry point into the complex. The Manège Annex structure should be maintained and repaired as necessary so that they are safe as long as they continue to be used as part of the Secondary Entrance to the Fair.

Policy 87.

To maintain the open structure and transparency of the Secondary Entrance.

Policy 88.

To maintain the Manège Annex (Ticket/Guard Booth), and its rectangular composition of roof structure, as a rectangular volume and pathway into the Fair. Its function could be reimagined as part of a future new design for the site perimeter edge and Secondary Entrance at this location.

Policy 89.

To respect and maintain the open perimeter paved areas around each structure as part of an exterior edge element that defines and outlines the Secondary Entrance and the Ticket/Guard Booth.

²¹⁵ As the structure is not original to the Niemeyer complex design, replacement of the concrete structure and metal gate at the Secondary Entrance is possible within a future design competition to re-envision the entire perimeter of the site as recommended in Chapter 5.

Open-Air Theatre ***

Ramp **** Arch **** Seating * Stage ****

Bowling Alley ** Audio-visual booth Int []

Overall, the Open-Air Theatre (OAT) remains relatively unchanged from its original construction architecturally and structurally. It was designed to host program activities such as outdoor theatrical performances, below which were an indoor Bowling Alley and a Boxing Ring where bleachers for seating are also located. Access to the outdoor seating area of the Open-Air Theatre is via a rising ramp and bridge through a monumental Arch (approximately 33 meters high), with the stage separated from the seating area as a platform surrounded by water that is part of an integral series of reflecting pools. The concrete bleachers that comprise

the seating area have been replaced and do not represent the original seating; the seating capacity was increased by modification of the seating arrangement that changed the center aisle. Fiberglass seats were also added and a small concrete audio-visual booth was inserted near the top of the ramp. A concrete acoustic shell covers a majority of the stage. Two tunnels below each end of the reflecting pool provide access to changing rooms and bathrooms below the stage platform. There is a separate entrance for actors from the changing area to the stage platform from below. This area remains largely unchanged.



General view of the Open-Air Theatre, looking southeast.



Left The Open-Air Theatre looking southwest, showing the elevated ramp topped with a monumental Arch marking the entrance to OAT.



Right The Open-Air Theatre looking west, showing the stage and parabolic acoustic shell of OAT.

Significance, Survival, Vulnerabilities

The Open-Air Theatre's pyramidal shape volumetrically resembles many of Niemeyer's other structures with similar programs, such as the Brasilia National Theater designed in 1958, the Pedro Calmon Theater in Brasilia designed in 1968 and completed in 1973, or the 2005 theater for the Ibirapuera Park originally designed in 1951. Niemeyer, in fact, designed many theaters and auditoriums but only two were truly outdoor theaters, the one built in Tripoli and another, never built, meant to be located where IM Pei's pyramid now stands in the Louvre's courtyard. The combination of multiple programs of the Open-Air Theatre is significant considering that such multi-purposing is a recurring trait in Niemeyer's work, most notably in the project for the 1984 Sambódromo in Rio de Janeiro, which supports bleachers that are used once a year during Carnival when they, in fact, conceal an elementary school working all year round.

The open-air theater that Le Corbusier designed above the General Assembly for his United Nations Number 23 scheme represents yet another precedent with which Niemeyer was intimately familiar, having been one of the

members of the international committee mandated to design the UN Headquarters in New York.

The Arch, as an integral part of the Open-Air Theatre, remains an iconic symbol of the Fairground and compares as a work of structural expressionism to the Gateway Arch by Eero Saarinen (St. Louis, MO, 1963–1965); it is the tallest vertical monument rising from within the Fair complex.

The Open-Air Theatre exhibits localized areas of concrete deterioration. While areas of the concrete finishes appear intact, the Arch and portions of the seating area and bridge have been painted in the past. Cracked and delaminated concrete can be observed in isolated areas of the Open-Air Theatre. Staining related to water leakage is also evident on the underside of the roof. In some areas, spalled concrete is visible, with exposed corroded reinforcing bars. In one area below the Theatre level, there is a large area of soffit collapse; there are other areas of the underside of the Theatre's seating area and the Arch where concrete spalls and incipient spalls are present.²¹⁶



The collapsed soffit of the Open-Air Theatre.

²¹⁶ Refer to Appendix 7 for further information about the results of structural assessment undertaken by UNESCO.

Policy 90.

To retain the significance of the Open-Air Theatre including the monumental Arch that is a focal point of the complex and, therefore, an iconic representation of RKIF.

Policy 91.

To maintain the open-air construction of the Theatre, Arch, and roof areas, including the monumental ramp and bridge that links the Theatre through the Arch structure and across the reflecting pool, from the main pathway to the stage.

Policy 92.

To retain the entire area of the stage and its setting, *i.e.*, the platform surrounded by water, as part of the integral series of perimeter reflecting pools. Each concrete structure, including its surfaces and finishes, should remain true and uniform in order to continue to enhance its architectural form and design as originally intended by Niemeyer.

Policy 93.

To maintain the overall geometric relationship of the exterior theater and stage structure, with the towering iconic Arch, as a unified ensemble as intended by Niemeyer.

Policy 94.

The use of the Open-Air Theatre and the stage, should be retained while allowing flexibility in the use of the basement floor (Bowling Alley/Boxing Ring) as a supporting space to the use of the Theatre.

Policy 95.

To avoid modifications to the Open-Air Theatre that alter its character as a large open space; to avoid inappropriate changes or alterations that may be permanent.

Policy 96.

To refrain from planning or designing any additions around, under, or to the monumental Arch; to refrain from designing permanent additions to the Open-Air Theatre and stage that were not envisioned by Niemeyer.

Policy 97.

To sustain the life of the Theatre and its meaning by reimagining and hosting associated activities at the building.

Policy 98.

To refer consistently to the details for the outfitting of the Open-Air Theatre spaces as designed by Niemeyer's office, as part of restoring the intended use of the Open-Air Theatre and stage areas.

Policy 99.

To consider revising the current seating arrangement so that it is closer to the original design as planned by Niemeyer, particularly since the current arrangement is problematic in terms of viewing the stage from the upper rows of seats. Future use should consider the original design of the seating layout.

Policy 100.

To respect and maintain the open perimeter paved areas as part of an exterior edge element that define and outline the surrounding reflecting pools and setting.

Water Tower *****Exterior **** Interior ****

The elevated water tank, otherwise referred to as the Water Tower, is situated directly across from the Open-Air Theatre and is sited within a surrounding reflecting pool. The Tower, similar in form to a watch tower, provides a view of the Open-Air Theatre, including the stage. The Tower is comprised of slot-like fenestrations that extend vertically along the upper floors; this feature is a reinterpretation of the medieval towers and crenelated castles that are considered important elements of Tripoli's cultural heritage. The Water Tower is a cylindrical reinforced-concrete structure that was intended to store water; however, it does not currently function as such.

Niemeyer originally designed the upper levels (levels two and three) of the structure to contain a restaurant along with a supporting kitchen and bathrooms; there is a panoramic view of the

Fairground from the restaurant at the uppermost third level, with a view overlooking the stage, Open-Air Theatre and adjoining reflecting pools. The restaurant is a key component of the Tower, as it serves as a unique observation terrace. The building's design has a clear, contrasting visual relationship with the Open-Air Theatre and surrounding buildings that is in keeping with Niemeyer's original intent and aligns with the layout of the Fairground.

The original approach to the Water Tower is from a concrete bridge that extends across the reflecting pool and allows pedestrian access from the walkways and landscape leading to the building; a path leads over the reflecting pool to the Water Tower and does not appear to have been altered from the original plan. The concrete pedestrian bridge is supported below by a cast concrete support system. The bridge slopes upward to the entrance of the building, where there is a recessed opening at the ground floor. This opening provides access to an internal concrete stairway that leads up and into the Tower along with an elevator. At the upper levels, vertical slotted openings in the exterior of the circular structure provide light to the interior of the structure. An interior circular concrete stair at the upper two floors allows for access to the kitchen, a lower-floor restaurant, and an observation terrace; however, the stair is no longer functional due to its deteriorated condition and poor state of disrepair.

Left The Water Tower, looking west, shows the main access pathway to the ramp that leads to the Tower's main entrance.

Right The Water Tower's location is in the same pool of OAT with its elevated access ramp. Notice the rectangular holes allowing light into the below-ground floor.



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© UNESCO/Ieva Saudargaitė, 2023



Interior of the restaurant at the 3rd level of the Water Tower, showing the stairs leading up to the panoramic platform. Note the deterioration of the central column supporting the Water Tower's roof.

Significance, Survival, Vulnerabilities

The Water Tower is also a notable work of architecture within RKIF, as it serves as a high 360-degree view of the entire site that can be accessed by pedestrians. As part of the overall function of the Fairground, the interpretation of this building in proximity to the surrounding complex ensemble by Niemeyer and its position in the reflecting pool also closely relates to natural elements of the site, including the surrounding landscape.

Niemeyer's use of a sloped pedestrian ramp and bridge to cross over the reflecting pool to the Water Tower employs an experiential approach to the Tower, similar to medieval moats, exemplifying a unique invention. Like other buildings across the complex, Niemeyer experimented with the use of cylindrical geometries and incorporated them as part of the Water Tower. In this building, he brings together a few different functions in a single geometrical structure, combining the function of water-storage infrastructure with the program of the restaurant and kitchen; ultimately, the

observation terrace atop the Water Tower serves as a unique vantage point to a 360-degree view of RKIF.

Given its large scale, the Water Tower remains generally intact. The interior of the building retains its original character, including white glazed ceramic tiles that still remain in the service areas of the kitchen and bathrooms. Also, some marble remains in the restaurant lobby areas facing the elevator including the entrance lobby. In addition, green linoleum remains on the floor of the restaurant. There is evidence of shelling from the Civil War.

While the concrete is largely unaltered, it exhibits spalling at the interior and exterior of the building, as the building remains open to the elements. Localized areas of concrete deterioration exist above grade throughout. Prior repairs were not observed. Given that the structure remains open to the elements, evidence of water infiltration includes deteriorated concrete at numerous areas, with corroded steel that is visible at severely spalled concrete in the circular staircase.

Policy 101.

To recognize that the Water Tower is a work of design innovation combining, in concrete construction, infrastructure and programmatic functions, as well as the use of the sloped ramp and bridge as part of the pedestrian approach; it is united with the surrounding reflecting pool and other buildings of the Fairground, providing views from the top of the Tower.

Policy 102.

To retain the cylindrical concrete volume of the Water Tower, including the exterior approach using the sloped bridge to the building entrance. To retain the vertical slotted openings around the upper floors of the Tower that allow for light into the building, and the upper circular concrete stair. Any type of closure of the vertical openings (e.g. glazing or windows) should not break the verticality of these openings.

Policy 103.

To maintain the Water Tower as one of the iconic structures of RKIF, including its close proximity architecturally to the Open-Air Theatre and stage. Compatible program functions are acceptable as part of future functions in the space provided that they do not alter or damage the historic fabric.

Policy 104.

To maintain the vantage points and the viewsheds with the surrounding reflecting pool, the Open-Air Theatre, the Experimental Theatre, and the Lebanon Pavilion.

Policy 105.

To mitigate the threat of water infiltration into the building.



Left The upper level of the Water Tower, showing the slotted openings of the restaurant and the umbrella-like roof over the terrace.

Right The elevator at the Water Tower. Note that the wall and floor finishes have been stripped of their original marble tiles.



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© Mayq Hmeidan, 2017

Bars *****Exterior **** Interior ***

The Bars are situated adjacent to the Grand Cover and across from the Open-Air Theatre, within an open landscape area. Niemeyer designed a collection of four Bars with visual geometries that contrast with the open landscape and have a relationship with the surrounding complex. The positioning of each Bar remains unchanged and is in keeping with Niemeyer's original intent, aligning with the layout of the Fairground. Originally, the series of Bars was designed as four open-air structures; three were to serve as outdoor cafes and one would function as a restroom. Each structure is constructed using cast-in-place concrete with large, cantilevered overhangs that provide protection and shade; each structure is set on a large cast-in-place concrete rectangular base. The structures are comprised of fair-faced concrete and each overhang is tapered outwards

from a central column. The cast-in-place concrete structures are rectilinear in contrast to the adjacent curved building of the Fairground.

The cluster of four Bar structures was originally designed as a supporting space that could be utilized during activities of the Fair. Currently, the four Bar structures remain relatively intact; however, some areas have been slightly modified. These areas and functions can be reinstated and continue to provide supporting services. There remain small central core areas of each Bar that can be utilized as kitchen areas in three of them, while one Bar can continue to serve as a restroom. There are remnants of white glazed ceramic tile finishes in the structures and each building has been painted different colors over time.



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A general view of the four Bars, looking west, showing its position in relation the northern half of the Grand Cover.



View of one of the Bars, looking west, showing the concrete rectangular base and roof under which visitors would have enjoyed a quick coffee or a snack.

Significance, Survival, Vulnerabilities

The Bars are unique within RKIF, as they appear as discoverable follies within the open landscape. The structures are one story in height and are, therefore, lower than many of the other structures of the Fairground; however, given their positioning, they can serve as separate viewing areas, as well as desired focal points within the landscape and Fairground complex. Niemeyer's use of the open landscape areas and pathways as an approach to access the Bars accentuates the placement of the structures as a collection of follies, while also providing specific programmatic functions to the Bars within the Fairground. Similar to other buildings across the complex, Niemeyer experimented with the contrasting use of differing scales and geometrical shapes, and accentuated this feature as a unique part of the complex.

Given their smaller scale, the Bars remain generally intact with minor alterations. Prior concrete repairs were observed at isolated locations. The structures remain open to the elements and small, isolated areas of deteriorated concrete were noted.

Policy 106.

To recognize that the Bars are a work of design combining similar concrete construction for programmatic functions that originally related to the program of activities for the Fair.

Policy 107.

To maintain the Bars as follies within the open landscape areas of RKIF, including their proximity to the Grand Cover and Open-Air Theatre at the RKIF. Similar comparable programs are acceptable as part of future functions of these spaces, provided that they do not alter or damage the historic fabric.

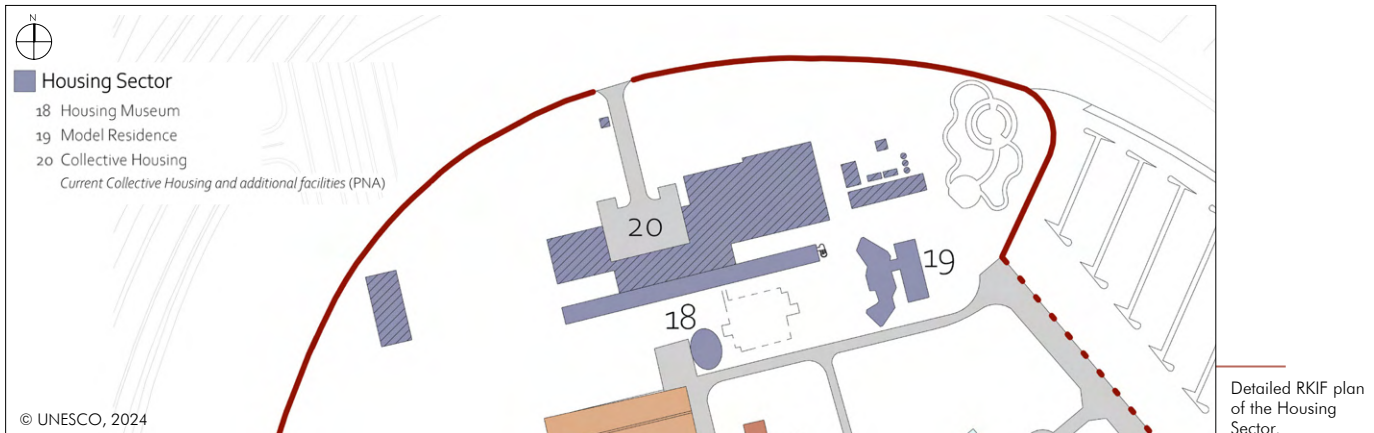
Policy 108.

To maintain the vantage points and viewsheds from focal points at each Bar and with the surrounding landscape area.

4.3.1.4 Housing Sector ***

The Housing Sector is located along the northern edge of the site within RKIF. The sector is comprised and defined by the following structures and their surroundings: the Housing Museum, Model Residence, and Collective Housing. The Housing Sector is situated in a

more secluded area within the Fairground; this area is more private for residential programming compared with a more public central portion. This zone programmatically includes structures related to types of housing for the complex.



Model Residence and Housing Museum

Exterior **** Interior ***

As part of the Housing Sector ensemble, Niemeyer designed the Model Residence and Housing Museum to complement the Collective Housing building (see separate section on Collective Housing). Overall, after years of

abandonment, the Model Residence seems incomplete and is largely in ruin from decay and neglect; by contrast, the Housing Museum appears to be relatively intact and has most recently been used as a storage space.



The outdoor pool of the Model Residence with its artificial rock.

© UNESCO/Ieva Saudargaite, 2023



Casa Das Canoas,
Rio de Janeiro.
Designed by Niemeyer
in 1951.

© Nelson Kon, 2007

Model Residence****

The Model Residence building consists of a one-level reinforced-concrete structure, with open roof areas and gardens and an outdoor pool and boulder. According to oral history, it was originally intended for the administrative director of the Fair and included living and sleeping quarters as well as a service area.²¹⁷ The living area was a glazed rectangular space that is covered with an amoeba-shaped perimeter roof that cantilevered over the glass wall.

Structurally, the concrete roof appears to be a series of concrete joists that frame into beams that are supported by concrete columns. The joists are enclosed with a thin slab that frames into the bottom of the joists. The perimeter of the roof has an architectural board-formed finish. The building facade is set back from the edge of the roof along with stone-clad walls, which extend to the outside. Portions of the roof are cantilevered past the exterior columns.

Housing Museum****

The Housing Museum represents one of Niemeyer's modern concepts as it is elliptical in its shape, with double access and round spiraling walls finished to exhibit a board-formed or fair-faced concrete. Over time, these interior and exterior walls have been painted, which conceals the textured concrete surfaces. The interior floor was originally covered in green linoleum and is designed in such a way as to allow visitors unbound circulation throughout.

Significance, Survival, Vulnerabilities

The Model Residence and its unique curvilinear forms and composition volumetrically remains as originally designed. The building plan is a single floor and reflects Niemeyer's original conceptual design; it is similar in its form to the *Casa das Canoas* (1951), his own residence in Rio de Janeiro.²¹⁸ Comparatively, the *Casa das Canoas* and the Model Residence have a more organic form and emphasize a transparency derived from



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Housing Museum looking southeast, showing the wall that separates the main entrance to the left and the recessed exit to the right to allow smooth circulation of visitors. Note the Model Residence in the background to the left and the line of overgrown trees separating this sector visually from the Cultural and Recreational Sector.



© Manal Hmeidán, 2024

The Model Residence canopy. Note the water infiltration at the ceiling has caused steel corrosion, cracking and concrete spalls.

the indoor and outdoor relationship between its landscape that includes a fabricated boulder along a main water pool in both buildings. Given that the Model Residence is open to the exterior elements, vegetation has grown throughout many areas and is present around the exterior and much of the interior of the building due to abandonment. The building is not in use, and like so many of the concrete structures across the Fair complex, the Model Residence exhibits deterioration of the concrete exposed to the open air that also is further degraded due to leaking roof areas. There is corrosion of embedded reinforcing steel in much of the concrete and some areas have spalled and fallen from the ceiling. Any remaining loose and unsound areas of concrete should be removed.

The Housing Museum remains relatively intact given its continued use over time. However, its use as a storage area by the no longer functioning Quality Inn hotel should be reconsidered so that it is more in keeping with its intended use as an exhibition space.

²¹⁷ Laurice Chalhoub (wife of Amado Chalhoub, RKIF Director), interview with Maya Hmeidán, Beirut, March 2020.

²¹⁸ While Oscar Niemeyer lived in Brasília during this time, it was at his residence in Rio de Janeiro, *Casa das Canoas*, that he met the Lebanese envoy, Ferdinand Dagher, who at the time worked for the *Conseil Exécutif des Grands Projets*, the government agency in charge of commissioning and executing the Tripoli Fairground project.

Policy 109.

To retain the significant features of the Model Residence and Housing Museum including the organic and elliptical volumes, and their intended floor plan and layout.

Policy 110.

To maintain the overall geometric relationship of the Model Residence, Housing Museum (along with the Collective Housing) as a unique ensemble of buildings as intended by Niemeyer.

Policy 111.

To reinstate the curvilinear design and floor plan of the pool and landscape with the Model Residence and its integration with the perimeter spaces of the building. To reinstate the floor plans, concrete walls, and glass window walls, as well as roofs as part of the original design of the Model Residence.²¹⁹

Policy 112.

To avoid modifications to the Housing Museum that alter the spiral-shaped structure and character as a large geometric singular volume that is aimed to be accessible to the visitor; to avoid inappropriate changes or alterations that may be permanent to this space as a gallery or a museum.

Policy 113.

To respect and reinstate the landscape area around the Model Residence including its connection to the Housing Museum and the Cultural and Recreational Sector.

Policy 114.

To refrain from planning or designing any additions around the Model Residence, and the Housing Museum; to refrain from designing permanent additions to each building that were not envisioned by Niemeyer as part of this ensemble.



© UNESCO/Maya Hmeidan, 2019

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Left General condition of the Model Residence's interior.

Right Interior of the Housing Museum.

²¹⁹ In Chapter 5, this building is being recommended for full restoration to be utilized as a museum that features Oscar Niemeyer and the history of the site.

Collective Housing (Quality Inn Hotel) *Int*

Exterior ** Interior *

Additions *Int* [] Outdoor pool *Int*

Niemeyer designed the Collective Housing building as part of the housing and museum ensemble of buildings at the Fair. Similar in architectural character compared to other rectangular buildings on site, the shape of the building was uniquely emphasized by its rough concrete frame. This frame, relatively dense at the top, gave the impression of a building crown, hence, contextually bringing across and simulating the longitudinal band of the adjacent Grand Cover. Its original design was conceived and

intended for permanent residents managing the site and their families and was comprised of 10 duplexes.

Niemeyer's original design of the Collective Housing building created a sense of openness rather than an enclosure or a sharp boundary as is the case today. The main structure, walls, shafts and staircases were all in fair-faced concrete and the walls of the main staircases were comprised of brick cladding.



© Samer Mohdad, 1994

Collective Housing before its transformation into Quality Inn hotel.



© UNESCO/Ieva Saudargaitė, 2023

Collective Housing after its transformation into Quality Inn hotel.

The external circulation had concrete paving and each of the apartments had terrazzo flooring, painted walls and ceilings, with wooden decorative panels on the living-area walls. The building had a transparent and light aspect when compared with other structures of the Fair; these qualities were provided specifically by large double-height terraces that pierced the mid-horizontal concrete floor slabs.

Designed with openings between the Fairground to the west side and the sea, the building allowed for transparency and more porosity at this end of the Fair. On the opposite two east and west end-wall facades, the raw concrete band followed the vertical perimeter while taking on a lighter appearance. Both end walls were entirely in raw concrete with no openings; this geometry intensified the framing giving the five floor levels a less imposing effect. This pronounced horizontality was paradoxically highlighted by a vertical rhythm of flat windows. Indeed, while the framed openings were uninterrupted from the first to the last level, they gave a clear view of the building structure by visually exposing continuous concrete floor slabs.

Although it is not currently in use, the Collective Housing building was considerably changed and

largely rehabilitated in 1999-2000. At that time, the original composition, geometrical rhythm and building plan were significantly altered to convert the building to a new hotel use that now incorporates multiple programmatic functions including individual hotel rooms, conference spaces, restaurant, café, and swimming pools.

Overall, Niemeyer's original Collective Housing building was transformed radically by the closure of the original facade and the large vertical original terraces, and creation of new geometric openings, the addition of appurtenances such as split air-conditioning units, and the construction and addition of a sixth level functioning as a restaurant and bar area, the attached pavilions at the street elevation and tiling of portions of that facade. From an exterior viewpoint, the treatment of the building from the original rough concrete frame to the now smooth plaster and tile finish, as well as the veneer of tiles on a portion of the front façade along with low-rise additions, have also altered the overall volume and character-defining features of the building.

Significance, Survival, Vulnerabilities

The Collective Housing and its overall rectangular form and composition volumetrically only slightly remain when compared to the original design. The building plan now occupies six floors instead of the original five, and the external stair was increased in height to accommodate this change. The Collective Housing is closed to the exterior elements; however, numerous water leaks are present throughout the building including large pools of water that seasonally collect at select interior areas of the hotel. These areas of the interior of the building are exposed to seasonal rains and are now in a state of decay as the building is currently not in use.

A thorough building assessment and evaluation should be completed in the interim in order to estimate the lifespan of the existing building-envelope components; further investigation and assessment of the structure will protect the building from additional potential deterioration and damage in the near future.



Interior of Quality Inn hotel.

© UNESCO/Mazen Haidar, 2022

Policy 115.

To retain any remaining features of the Collective Housing including the overall rectangular geometry of the building and the external round staircase. The Collective Housing and the current hotel use should be maintained; this building could continue to function as a hotel in the future for the Fair.

Policy 116.

To maintain the overall geometric relationship of the Collective Housing with the Model Residence and Housing Museum as part of the original ensemble of buildings intended by Niemeyer for the Fair.

Policy 117.

To reinstate portions of the exterior facade if alterations are to take place and to enhance the visual and physical connection with the rest of RKIF's structures and paths. For example, removal of appurtenances such as the split air-conditioning units should be considered and central air-conditioning be provided instead. In addition, the removal of the hedges in front of the Collective Housing building facing the Fair should be considered and maintained to allow for a stronger connection.

Policy 118.

To consider further modifications to the Collective Housing that enhance and promote a return to the original Niemeyer design in terms of rectangular shape and geometric form. To consider reinstatement of any character-defining features as part of the Collective Housing building.

Policy 119.

To avoid further inappropriate changes or alterations that may be permanent to the building and its space as part of its interim and future uses.

Policy 120.

To refrain from planning or designing any additions around the Collective Housing; to refrain from designing permanent additions to the building that were not envisioned by Niemeyer as part of this building's structure.

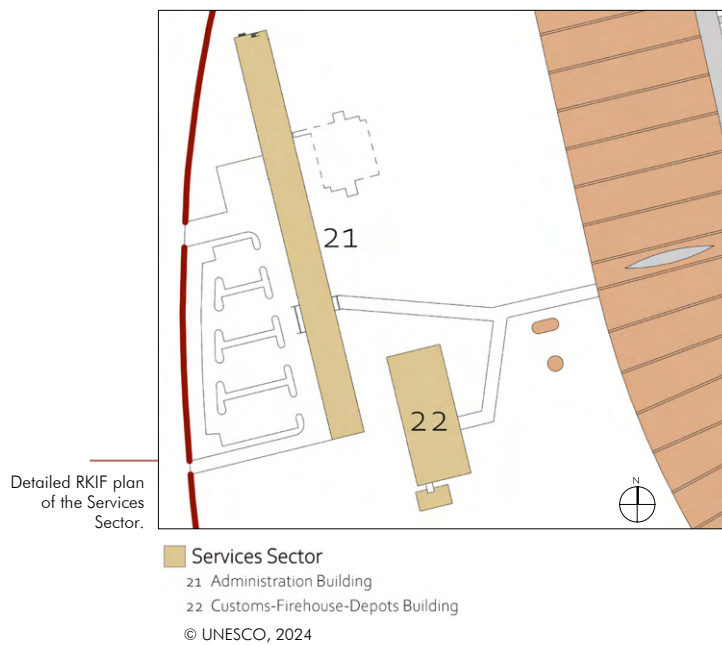


© UNESCO/Paul Gaudette, 2022

A new facility that includes an indoor swimming pool was annexed to the hotel building.

4.3.1.5 The Services Sector ****

The Services Sector is located towards the western edge of the site behind the Grand Cover within RKIF. The sector is composed and defined by the following structures and their surroundings: the Administration Building, Customs-Firehouse-Depots Building. The Services Sector is sited and surrounded by an open field area behind the Grand Cover as part of the Fairground. This zone programmatically includes structures related to support services for the entire complex.



Administration Building ****

Exterior **** Interior ***

Overall, the Administration Building remains largely unchanged from its original construction, architecturally and structurally. It was designed to provide administrative support for the Fairground, primarily offices and complementary services, as well as a restaurant, kitchen, and bathrooms. The building program was principally divided into four parts across the ground floor and the first basement, with an open and flexible plan layout throughout; kitchen and bathroom functions were separated by solid walls from the open plans on each level.

A majority of the spaces were fitted-out with finishes that encompassed a range of materials including white glazed tiles in utility spaces such as the kitchen, and white marble and terrazzo flooring as well as brick-masonry tiles along interior partition walls. There is evidence for lighting fixtures that were never installed in the ceilings, which incorporate a range of painted finishes; however, while it is likely these areas were fitted-out and completed, these spaces were most likely never used as intended.

The fair-faced concrete exterior of the building is composed architecturally of columns or





Main facade of the Administration Building looking northwest.

“colonnettes”, which include perpendicular fin elements that align with the columns. These fins are designed to act as shading devices along the exterior of the building. The colonnettes and fins are prefabricated concrete elements that were attached to the facade of the building when the cast-in-place concrete slabs were formed during the original construction. Aluminum-framed windows were reportedly installed that fit into the grooves between the columns and floor slabs to create a seamless glass wall with both fixed and operable glass panels for fresh air ventilation. Similar aluminum-framed openings to match the windows were designed at the entrances to the building to allow a seamless and uninterrupted window wall.

Tunnels from the first basement connect to the adjacent Customs-Firehouse-Depots Building. An additional area at the north side of the building includes a second basement that was intended to serve as a technical room; this lower area can be accessed via both an interior and exterior staircase from the first basement.

Significance, Survival, Vulnerabilities

The rectilinear shape of the Administration Building volumetrically is very much in line with Niemeyer’s original design. The transparency of the volume and the play of light and shade allowed by its repetitive colonnettes give the

structure – in addition to its open spaces – a unique spatial character. Although the building consists of three floors and two basements, at times it is inaccessible due to water flooding at the basement level. While the building remains primarily intact, it does exhibit signs of deterioration given that it remains open to the environment and is not an enclosed structure. The exterior fair-faced concrete shell exhibits damage and deterioration, though these do not appear to be structural in nature at this time. The exterior fascia in some areas appears to be detached from the main facade. The condition of the roof, including whether waterproofing is present, is not known. The interior walls have been stripped of their original finish materials in many places.

Finally, there is evidence of bullet holes on the side of the administration building from the Civil War period. This suggests that the building wall may have been used either for target practice or as the background for military executions by firing squads.²²⁰ In some locations, there is evidence of damage along the interior of the building in addition to the exterior bullet marks; further investigation is required to understand and interpret the causes and circumstances of this evidence and its impact on the building (and Tripolitans). Further archival research may allow a more complete story about the history of the Fair and a fuller presentation to the public.

²²⁰ It is noted through verbal accounts that the use as an execution wall is a story that is told by some Tripolitans; however, there are no written references or names of those executed. No written accounts of this were found during the CMP team’s research.

Policy 121.

To retain the significant characteristics of the Administration Building including the rectangular volume spaces, the colonnade, and the glass window wall that connects the building to the surrounding complex of RKIF.

Policy 122.

To maintain the overall geometric relationship of the Administration Building with the Customs- Firehouse-Depots Building as a unified pair of buildings, as intended by Niemeyer.

Policy 123.

To retain the precast concrete fins and precast colonnade that interconnects with the glass window wall. To reinstate the aluminum and glass window-wall system and aluminum and glass entry doors between each pair of exterior-facing column and fin locations of the perimeter of the building.

Policy 124.

To maintain the open-layout floor plan on both the ground floor and basement level of the building while maintaining its flexible use of open space. Future modifications may be considered as long as they are compatible, sensitive and in dialogue with the existing building fabric; changes must be identifiable on close inspection and should not detract from the structure's interpretation and appreciation. This includes the interior and exterior staircases that link each floor in the building and allow circulation through the structure.

Policy 125.

To retain the use of the Administration Building, including the office spaces, restaurant, kitchen, and bathroom spaces, while allowing flexibility in the use of adjacent spaces to accomplish full use of the building.



Interior of the Administration Building, looking west. Note the spontaneous vegetation that has overgrown in the site's western boundary and the detached brick cladding to the right of the image on the wall.

Policy 126.

To avoid modifications to the Administration Building that alter its character as a large rectangular open-space volume; to avoid inappropriate changes or alterations that may be permanent.

Policy 127.

To refrain from planning or designing any additions around, under, or to the Administration Building; to refrain from designing permanent additions to the building that were not envisioned by Niemeyer.

Policy 128.

To evaluate and potentially retain evidence of the Civil War for interpretation including signs of bullet holes, graffiti or select physical impact damage at the building that occurred as a result of events from that era.

Policy 129.

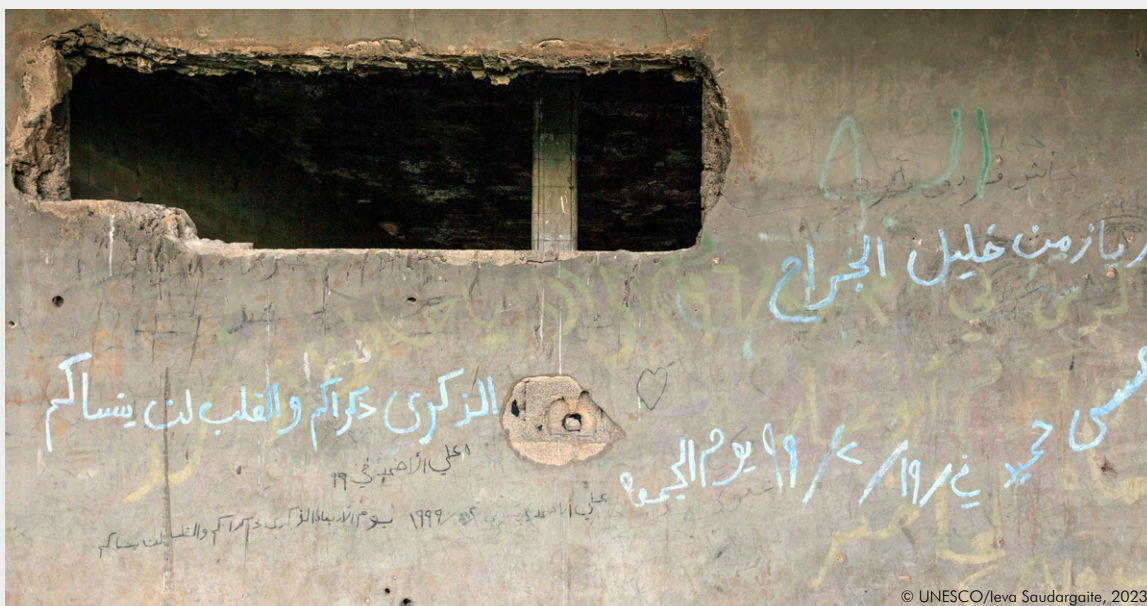
To sustain the life of the Administration Building and its meaning by reimagining and potentially hosting associated activities at the building. These may include the introduction of new activities in the open office plan on the ground and basement levels as part of the supporting spaces that complement the building's use.

Policy 130.

To refer consistently to the details for the outfitting of the Administration Building spaces as designed by Niemeyer's office, as part of restoring the intended function of the exterior and interior spaces.

Policy 131.

To respect and maintain the open perimeter landscape area around the building, including its connection to the Grand Cover and to the Customs-Firehouse-Depots Building.



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New openings introduced during the military use of the site and graffiti dating to 1999 are observed in several areas at the Administration Building.

Customs-Firehouse-Depots Building ****

Exterior **** Interior ***

Overall, after years of abandonment, the Customs-Firehouse-Depots Building is largely near ruins from decay and neglect. It was originally designed and constructed to provide support for the distribution of imported goods brought to the Fair by exhibitors; it is also intended to support firefighting at the Fairground. The building includes a very small space for the firefighter's quarters and is externally linked to a separate parabolic structure that is meant to store a firetruck. The building is a single-story structure, rectangular in plan, and is divided programmatically into four spaces. These include administration support for the customs department, a second space for the customs depots, and a third space for the firefighters' quarters connected to the adjacent firefighter's truck shed. All of the spaces are delineated functionally by horizontal circulation across the ground floor.

The fair-faced board-formed concrete exterior of this building consists of facades with intermittent recessed circular columns that support the roof structure. The original design of the western facade is intended to echo the window-wall system of the Administration Building, with projecting vertical sun visors for the administrative program space within. These *brise soleils* are meant to connect the buildings architectonically. The west facade of the firefighters' quarters was designed to consist of a screen wall or "claustra" constructed of reinforced-concrete beams and columns, resulting in small square openings or geometric perforations. This screen wall is intended to allow for light and ventilation while maintaining privacy for the firefighter's living quarters. The firetruck shed is a cast-in-place concrete parabolic structure that currently also remains open to exterior elements.



View from the eastern facade of the Administration Building towards the Customs-Firehouse-Depots Building, showing the Grand Cover in the background.

© UNESCO/Ieva Saudargaitė, 2023

Like the Administration Building, the window-wall system that is no longer present was comprised of fixed and operable aluminum-framed windows, creating a continuous glass wall. The entrances were designed as part of the uninterrupted window wall. Today, the Customs-Firehouse-Depots Building does not retain any of the intended facade elements that were originally designed in 1962, although traces of installation of these elements are still visible. The building appears to be shell construction with no doors, windows and fixtures installed as it was utilized by several militias including the Syrian Army.

Significance, Survival, Vulnerabilities

The rectilinear forms of the Customs-Firehouse-Depots Building volumetrically remain as a shell construction and are open to the exterior elements. Vegetation is present around the exterior and much of the interior of the building due to abandonment. The building plan remains a single floor and reflects Niemeyer's original conceptual design. The building is not in use, and the exterior fair-faced concrete shell exhibits localized signs of damage and deterioration, although these distress conditions do not appear to be structural in nature at this time.



Exterior of the Customs-Firehouse-Depots Building with its fire truck shed, constructed as a parabolic-shaped arch, to the right, looking northeast.



© UNESCO/Maya Hmeidan, 2024



© UNESCO/Ieva Saudargaitė, 2023

Left Fire truck shed structure is open at the front and back, with one side providing easy access from the firefighters' quarters at the Customs-Firehouse-Depots Building.

Right The Customs-Firehouse-Depots Building exhibits water staining and efflorescence caused by the migration of water through the concrete due to the failure of the slab's waterproofing membrane.

Policy 132.

To reinstate the significant features of the Customs-Firehouse-Depots Building including the unique architectural design of the rectangular and parabolic volume spaces, as well as the missing glass window wall that is similar to that of the Administration Building.

Policy 133.

To maintain the overall geometric relationship of the Customs-Firehouse-Depots Building with the Administration Building as a unified pair of buildings as intended by Niemeyer.

Policy 134.

To reinstate the precast concrete fins and precast colonnade intended as part of the original design of the glass window wall. To also reinstate the aluminum and glass window-wall system and aluminum and glass entry doors that comprise the perimeter of the building.

Policy 135.

To maintain the open-layout floor plan of the ground floor across all four spaces of the building.

Policy 136.

To consider reinstatement of the western facade and the claustra. To consider compatible uses for the Customs-Firehouse-Depots Building that retain the openness of the plan layout; this includes the administrative area, Customs/Depots spaces, firefighters' quarters, and ancillary firetruck storage.

Policy 137.

To avoid modifications to the Customs-Firehouse-Depots Building that alter the structure and character as a large rectangular open-space volume; to avoid inappropriate changes or alterations that may be permanent.

Policy 138.

To refrain from planning or designing any additions around the Customs-Firehouse-Depots Building; to refrain from designing permanent additions to the building that were not envisioned by Niemeyer.

Policy 139.

To respect and maintain the open perimeter landscape area around the building including its connection to the Grand Cover and to the Customs-Firehouse-Depots Building.

Damage in the Customs-Firehouse-Depots Building's roof that extended through the reinforced concrete roof slab and soffit ceiling slab. Note the exposed corroded reinforcing steel at the bottom of the roof beams where the soffit ceiling slab is missing.



© UNESCO/Maya Hmeidan, 2024

4.3.2 The Fairground Landscape ***

Conservation policies for the RKIF landscape fall under two broad headings: policies related to the hardscape, the built component of the landscape, which includes walkways, reflecting pools, and the boundary wall; and policies

related to the softscape, which includes trees, shrubs, lawns, and gardens. The conservation policies for both headings are given in detail in the following sections.



© UNESCO/Hana Itani, 2023

General view of RKIF's landscape 2023. Note the stone-paved path introduced during the 1996-1997 landscaping plan.

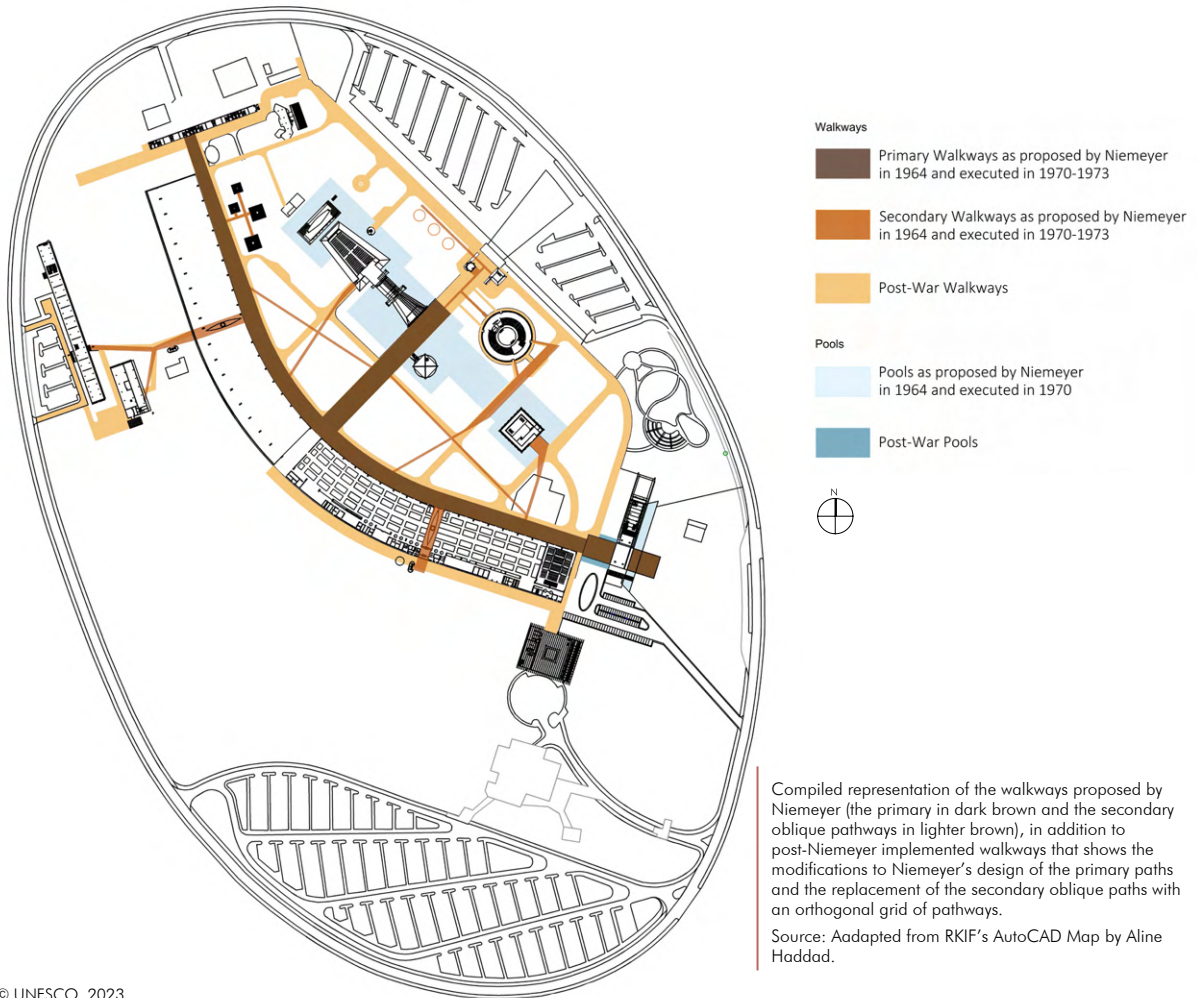
4.3.2.1 The Built Landscape/Hardscape ***

Walkways ** [S]

Curvilinear and transversal paths *** Stone paving [] Concrete pavers*
Oblique walkways (current orthogonal grid) [] Post-War walkways *

The original walkways proposed by Niemeyer were implemented during the early 1970s.²²¹ They formed a network that connected the Grand Cover and the structures embraced by the curved form. The spirit was of open vistas and gradual discovery. Niemeyer's early plans include two primary walkways: a curvilinear path that traces the shape of the Grand Cover and serves the exhibition space, and a transversal path, perpendicular to the curved one.

Several secondary, oblique minor walkways, converged at the entrance of key structures, for example, the Lebanon Pavilion, the Experimental Theatre, and the Open-Air Theatre. The overall network of walkways was 'soft' and dynamic in that they veered away from an orthogonal grid. As such, the walkway configuration complemented the harmonious relationship between solid mass and present void.



²²¹ See aerial image of RKIF dated 1973 in Chapter 2, page 42. The image confirms the implementation of the walkways as designed by Niemeyer in 1962.

Between 1995 and 1997, the walkways were transformed by Dar Al-Handasah following Jean Pierre Michels' 1979 operational directives. Prioritizing security and operational requirements, the primary curvilinear walkway was widened and the transversal walkway was extended towards the newly added Secondary Entrance to the east. The widened curvilinear path broke with the initial curvature which was aligned with the Grand Cover's edge above it and the secondary category of walkways (the oblique walkways) suffered significant changes; these were regularized to form an orthogonal grid of equal width, thereby, undermining the sensitive hierarchy of Niemeyer's configuration. Additionally, 'crazy stone' pavement was used for the orthogonal paths that are not in character with the concrete pavement that is used in the main walkways proposed by Niemeyer.

The planting introduced in 1996 further accentuated the orthogonal walkways modified by Dar Al-Handasah. Following the conventional practice common to municipal parks and streets, shrubs and trees were placed on both sides of the walkways, further emphasizing the rigidity of the walkways. As a result, the mature hedges

and large trees today frame the rectangular lawn areas, disrupting the flow of space, and defying the spirit of the original layout conceived by Niemeyer in 1962.

Significance, Survival, Vulnerabilities

The walkway network as conceived by Niemeyer gently prods the visitor to experience the architecture. The walkways proposed by Niemeyer form an invisible thread that connects the buildings that appear to be randomly strewn in the sequence of sectors. Subtle and understated, some paths point to vistas, others reveal settings, and others still terminate an approach. Herein lies their significance. Regularizing the walkway, and changing soft obliques to orthogonal crossings, while practical, takes away from the experience. The oblique paths have not survived; they were canceled. The subtle approach to movement is further compromised by hedge planting and trees representing a heavy-handed reaffirmation of the transformed network of walkways introduced by Dar Al-Handasah between 1995 and 1997. The post-War walkways are still intact, yet they no longer offer the authentic visual and sensual experience Niemeyer intended.



The main access ramp leads down from the Entrance Portico to the curvilinear path along the Grand Cover.

RKIF's transversal walkway is made with concrete pavers while the two secondary narrow walkways to its left and right are made of crazy-stone pavers.



Policy 140.

To revise the walkways and reinstate the initial layout as designed by Niemeyer, including the original oblique walkways that were replaced, while ensuring vehicular safety and emergency access (firetruck and ambulance) in any future planning and management of the landscape.

Policy 141.

To refrain from planning additional walkways in the Cultural and Recreational Sector and ensure visitors' movement/experiences are restricted to the pathways planned by Niemeyer.

Policy 142.

To maintain the position and design integrity of the Entrance Portico ramp and the ramp associated with the monumental Arch at the Open-Air Theatre. To keep the space under the Entrance Portico's ramp clear of spontaneous vegetation.

Policy 143.

To enhance the visual continuity and spatial clarity across the lawn areas in compliance with Niemeyer's conception. To remove all hedgerows planted along the edges of walkways.²²²

Policy 144.

To ensure that the lighting scheme for the walkways as proposed by Niemeyer is operational and where possible, to use LED light fittings to save on long-term energy expenditure.

Policy 145.

To devise an overall compatible signage scheme for the Fair, and to avoid piecemeal, inappropriate introduction of signage within the RKIF complex (put standard guidelines for wayfinding signage to guide different users).

²²² See recommendations for the planted landscape in Chapter 5, Section 5.7.

Reflecting Pools ****

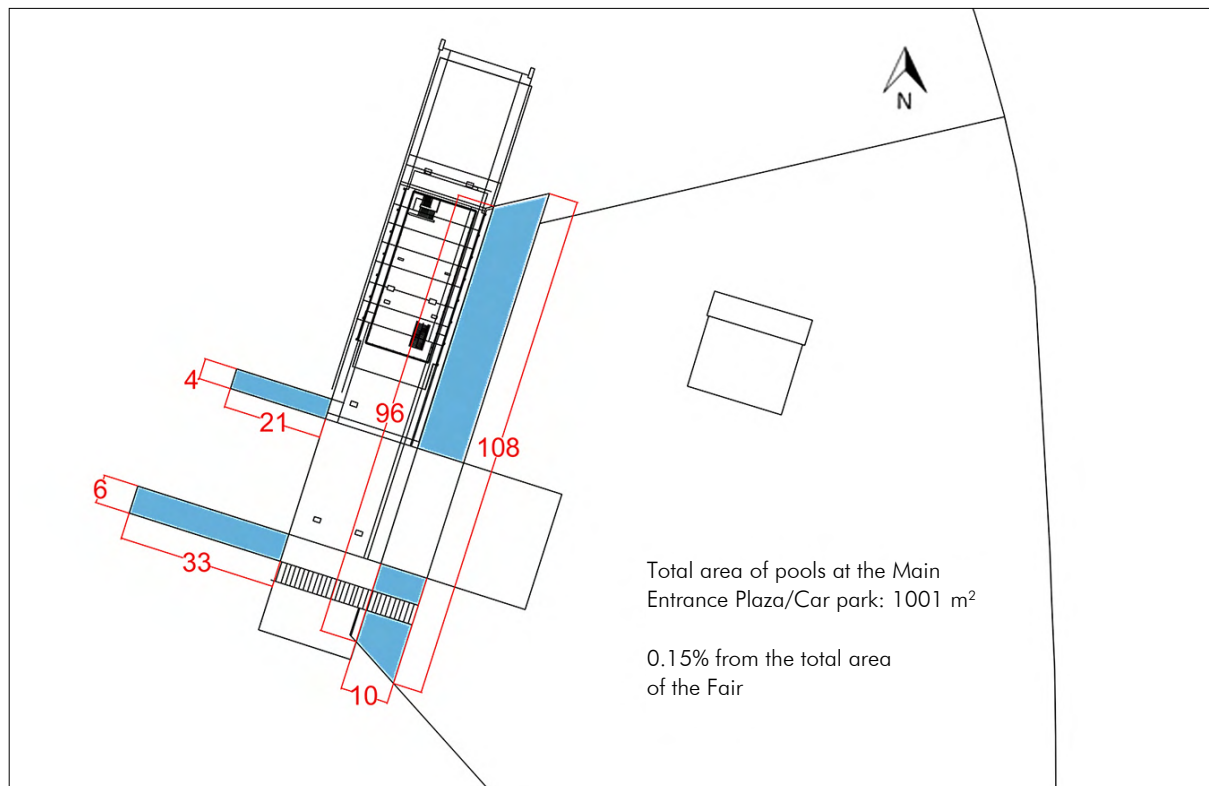
Post-War pools Int Fountain nozzles Int []

The reflecting pools conceived by Niemeyer are integral to the experience of the architecture. The pools cover an extensive spread, encircling buildings of the Cultural and Recreational Sector, across an area of 16,954 square meters. The pools produce a dramatic impact as if the architecture is floating on water. When filled, for example with rainwater, the perception of Niemeyer's iconic architecture is enhanced.

Additionally, the pool located under the Entrance Portico extends along the upper limits of the Main Entrance Plaza/Car Park and presents a 'threshold' for visitors entering the Fair. During the post-Civil-War period, two pools, acting as a fountain with water jets, were added on

both sides of the Entrance Portico's ramp, perpendicular to the Main Entrance Portico. Moreover, nozzles were introduced to the Niemeyer-designed Main Entrance Plaza pool located under the Entrance Portico.

Post-War planting along the edges of this reflecting pool and around some other pools undermines the visual impact of the architecture's reflection and obstructs the spatial and visual continuity. Similarly problematic are the nozzles introduced in the pool located under the Entrance Portico because they counter the intention of Niemeyer of an undisturbed water surface reflecting the adjacent sculpted objects (the structures).



Detailed plan of the pools around the Main Entrance Portico of the Fair, along with their dimensions. The pools located from the Main Entrance Plaza side (right) are original to Niemeyer's design, while those to the left perpendicular to the Portico were added as part of the post-War rehabilitation. Notice the added bridge parallel to the main access ramp.

Adapted from RKIF's AutoCAD map by Aline Haddad.



One of the post-War added pools with nozzles, to the right site of the access ramp.

Significance, Survival, Vulnerabilities

The reflecting pools represent an important Modernist feature introduced by Niemeyer, and water is integral to the experience of visitors, at the main entry point to the Rest Sector as well as the Cultural and Recreational Sector. The configuration of the walkways and reflecting pools enhance the landscape experience of the visitor.

Although all reflecting pools have survived almost intact, they suffer from the absence of maintenance and disuse. Moreover, the presence of inappropriate planting, *i.e.* the shrubs, *Lantana camara*, obscure viewing of the pool when approached from the Main Entrance Plaza/Car Park, and the introduction of water jets in that same pool is equally damaging to the experience, as circulating water counters the mirror effect of still water.



Post-War added bridge over the Main Entrance Portico Pool, to the south of the access ramp.

© UNESCO/Ieva Saudargaitė, 2023

Policy 146.

To retain the series of perimeter reflecting pools and their association with the specific structures as integral to the conception and experience envisioned by Niemeyer.

Policy 147.

To retain the visual perception of the reflected image of the architecture in still water. To remove added dysfunctional nozzles and any inappropriate planting around the reflecting pools, i.e. the perimeter of the reflecting pools of the Open-Air Theatre, and the shrubs along the length of the pool under the Entrance Portico.

Policy 148.

To revisit the function of the two pools constructed during the post-Civil-War period on both sides of the Main Entrance Portico's ramp. Their current function as fountains with water jets is not in line with Niemeyer's Modernist landscape conception.

Policy 149.

To refrain from introducing any trees, shrubs, perennials, or annuals (except lawns) around the perimeters of the reflecting pools and maintain the visual architectural character and sensory experience.

Policy 150.

To repair the reflecting pools and maintain them in good condition. Waterproofing and surface treatment should follow sensitive internationally accepted methods and techniques.

Policy 151.

To introduce a long-term policy for managing the water quality in the reflecting pools, storage, and treatment with fungicides to maintain visual clarity in the pools towards an enhanced visitor experience as planned by Niemeyer.



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© UNESCO/Ieva Saudargaite, 2023

The introduced water jets at the Entrance Portico reflecting pool. The left photo was taken on December 6, 2023 and the one to the right on December 26, 2023.

Site Boundary *

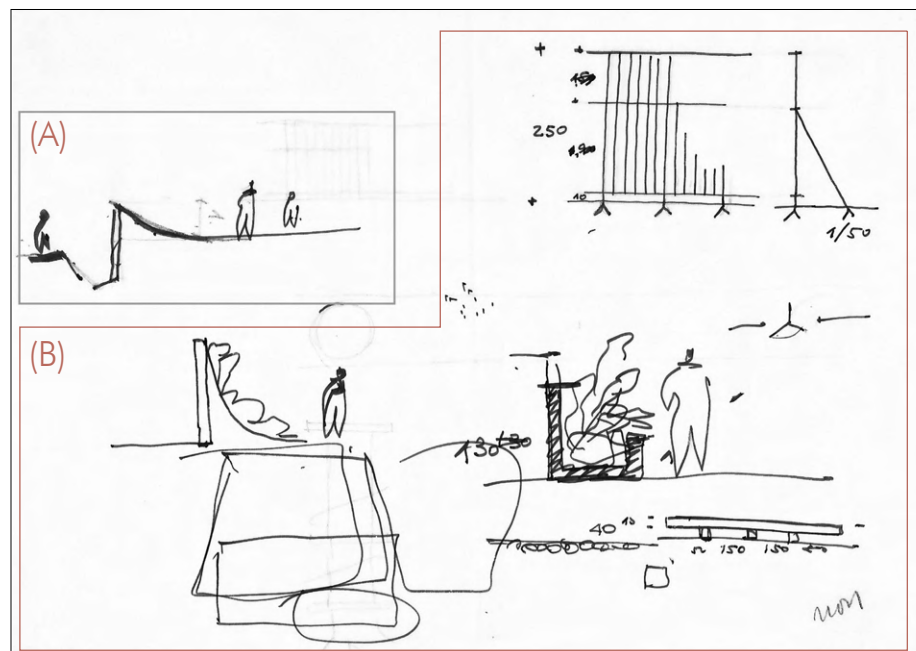
Boundary Wall * Metal Fence **

During the early 1970s, two main reports addressed to CEGP unveiled the discussion with Niemeyer about the best fencing solution for the site. Niemeyer's conception of the project boundary was minimal and unintrusive to encourage the spatial continuity between the Fairground and the surrounding city. His initial proposal for the site boundary consisted of a ditch, similar to the English landscape garden ha-ha.²²³ The proposal was illustrated by Niemeyer in his original sketches aiming to preserve an uninterrupted view of and from RKIF.

In 1970, the architect Nicolas Rizk found the proposal of a ditch problematic by claiming that "it can be breached easily even by a child. Thus, with the consent of Niemeyer, it was agreed to add a ventilated metallic parapet that would be

camouflaged with dense vegetation on the inner side of the projected peripheral ditch."²²⁴

Although the suggested ditch with green planting was "indisputably a good solution to integrate the Fairground within the city's public space," the proposal was rejected again in 1972 because of security and "major inconvenience to the exploitation and conservation of installations."²²⁵ Niemeyer accepted the solution of the rigid concrete fence that could be modeled into different elements, reducing the monotony of a 3km-long Boundary Wall. Following the study of the three types of elements proposed by Dar Al-Handasah in agreement with CEGP, as well as other new layouts, Niemeyer opted for one of the types proposed whose elements are in the form of Z.²²⁶



© Oscar Niemeyer Foundation Archives*

(A) The ditch as originally proposed for the site boundary.

(B) Three solutions for a transparent fence at the Main Entrance Plaza.

Source: Drawing by Oscar Niemeyer, "Planche de croquis no. 1," in Doumani, "Mission à Paris: Consultations avec M. Oscar Niemeyer sur des Problèmes de la Foire de Tripoli." Courtesy of Georges Doumani Family Collection.

²²³ A ha-ha is a type of sunken fence used in 18th-century parks in England to give the viewer the illusion of an unbroken, continuous rolling lawn, whilst providing boundaries for grazing livestock, Geraldine Porter, "What is a Ha-Ha", National Trust, <https://www.nationaltrust.org.uk/discover/history/gardens-landscapes/what-is-a-ha-ha> (accessed June 20, 2023).

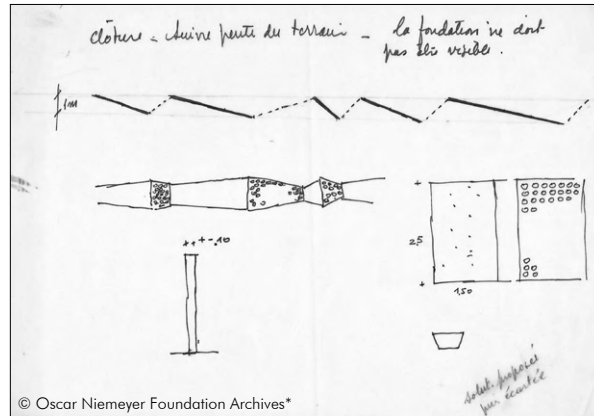
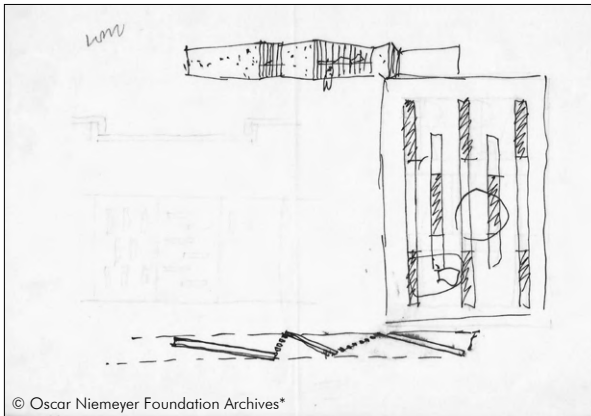
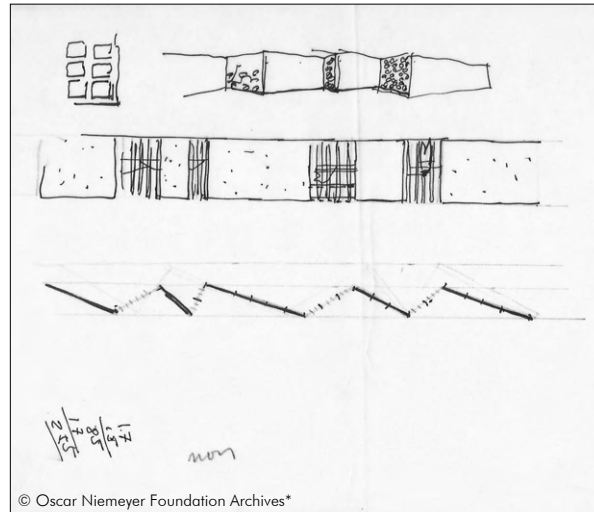
²²⁴ Rizk, "La Foire Internationale du Liban à Tripoli. Rapport Définitif sur la Mission No. 624," 10.

²²⁵ Doumani, "Mission à Paris: Consultations avec M. Oscar Niemeyer sur des Problèmes de la Foire de Tripoli," 2.

²²⁶ *ibid.*

"The elements of the fence should start from the ground level without an apparent foundation, following the slope of the ground. The layout of the elements can be modified for more variability."²²⁷

At the Main Entrance Plaza, Niemeyer advised not to introduce a concrete boundary wall but a more transparent fence instead. "For the two sides framing the Main Entrance Plaza he proposes three solutions in this order of preference: a low wall with water channel, a low wall with planters or a metallic grill (refer to sketch board no.1, on opposite page)"²²⁸



Three different types of a boundary wall, of which elements are in the form of Z.

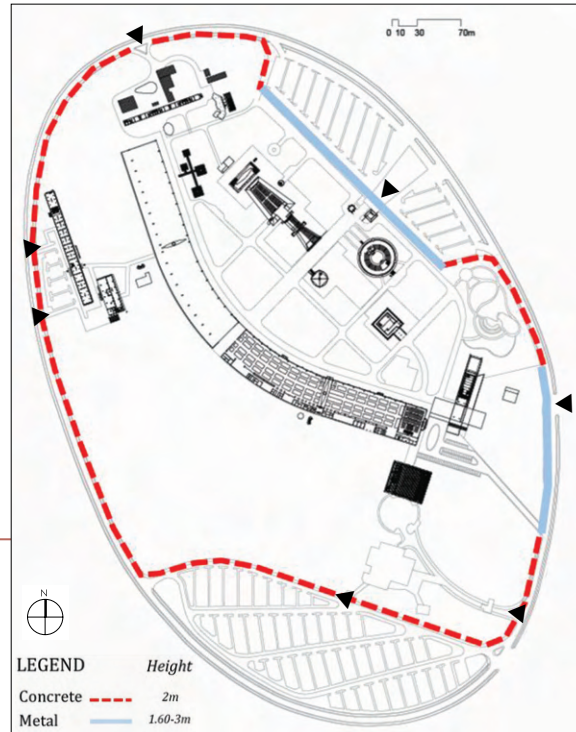
Source: Drawings by Oscar Niemeyer, "Planche de croquis" in Doumani, "Mission à Paris: Consultations avec M. Oscar Niemeyer sur des Problèmes de la Foire de Tripoli". Courtesy of Georges Doumani Family Collection



RKIF's concrete Boundary Wall.

²²⁷ *ibid*, 3.

²²⁸ Doumani, "Mission à Paris: Consultations avec M. Oscar Niemeyer sur des Problèmes de la Foire de Tripoli," 3.



Today, a two-meter high, 2.5-km long concrete peripheral wall built between 1972-1974 (prior to the eruption of the Civil War) exists along the majority of the limits of RKIF, except at the Main Entrance Plaza and the Secondary Entrance and Car Park (which was added in the 1980s).

The geometric disposition of today's concrete Boundary Wall lacks the twist and transparency of the Z-shape fence opted by Niemeyer in 1972. The interplay of transparency and opacity in this proposal was rejected (according to sketches above "non" and "écartée") and the wall that survives today is a more-or-less continuous enclosure made of repetitive concrete modular elements spaced by a few centimeters of transparent mesh, minimally reducing complete visual obstruction.



Significance, Survival, Vulnerabilities

The Boundary Wall/Fence plays a very important role in defining the degree of integration of the Fairground landscape into the rest of the city of Tripoli. Apart from the metallic fencing at the Main and Secondary Entrances, the heavy presence of the long concrete peripheral wall contains and encloses the site landscape from its surroundings. The presence of this opaque wall obstructs the visual connectivity and physical accessibility of pedestrians while ensuring monitored access to select visitors from well-defined entry points.

Previous repairs of the Boundary Wall have been piecemeal, undermining the structural stability and compromising the architectural character. Niemeyer's conception was for greater transparency to reinforce the visual and spatial connection with the city. The pavement outside the perimeter Boundary Wall is damaged and in need of repair especially along the western half, which is often overgrown with spontaneous vegetation.

The 'boundary condition' in other words, the landscape inside the Boundary Wall, the Boundary Wall itself, and the hardscape outside the Wall, should be further assessed and considered. On the one hand, Niemeyer was aware of the value of opening up the project visually, spatially, and climatically to the Mediterranean (the original orientation of the Grand Cover) and to the surrounding city (the initial Boundary Wall he proposed that was in fact, an 'invisible wall').²²⁹

On the other hand, Niemeyer envisioned the international Fair as part of a larger urban development for a seafront city that integrated parks and vast gardens into the urban fabric, "in the new districts of Tripoli, these dwellings

will be built within parks and garden spaces, and be surrounded by schools, nurseries, clubs, cinemas, churches, and mosques, etc."²³⁰

To preserve Niemeyer's vision for openness to the city spatially, visually, and programmatically, while considering the current community needs and aspirations (see overarching Policy. 3), it is necessary to address two aspects of RKIF:

- Community-held values manifested through the intangible socio-spatial practices that evolved over the last two decades through the interaction of Tripolitans with RKIF.
- Tangible heritage, of the physical-spatial aspect and the interface of RKIF with the city of Tripoli.

The overall condition of the Boundary Wall is fair except for a few punctual cracks and spalled original concrete with exposed corroded reinforcing bars. The metal fence is in good condition except in some cases where the metal is corroding.



Entrance gate towards the Services Sector.

²²⁹ Georges Doumani's 1972 report mentions "The site boundary consisting of a ditch with green plantings is indisputably a good solution to integrate the Fairground within the city's public space," also Nicolas Rizk, 1970 report recounts "I exposed to Niemeyer the problem of the site boundary and insisted that it can be breached easily, even by a kid. So, it was agreed to add a ventilated metallic parapet that would be camouflaged with dense vegetation on the inner side of the projected peripheral ditch." Doumani, "Mission à Paris: Consultations avec M. Oscar Niemeyer sur des Problèmes de la Foire de Tripoli."

²³⁰ Kassab, "M. Oscar Niemeyer Nous Parle de la Foire de Tripoli", 2-3.

Policy 152.

To enhance the interface of the Boundary Wall with the surrounding urban context: focus not only on the landscape inside of the boundaries of the Fair but also on the urban context and its surroundings together with the Boundary Wall of the Fair.

Policy 153.

To retain the combination of solid concrete and metal fenced perimeter Boundary Wall for the Fair on the short to medium term and refrain from introducing new material and/or sections until a comprehensive and holistic proposal and its impact have been assessed and approved.

Policy 154.

To repair, maintain and enhance the overall character and integrity of the current RKIF perimeter boundary in the short and medium term. This should include, but not be limited to, the replacement of the damaged segments of the solid concrete wall, currently repaired with concrete blocks, with similar precast concrete segments; addressing the growth of spontaneous vegetation at the base of the wall, and unifying the character of the sidewalk outside the perimeter Boundary Wall to ensure regularity in the exterior character of the perimeter.

Policy 155.

To introduce more transparent boundary solutions in the long term in an attempt to enhance the spatial and visual connectivity with the city while accommodating the current community needs and aspirations for more inclusivity, enjoyment, and engagement.

Policy 156.

To introduce appropriate standard road signage indicating openings in the perimeter Boundary Wall for the several entrances to the Fair and its associated parking areas: the Main Entrance Plaza/ Car Park, the entrance to the Guest House, the Southern Car Park, the Western Car Park, the Quality Inn/Collective Housing Car Park, and the Eastern Car Park.

Some damaged units of the concrete Boundary Wall were replaced with concrete blocks or closed off with large precast blocks of concrete at some locations.



© UNESCO/Isaa Akkary, 2023



© UNESCO/Maya Hmeidan, 2019



© UNESCO/Maya Hmeidan, 2024

Left The gap between the two concrete units of the wall is present to allow visual access to the site while ensuring security.

Right Status of the exterior face of the western Boundary Wall.

4.3.2.2 The Planted and Vegetated Landscape/Softscape Int [S]

The sculptural architectural forms conceived by Niemeyer and the overall configuration of the landscape with its walkways and reflecting pools are for the most part unchanged. The landscape, however, has changed considerably since it was planted in 1997; it is filled with woody plants that vary from mature small and large shrubs, small and large trees, in addition to self-regenerated trees and shrubs.²³¹

The RKIF landscape today embraces the iconic modern architectural heritage conceived by Niemeyer but has also gained a new significance to Tripolitans as a planted landscape and the largest, publicly accessible open space in the city. This situation prompted a reflection and careful consideration for the future conservation and management of the planted landscape. The study of the species, their size, condition and maturity led to the adoption of a selective removal policy for the management of the RKIF's planted landscape.²³²

Based on the landscape survey undertaken by the UNESCO Beirut Office (March-April 2023), project archival records, and findings analysis, RKIF's vegetated landscape was divided into five landscape components based on common characteristics:

- **The Rest Sector** (space between Main Entrance Plaza/Car Park, Ticket Booth, Entrance Portico, and Guest House)
- **Cultural and Recreational Sector** (spaces and buildings between the Grand Cover and the Eastern Car Park)
- **Gardens** (Southeastern, Northeastern and the Quality Inn Gardens)
- **Car Parks** (Eastern, Western, and Southern Car Parks)
- **Seaward Landscape** (space between the Grand Cover and the western site boundary).

Below are some overarching policies that apply to the planted landscapes, especially that of the first three planted landscape components described above:



The eclectic selection of trees, palms and shrubs introduced in 1996-97 disregarded the landscape conception of Niemeyer. Nevertheless, the trees have matured into a lush green landscape that is enjoyed by the people of Tripoli.

²³¹ Refer to Appendix 6 on the survey of the planted landscape carried out by UNESCO Beirut Office during March-April 2023. The survey identified the site vegetation, their species, approximate age, condition, and layout.

²³² It was observed that the greatest disturbance to spatial fluidity is caused by shrubs that are planted to either form a hedge or planted at regular distances, or planted to frame the lawn areas, which adds to their disruption of the space. Then there are tree species that are not of much value; these are planted in shelterbelts. While it is acceptable to remove shrubs and shelterbelt species, large trees that are ornamental or native are of too high a value to remove.



TREES		SHRUBS
 <i>Acacia cyanophylla</i>	 <i>Albizia julibrissen</i>	 <i>Feijoa sellowiana</i>
 <i>Brachychyton populneus</i>	 <i>Ficus stenophylla</i>	 <i>Yucca aloifolia</i>
 <i>Casuarina cunninghamiana</i>	 <i>Eucalyptus camaldulensis</i>	 <i>Nerium oleander</i>
 <i>Washingtonia robusta</i>	 <i>Betula alba</i>	 <i>Arbutus unedo</i>
 <i>Quercus suber</i>	 <i>Cercis siliquastrum</i>	 <i>Wisteria floribunda</i>
 <i>Citrus aurantium</i>	 <i>Tipuana tipu</i>	 <i>Myrtus communis</i>
 <i>Callistemon laevis</i>	 <i>Mangifera indica</i>	 <i>Jasminum odoratissimum</i>
 <i>Ceratonia siliqua</i>	 <i>Ficus carica</i>	 <i>Jasminum officinalis</i>
 <i>Cupressus sempervirens stricta</i>	 <i>Thuja plicata</i>	 <i>Euyonimus japonicus</i>
 <i>Delonix regia</i>	 <i>Chamaecyparis obtusa</i>	 <i>Pyracantha coccinea</i>
 <i>Jacaranda mimosifolia</i>	 <i>Euphorbia candelabrum</i>	 <i>Gardenia grandiflora</i>
 <i>Thevetia peruviana</i>	 Unidentified trees	 <i>Santolina decumbens</i>
 <i>Phoenix dactylifera</i>		 <i>Opuntia ficus indica</i>
 <i>Pinus pinaster</i>		 <i>Gazania regina</i>
 <i>Erythrina caffra</i>		 <i>Rosmarinus officinalis</i>
 <i>Chamaerops humilis</i>		 <i>Westringia fruticosa</i>
 <i>Morus alba</i>		 <i>Catharanthus roseus</i>
 <i>Cocos plumosa</i>		 <i>Senecio maritimus</i>
 <i>Pinus canariensis</i>		 <i>Bougainvillea glabra</i>
 <i>Juniperus 'chinensis' pyramidalis</i>		 <i>Juniperus 'chinensis' pfitzeriana</i>
 <i>Araucaria excelsa</i>		 <i>Lantana camara</i>
 <i>Parkinsonia aculeata</i>		 <i>Rosmarinus officinalis prostratus</i>
 <i>Schinus molle</i>		 <i>Hibiscus rosa sinensis</i>
 <i>Myoporum laetum</i>		 <i>Buxus sempervirens</i>
 <i>Ficus nitida</i>		 <i>Pelargonium zonale</i>
 <i>Tecoma capensis</i>		 <i>Cassia fistula</i>
 <i>Cupressus sempervirens</i>		 <i>Pittosporum tobira</i>
 <i>Azadirachta indica</i>		 <i>Pittosporum tobira 'nana'</i>
 <i>Thuja orientalis</i>		 <i>Agave americana</i>
 <i>Erythrina crista galli</i>		 <i>Carissa grandiflora</i>
 <i>Olea europaea</i>		 <i>Pelargonium graveolens</i>
 <i>Populus canescens</i>		 <i>Vitis vinifera</i>
 <i>Grevillea robusta</i>		 <i>Euphorbia millii</i>
 <i>Schinus terebinthifolius</i>		 <i>Laurus nobilis</i>
 <i>Magnolia grandiflora</i>		 <i>Aeonium arboreum webb</i>
 <i>Ficus benjamina</i>		 <i>Portulacaria afra</i>
 <i>Cupressus arizonica</i>		 <i>Agave attenuata</i>
 <i>Plumeria alba</i>		 <i>Pilosocereus polygonus</i>

RKIF's survey of the planted landscape undertaken by UNESCO in 2023.

Policy 157.

To evaluate the significance and impact of each of the existing vegetation categories with respect to their exact location prior to any decision of replacement or removal.

Policy 158.

To mitigate the impact of the post-Niemeyer planted landscape and to devise a comprehensive landscape management plan with priority actions for the short-, medium-, and long-term treatment and management of the landscape addressing the gradual enhancement of the visual qualities of Niemeyer's conception; this action plan should consider eventual reopening of viewsheds across the complex as necessary to respond to and respect the community's need for open green usable spaces.²³³

Policy 159.

To introduce a cyclical maintenance plan for the existing planted landscape (expert pruning and weeding, etc.).

Policy 160.

To undertake awareness-raising against inappropriate planting practices (ad-hoc planting and propagation).

Policy 161.

To train relevant personnel on appropriate corrective measures, best practices, and landscape care.

The regular pruning of mature trees, as in the case of pine trees shown in this image, promotes healthy growth but fails to overcome the strong definition of walkways that counters Niemeyer's vision for the landscape.



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²³³ See Chapter 5, Section 5.7.1 for specific recommendations related to the implementation of the selective removal policy of the Cultural and Recreational Sector's planted landscape.

Rest Sector **

Composed of the Ticket Booth, the Entrance Portico, and the Guest House and accessed through the Main Entrance Plaza, the Rest Sector, as described by Niemeyer, combines 'control' and 'leisure'. The trapezoidal-shaped Plaza seems to be intentionally unplanted. It funnels visitors towards the Entrance Portico where an entrance ramp bridges over a reflecting pool and rises to offer an overview of the Cultural and Recreational Sector and the Grand Cover. The Entrance Portico's monumental architecture further enhances the experience.

Planting in the Rest Sector dates back to the post-War period, but it is the one most aligned with the Modernist character of Niemeyer's architecture. A 'block' of Washingtonia palms, west of the Portico's Reception Centre, and at the southern edge of the Cultural and Recreational Sector, is very much in character with the 'tree blocks' proposed by Niemeyer, albeit Washingtonia and not date palms. The Succulent Garden, south of the Entrance Portico is similarly distinctive and well-located. A row of Neem trees runs parallel to the Entrance Portico.

The Main Entrance Plaza's trapezoidal-shaped esplanade is an urban space that accommodates a diversity of functions; it serves as the first point of pedestrian entry to the Fairground and its Rest Sector, a car park, and a space where public events are held. In the last two decades, the Plaza has become increasingly popular with Tripolitans as a community gathering space during festivities.

Eid Al Fitr celebrations in 2023 were especially successful with the diversity of activities offered that include games for children, target shooting, and horseback riding.²³⁴ There were food stalls and organized events, like flying paper lanterns, that carried through the night.



Location of the Rest Sector planted landscape component.

Adapted by Hana Itani from RKIF's AutoCAD Map and UNESCO Landscape Survey by Hana Itani.



© UNESCO/Hana Itani, 2023

The Rest Sector planting during 2023.

Source: UNESCO Landscape Survey, 2023.

What distinguishes this Plaza/Car Park from the other two large dedicated parking areas is the absence of medians with trees, which alongside the scale of the space, 23,158 sqm, provides the flexibility to hold a diversity of mass gatherings. This is typical of Niemeyer's projects, where car-park locations remain unmarked and the parking lot free of conventionally planted medians and lighting poles.

²³⁴ Festivities upon the end of the holy month of Ramadan.

Significance, Survival, Vulnerabilities

The design of the Main Entrance Plaza/Car Park remains as Niemeyer intended it with its single large lighting pole (approximately 52 meters high),²³⁵ significant as the main approach to RKIF. This Plaza has gained a new significance to Tripolitans as it is increasingly used as a public space on festive occasions for large community congregations. While community use of the Plaza/Car Park is commendable, the integrity of the space should survive as planned by Niemeyer, free from obstruction, planted, or built.

The planted, mature landscape, under and nearby the Entrance Portico is successful and complementary to the architecture, enhancing the experience of the Rest Sector. However, the succulent landscape garden is vulnerable to ad-hoc densification, which should be prevented to maintain the Rest Sector's landscape character.



View of the Succulent Garden at the southern end of the Entrance Portico next to the entry ramp (refer to above detailed plan).

© UNESCO/Ieva Saudargaitė, 2023

Policy 162.

To retain the architectural significance of the Main Entrance Plaza as intended by Niemeyer as a large, multifunctional open space and to keep it clear of planting, equally of trees and palms or shrubs, or any additional permanent lighting solution that might obstruct the openness towards the Entrance Portico.

Policy 163.

To maintain the current use of the Main Entrance Plaza/Car Park as a large open space that is publicly accessible for use by Tripolitans on special occasions and festivities in coordination with the RKIF Administration.

Policy 164.

To remove the shrubs, *Lantana camara*, lining the edge of the reflecting pool to open up the view of the pool and allow the reflection of the Reception Centre. The species are invasive and should be prohibited throughout the Fairground.

Policy 165.

To reclaim the reflection role of the Portico's reflecting pool by removing the water nozzles introduced post-Niemeyer to create water jets.

Policy 166.

To keep the area under the Entrance Portico's ramp clear from all planting and spontaneous vegetation.

Policy 167.

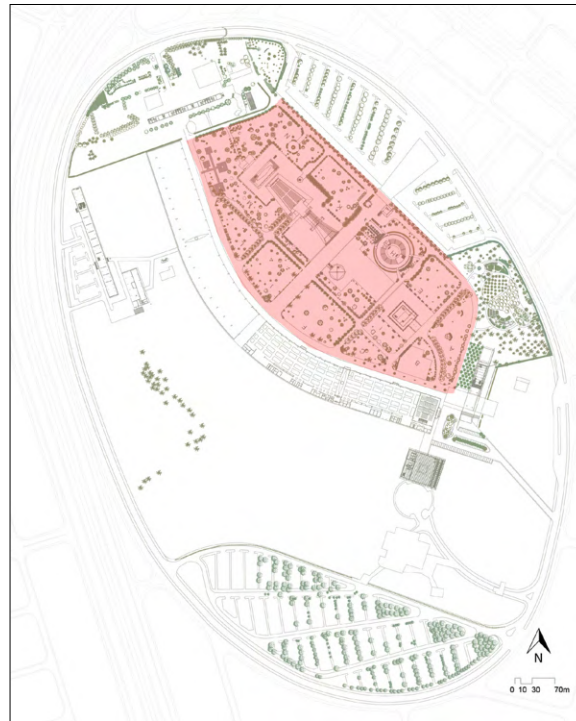
To maintain the Succulent Garden and the diversity of existing plants. To prohibit unregulated propagation of succulents to avoid crowding of the succulents and maintain the ratio of plants to available bedding space.

²³⁵ An interview conducted by Wassim Naghi with Nazih Taleb of Dar el Handasah Nazih Taleb, the design firm that undertook the study of the Main Entrance Plaza, confirms that Niemeyer suggested this sole lighting solution for the Plaza, similar to that of large stadiums, during his visit to Lebanon in December 1969. Nazih Taleb (Dar el Handasah Nazih Taleb Architectural and Engineering Consultancy Firm), Interview with Wassim Naghi, September 9, 2016.

Cultural and Recreational Sector Int [S]

The Cultural and Recreational Sector includes the landscape east of the Grand Cover to the Eastern Car Park, defined by the Model Residence and Housing Museum northward and the Rest Sector southwards. This sector is the heart of RKIF because of the unique architecture (Grand Cover, Lebanon Pavilion, Open-Air Theatre, Experimental Theatre, Space Museum, and Bars area), the unique experience (monumental ramp and bridge, monumental Arch, and reflecting pools) and the diversity of proposed activities (exhibitions, performances, and museums).

The survey findings indicate the presence of 1,847 woody plants, trees, and shrubs, and over 90 different plant species, mostly planted in 1997. These have matured and today form a dense volume of green canopies, low and high hedges that fill the empty spaces initially intended to remain unplanted, disrupt spatial continuity between the structures and obstruct the view sheds that were key to the landscape conception of Niemeyer.



Location of the Cultural and Recreational Sector component of the planted landscape.

Adapted by Hana Itani from RKIF's AutoCAD Map and UNESCO Landscape Survey by Hana Itani.



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© Assad Seif, 2018

Left Green lawns allowing visual connection with Niemeyer's sculpted forms unlike the planting in the adjacent picture.

Right Mature Hibiscus shrubs, are among other flowering and evergreen shrubs and small trees planted along the walkways of the Cultural and Recreational Sector.

Oblivious to the Modernist landscape architecture conception, the mature planting, nearly three decades old, is favored by Tripolitans visiting the Fair. The city has no other landscape that compares in scale and diversity to the landscape in this area. The planted landscape is increasingly perceived by the people of Tripoli as integral to the living heritage of RKIF.

Significance, Survival, Vulnerabilities

RKIF's initial planted landscape design of the Cultural and Recreational Sector is significant as an example of Modernist landscapes of mid-20th-century heritage. Although a few 'snapshots' can still be recognized of Niemeyer's initial design, the current planted landscape of this area has gained significance in the last two decades for Tripolitans. The current planted landscape be significant as a living landscape, a natural heritage.

However, the contradiction between the initial and current landscape conceptions dictates that future interventions mediate the two. On the one hand, the aim would be to recreate the landscape of Niemeyer that is devoid of trees (except for three distinctly sited palm groves), shrubs, and hedges, and on the other, is to conserve the mature landscape that currently exists.

Today, visitors admire the profusion of mature green canopies, enjoy the diversity in plant sizes and species and celebrate seasonal changes to the planted landscape. Generally, the trees and shrubs are healthy and in good condition, but the specimens in rows are crowded and require thinning – removal of extras to allow the trees to thrive. Also, landscape-expert management is lacking, which compromises the health of the plants and leaves them vulnerable to pests and weathering.

Policy 168.

To prohibit further planting in Niemeyer's Cultural and Recreational Sector, including annual and perennials, shrubs, trees, palms, and succulents, whether planned or ad-hoc, to avoid densification of the landscape that contradicts Niemeyer's landscape conception.

Policy 169.

To maintain the existing post-Niemeyer vegetated landscape while considering selective removal of certain species, i.e. along pathways and pools, to open up the spaces per Niemeyer's vision of open landscapes (for the short and medium terms).

Policy 170.

To remove all shrubs planted along the walkways encircling the lawn areas, and/or the reflecting pools to allow for the flow of space between buildings per Niemeyer's vision for the open landscape.

Policy 171.

To maintain existing mature tree rows, along the fence separating the Cultural and Recreational Sector from the Eastern Car Park, and the block of palms at the interface of the Cultural and Recreational Sector and the Rest Sector, because they do not obstruct the flow of space around the main buildings in either sector.

Policy 172.

To remove trees encircling the reflecting pool of the Open-Air Theatre to open the view of the reflection of the architecture as intended by Niemeyer.

Gardens **

Two gardens, located to the south and north of the Eastern Car Park, were established in 2009 as spatially semi-independent gardens: (a) the Southeastern Garden is located between the Eastern Car Park and RKIF's Main Entrance Plaza/Car Park, and (b) the Northeastern Garden is wedged between the Eastern Car Park and the Quality Inn hotel. The garden of the Quality Inn hotel (c) is visually and spatially a continuation of the Northeastern Garden, separated by a fence.²³⁶

Southeastern Garden **

The Southeastern Garden occupies a peripheral location along the eastern Boundary Wall, north of the Main Entrance Plaza/Car Park. This garden has a "gardenesque" ornamental character with flowing curvilinear walkways, floral and herbal bedding, and tree groves that create a sense of flow and movement throughout the space. The garden with its variety of matured trees, shrubs, and herbaceous planting, in addition to its pergola, pool, and benches adds to the significance of the garden, which is popular with Tripolitans.



Location of the Gardens component of the planted landscape; Southeastern Garden (a), the Northeastern Garden (b), quality Inn Garden (c).

Adapted from RKIF's AutoCAD Map and UNESCO Landscape Survey by Hana Itani.



Southeastern Garden with its mature date palm grove in the background.



The Southeastern Garden with its diversity of woody plants and landscape features.

Source: UNESCO Landscape Survey, 2023.

²³⁶ The policies in this section exclude that of the Quality Inn Garden as it was not part of the landscape study performed by UNESCO. It is important to survey the Quality Inn Garden and assess its condition and significance in relation to the future of the Quality Inn hotel, so that appropriate policies are drafted in relation to its future.

Northeastern Garden **

The Northeastern Garden is located east of the Quality Inn (former Collective Housing). This garden has a triangular shape, dominated by a curved path and pergola. Like the Southeastern Garden, it was established in 2009 and it is peripheral to the Cultural and Recreational Sector and as such, unintrusive of Niemeyer's conception of the landscape for the Fair. The landscape character is ornamental, with some mature plants, olive trees, and a pergola. Planting along the Boundary Wall consists of *Bougainvillea* and prickly pear, *Opuntia indica*.



The Northeastern Garden is smaller than the Southeastern Garden but it has more diverse planting.

Source: UNESCO Landscape Survey, 2023.



Young Olive trees at Northeastern Garden.

Significance, Survival, Vulnerabilities

The Southeastern Garden is significant because of (a) the diversity of mature planting it contains; (b) the organic design with curvilinear paths and plant beddings that is not common to the municipal gardens; (c) the grove of native trees, a mix olive trees, *Olea europaea*, carob, *Ceratonia siliqua*, umbrella pines, *Pinus pinea* and a mature date palm grove, *Phoenix dactylifera*, and (d) the special garden features such as the pergola with climbers, *Wisteria floribunda*, and ornamental flamboyant tree, *Delonix regia*.

The Northeastern Garden is not as big nor are its plants as diverse as the Southeastern Garden. Nevertheless, it is a relatively mature garden, and the location is peripheral ensuring that it does not impact the spatial quality of the Cultural and Recreational Sector of RKIF.

Policy 173.

To retain the significance of the Southeastern and Northeastern Gardens, including their softscape and gardenesque associated features such as the pergola and water feature and curved network of paths as an added feature of the Fair and recreational landscape whose character does not impact Niemeyer's Modernist design due to their peripheral location.

Policy 174.

To maintain the existing planting beds through expert pruning of trees and palms, appropriate trailing of climbers, and the removal of invasive species.

Policy 175.

To maintain the herbaceous beddings and retain healthy herbs and perennials while replacing dead plants with appropriate species.

Vegetated Car Parks

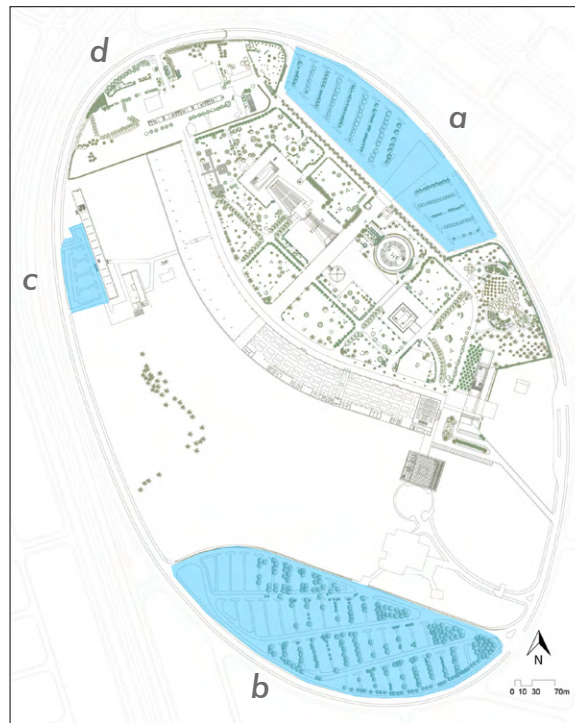
RKIF has four car parks in addition to that of the non-vegetated car park of the Main Entrance Plaza: (a) the Eastern Car Park (44,109 m²), (b) the Southern Car Park (77,737 m²), (c) the smaller Western Car Park on the northwest edge of the site intended to serve the Services Sector, and (d) the Quality Inn Car Park. The total area for the Car Parks is considerable. The policies included in the section focus on the Eastern Car Park, Southern Car Park, and the Western Car Park and exclude that of the Quality Inn Car Park as it was not part of the landscape study performed by UNESCO.²³⁷

Eastern Car Park **

The Eastern Car Park was established post-Niemeyer. This Car Park is separated from the Cultural and Recreational Sector of RKIF by a metal fence that allows for visual continuity. As the gates connecting RKIF from the Eastern Car Park remain locked, it only welcomes visitors to the events/exhibitions taking place within the Fairground. Hence, the general public is denied entry from this point.

The medians were planted with shelterbelt tree species in 1997 when the Cultural and Recreational Sector was landscaped. The trees are well established and large in numbers providing shade in the summer and transforming the Car Park into a green space. According to the landscape vegetation survey in 2023, trees include 60 *Casuarina*, 50 *Acacia cyanophylla*, 40 *Brachychiton populneus* and a couple of *Washingtonia* palms. There are also a few *Oleander* shrubs.

This Car Park is a popular destination for Tripolitans. Families frequent the site during weekdays and weekends. This is partly because public access to the Fairground proper is restricted, but also because the planting has



Location of the vegetated Car Parks component of the planted landscape. Adapted from RKIF's AutoCAD Map and UNESCO Landscape Survey by Hana Itani.



Eastern Car Park includes *Acacia*, *Brachychiton*, and *Casuarina* rows. Source: UNESCO Landscape Survey, 2023.

matured into sizable trees transforming the Car Park into a green space that is generally lacking in the city. Stationary stalls at the southern edge are rented as coffee shops. There is also a stall for bicycle hire.²³⁸

²³⁷ It is important to survey the Quality Inn Car Park and assess the condition and significance of its vegetation in relation to the future of the Quality Inn hotel, so that appropriate policies are drafted in relation to its future.

²³⁸ See Section 3.5.2, page 82.

Significance, Survival, Vulnerabilities

The Eastern Car Park is a sizable open space, successfully planted with deciduous trees that ensure shade in the summer. The vegetated Car Park landscape is significant as a green

buffer improving the local climate within RKIF. The landscape has gained an additional socio-cultural significance having evolved into a popular urban/green space, frequented year-round by Tripolitan families.

Policy 176.

To maintain the Eastern Car Park as an open space with a well-planted landscape, accessible public amenity for Tripolitan families throughout the year, on weekends and weekdays. Special permission can be granted from the RKIF Administrative Board for additional public amenity services in this open space.

Policy 177.

To retain the existing mature trees and augment with additional trees, matching tree species to increase the density of planting and further augment the climatic improvement resulting from the vegetated landscape.

Policy 178.

To maintain the overall health of the trees through expert pruning ensuring that there is a clearance under the tree canopy of 1.7-2 meters to enhance the use of the planted medians by families frequenting the landscape.

Policy 179.

To consider unifying the pavement of medians to better accommodate their use by the public for picnicking and gathering.



View of the Eastern Car Park, looking northwest.

© UNESCO/Maya Hmeidan, 2019

Southern Car Park ***

In Niemeyer's master plan, the Southern Car Park was intended as the main Car Park for visitors to RKIF. Post-Niemeyer changes and the introduction of a peripheral road have cut off the Car Park from the Fairground. Currently, this Car Park is not circumscribed by the RKIF Boundary Wall.

The Southern Car Park was planted extensively in 2013 with a variety of shelterbelt trees, a total of 240 that include: 50 *Acacia cyanophylla*, 55 *Casuarina cunninghamiana*, 40 *Schinus molle* as well as Carob trees, Neem and Albizia trees. As in the Eastern Car Park, mature trees have transformed the landscape into a green/open space; however, unlike the latter, trees and shrubs in the Southern Car Park are in relatively poor condition and in need of management to remove dead trees, broken branches, and invasive plants that have taken over because of the lack of management.

The Southern Car Park has taken on another role. Permission for UNHCR to locate its offices north of the Car Park has transformed this Car Park into a destination for Syrians applying to UNHCR for refugee status. Taxi stations are located in the Car Park as well as street vendors serving those assembled. This is a temporary use, and once the agreement with the UNHCR is terminated, the Southern Car Park should revert to its intended role.

Significance, Survival, Vulnerabilities

The Southern Car Park is a significant vegetated landscape that acts as a green buffer, providing climatic improvement. The potential significance of this large Car Park lies in servicing potential future expansion of the Fairground.

Policy 180.

To maintain the Southern Car Park as a well-planted landscape, accessible as a public amenity space for Tripolitans and refugees alike.

Policy 181.

To retain the existing mature trees and augment with additional trees, matching tree species to increase the density of planting and further augment the climatic improvement resulting from the vegetated landscape.

Policy 182.

To maintain the overall health of the trees through expert pruning, removal of dead trees, and their replacement. Ensure that there is a clearance under the tree canopy of 1.7-2 meters to enhance the use of the planted medians by families frequenting the landscape.

Policy 183.

To consider unifying the pavement of medians to better accommodate their use by the public for picnicking and gathering.



© Jala Makhzoumi, 2022

Southern Car Park with a view to the offices of the UNHCR at the edge of the parking.

Western Car Park Int []

The Western Car Park is the smallest of all RKIF Car Parks. It is located after the western entrance to the Services Sector, west of the Administration Building. This Car Park was not planted and has never been used as a parking area.

Significance, Survival, Vulnerabilities

This Car Park is the smallest Car Park on site. It was planned by Niemeyer to accommodate visitors and users of the Services Sector. However, it is abandoned and hence, nature has taken over and it lies in a state of disrepair.

Policy 184.

To retain the Western Car Park as a feature of the original conception by Niemeyer.

Policy 185.

To rehabilitate through hardscape repair and planting of low maintenance with shelterbelt tree species as in the Eastern and Southern Car Parks.



View of the entrance to the Western Car Park of the Services Sector, looking west, with the security gatehouse concrete structure to the left.

Seaward Landscape Int [S]

This landscape is the space between the Grand Cover and the western site boundary, excluding the western Car Park. The area to the south of the Services Sector behind the Grand Cover was expropriated (in 1968) in view of expanding the RKIF project.²³⁹ Several proposals were discussed with Niemeyer in the 1970/1972 reports (i.e. open-air cinema and planetarium) for this part of the land. However, none materialized. Around 35 mature date palms (*Phoenix dactylifera*), almost 50 years old, seem to have survived from the original site (refer to the image lower right side and bottom of the opposite page).

Other than the cluster of mature date palms to the north of the Western Car Park, the land is naturally vegetated with spontaneous species such as Castor plants, Arundo grass, and Bramble berries.



Location of the Seaward Landscape component of the planted landscape.

Adapted from RKIF's AutoCAD Map and UNESCO Landscape Survey by Hana Itani.



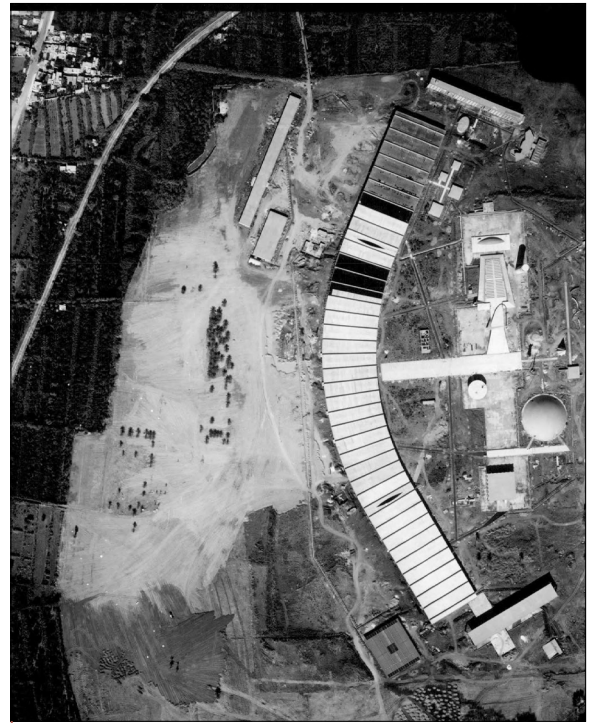
The mature date palm trees as seen west of the Grand Cover.

²³⁹ Decree no. 15489 dated July 22, 1968 expropriation of additional plots for RKIF.

Significance, Survival, Vulnerabilities

The mature date palms are reminiscent of a historic landscape that existed before Niemeyer's project. The date palms are in fairly good condition; however, their survival can be threatened by future development plans for this part of the site. Efforts should be made to protect and integrate these trees in any foreseen development of the site as they are in harmony with Niemeyer's landscape design of islands of palm groves.

Given the location of the site between the two historic cores of Tripoli and El Mina, and knowing that the land where the project was built did not undergo any archaeological investigations, this portion of the site deserves proper assessment to ensure its potential archaeological value is not lost. This proactive approach will contribute to the preservation of the region's cultural heritage while allowing responsible development to proceed. Attention should be given not only to above-ground impact of new development in the Seaward Landscape, but also the potential archaeological deposits below ground.



The RKIF site in 1970, notice the remaining cluster of date palms after the agricultural land of the western part of the site has been cleared.

Source: Lebanese Army, Department of Geographic Affairs*.

Policy 186.

To maintain the existing date palms in the empty land and ensure their protection. To consider the integration of the palms as part of the landscape design of any future proposed design for the development of this vacant part of the site.²⁴⁰

Policy 187.

To ensure that archaeological investigations accompany any future development at the Seaward Landscape to ascertain the absence of archaeological deposits/ archaeology at the site.



General view of the Seaward Landscape.

²⁴⁰ Refer to the "Long-Term Recommendations for the Planted Landscape" in Chapter 5, Section 5.7.2.



© UNESCO/Ieva Saudargaitė, 2023

The abandoned
Administration
Building.



CHAPTER 5

Managing RKIF - General Considerations and Recommendations

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MANAGING RKIF - GENERAL CONSIDERATIONS AND RECOMMENDATIONS

5.1 Introduction

Fairs are typically the temporary establishment of commercial and entertainment activities in a location. Initially, these were related to religious holidays, giving merchants the opportunity to sell their wares, and were often held adjacent to religious structures thereby providing a means for the church/temple to raise funds. They are cited as far back as the Old Testament.²⁴¹ Because of their temporary nature, very few fairgrounds have remained intact. There are buildings that remain from fairs, like the Eiffel Tower in Paris, but almost nothing on par with the intactness of RKIF. It is a unique site in this respect, with its over 20 buildings still extant.

World's Fairs, or as they are known in French, *Exposition Universelle*, showcase nations and their achievements.²⁴² Seattle's 1962 World's Fair is an exception, one of the few that has many permanent buildings still extant. However, unlike RKIF, it was designed by several different architects. World's Fairs have now fallen out of fashion; nonetheless, there continue to be World Expos. The last World Expo took place in Dubai in 2022.²⁴³

The World Heritage Committee recognized the uniqueness of the RKIF site by inscribing it on the World Heritage List in January 2023. The ICOMOS World Heritage Panel evaluated the

site on behalf of the World Heritage Committee and also sent an expert mission (July 2022). It was an emergency listing as the World Heritage Committee understood the fragility of the concrete, and the dire economic condition in which the State Party currently is. The World Heritage Committee's recommendations are verbatim those that ICOMOS (International Council on Monuments and Sites) made.

Based on the research performed for this CMP, it is evident that RKIF will have to undergo a transformation to first, make the site and buildings safe for current users and visitors and stabilized enough to be removed from the List of World Heritage in Danger, and second, to revitalize the structures and site with a variety of uses that guarantees a sustainable future for RKIF and Tripoli. The recommendations for the approach to the Niemeyer-designed buildings mainly include restoration of exteriors and rehabilitation of interiors; this differs from the recommended approach to the landscape, which is selective removal. Below are the directives from the World Heritage Committee, a discussion on the future development of the site, adaptive reuse philosophy, inspirational examples, landscape rehabilitation, other recommendations, and a list of priorities for consideration.

²⁴¹ The International Association of Fairs and Expos (IAFE), *History of Fairs: American Fairs and Exhibitions*, <https://fairsandexpos.com/history-of-fairs/> (accessed November 12, 2023).

²⁴² Wikipedia, *World Fairs*, https://en.wikipedia.org/wiki/World%27s_fair#World_Expos_2 (accessed November 12, 2023).

²⁴³ *Ibid.* (accessed November 12, 2023).

5.2 World Heritage Committee Directives for RKIF

The World Heritage Committee directed the State Party (Lebanon) to perform certain tasks and follow through on recommendations provided at the time of listing by February 2024. These tasks are essential to achieve certain mandatory requirements for all World Heritage sites, including those that are on the Danger List like RKIF. One of the foremost tasks is to organize a **reactive monitoring mission** to establish the Desired State of Conservation for Removal (DSOCR) of the site from the List of World Heritage in Danger. There is also the requirement to provide **national heritage designation** for RKIF so that it is legislatively protected by the laws that safeguard cultural heritage in Lebanon, which should be enacted as quickly as possible; this should take into account the **clarification of boundaries** suggested by the World Heritage Committee and ICOMOS below.

In addition, the World Heritage Committee expects an **in-depth conditions assessment** to be performed. As the site is now on the World Heritage in Danger List, a major requirement for RKIF is to reach a state of acceptable conservation in order to be removed from the Danger List. Thus far, only two areas of the complex have been studied, the Arch and the soffit below the Open-Air Theatre, and by no means, exhaustively. This task requires conservation expertise in concrete, its deterioration, and its repair. It also includes NDE (Non-Destructive Evaluation), destructive probes and additional cores, laboratory analyses, structural stability analyses, and seismic resistance, etc., but should additionally include paints and finishes analyses for each structure. Given the number of structures and their condition, this task alone could take six months or

more including drafting a conditions assessment report for each structure with recommendations for repair. However, without it, inappropriate conservation interventions could occur.

The World Heritage Committee also recommended that a **digital archive** for the site be developed, given the diverse locations of archival materials. In this manner, there would be a digital repository with no possibility of loss of background and more recent information. The point of documentation is to also provide future professionals, including conservators, architects and engineers, with the studies, reasoning, and materials and methods of implemented repairs. By providing a **digital repository**, it would open research on the site to scholars around the world interested in Modernism and Oscar Niemeyer as well as RKIF and similar fairgrounds.

Clearly, the dynamics of the 21st century, including the ubiquitous use of the World Wide Web, have not remained conducive to the concept of World's Fairs. In addition, because of the prolonged construction period, the Lebanese Civil War, and subsequent attempts at the reuse of the site, RKIF was never utilized for its intended purpose, that of a permanent international fairground. Now as a World Heritage Site, interventions will have to **adhere to the Operational Guidelines for the Implementation of the World Heritage Convention**, and major ones will require consultation with and approval by the World Heritage Centre according to article 172 of the *Operational Guidelines*.²⁴⁴ Thus, **Heritage Impact Assessments** (HIA) should apply not only to the core zone of original Niemeyer-designed structures but also to the remainder of the site within the elliptical boundary,²⁴⁵ which the World

²⁴⁴ Article 172 "The World Heritage Committee invites the States Parties to the Convention to inform the Committee, through the Secretariat, of their intention to undertake or to authorize in an area protected under the Convention major restorations or new constructions which may affect the Outstanding Universal Value of the property. Notice should be given as soon as possible (for instance, before drafting basic documents for specific projects) and before making any decisions that would be difficult to reverse, so that the Committee may assist in seeking appropriate solutions to ensure that the Outstanding Universal Value of the property is fully preserved," <https://whc.unesco.org/en/guidelines/> (accessed April 2, 2023).

²⁴⁵ Consultants who prepare HIAs should have a working knowledge in World Heritage policy (great familiarity with the *Operational Guidelines* and preferably, experience at expert missions), who also have expertise in design.

Heritage Committee and ICOMOS both viewed as part of the World Heritage property and not the buffer zone in contrast with the nomination, a discrepancy that the World Heritage Committee expects to be resolved through a joint World Heritage Centre/ICOMOS reactive monitoring mission.

In fact, the World Heritage Committee recommended **land-use and zoning regulations** not only for the remainder of the elliptical site but also for the perimeter beyond the ellipse boundary, which will most likely become the buffer zone once the exact boundaries of the property have been better defined. Therefore, even new construction on the perimeter would conceivably have to undergo a Heritage Impact Assessment, in addition to construction within the

ellipse. The 2019 KIC (Knowledge and Innovation Centre) project proposal for a portion of the ellipse adjacent to and within the Services Sector of the Niemeyer-designed Fair, is specifically referenced by the World Heritage Committee's decision as an example of a project that would require a Heritage Impact Assessment, as are **the revision of the urban master plans for El Mina and Tripoli**.²⁴⁶

The World Heritage Committee further expects that a **management structure is to be set up** by February 2024 that also includes "among its members, representatives of the cultural heritage protection institutions, professionals and academic organizations and the civil society to ensure inclusive and informed decision making."²⁴⁷



A visitor management plan is needed to protect and present the site to the public.

@ Assaad Seif, 2018

²⁴⁶ ICOMOS, *Evaluations of nominations to be processed on an emergency basis. ICOMOS report for the World Heritage Committee. 18th extraordinary session, Paris (France), 24 January 2023* (Paris: ICOMOS, 2023), <https://whc.unesco.org/en/sessions/18EXTCOM/documents/> (accessed April 9, 2023).

²⁴⁷ UNESCO World Heritage Convention, *18th extraordinary session of the World Heritage Committee, 24-25 January 2023*, <https://whc.unesco.org/en/sessions/18EXTCOM/documents/> (accessed April 9, 2023).

5.3 Future Development and Use of the Fair

From the comparative analysis performed in Chapter 3 as part of this CMP's identification of significance, there was nothing representing an intact international fair on the World Heritage List or Tentative List until now. There are remnants of international fairs that are on the World Heritage List, *i.e.* specific buildings that have survived, but nothing on the scale of RKIF, which incorporates over 20 structures and the original site across an area of 72 ha.

The emergency nomination did not include a management plan. There is currently little budget to pay the salaries of the few employees that remain to administer the site. One-third of the site is under the jurisdiction of El Mina and two-thirds under that of Tripoli – it was never made into a single plot. A **management plan** must be developed as soon as possible to detail how the site will be used, administered, promoted, and interpreted for visitors based on international standards. For instance, could the original underground shelters be reused as cisterns as part of a sustainable program to capture rainwater for the reflecting pools? RKIF's surrounding area has gone from citrus groves to urban overdevelopment – perhaps Niemeyer took advantage of the irrigation of the orchards for the reflecting pools? There is no archival or physical proof of this but there is a large underground reservoir behind the stage of the Open-Air Theatre that was meant to fill the Water Tower, although never used.

In addition to a management plan, a **risk mitigation and preparedness plan** should also be developed, along with an **accessibility plan**. Risk mitigation and preparedness covers emergency planning for a variety of risks, such as earthquake, fire, flooding, armed conflict, etc. Accessibility includes design guidelines for carefully making as much of the site as possible accessible for those who are differently enabled, whether these be individuals in wheelchairs,

using a cane, vision and/or hearing impaired, etc., without significantly impacting Niemeyer's vision. A visitor center could potentially provide computer monitors for interactive virtual visitation if the buildings have undergone video and/or laser-scanning documentation.

Development of a **fundraising plan** is also important and can offer structured steps to procurement of grants, researched identification of relevant funding bodies, ideas for promoting the site to investors, etc. For instance, application for the \$150,000 grant from the Brazilian Fund of the Ministry of Foreign Affairs through the Embassy in Lebanon is an obvious choice. The potential for other collaborations with Brazil should be explored. Could joint architectural exhibitions be held with Brasilia? Could Brazilian products be promoted on site and Lebanese ones in Brazil?

Additionally, there is a real need for a **preservation master plan specifically for the RKIF ellipse** that would envision not only how the site is used, but also how it is connected to the rest of the city. Currently, outside of public events, access is limited to those who pay an annual membership fee or are part of educational tours. In addition, the site is surrounded by highways making pedestrian access hazardous, yet the site is considered an urban oasis because of its mature vegetation. These types of green spaces are becoming increasingly important as overdeveloped cities become heat-trapping islands; they provide habitats, biodiversity, and opportunities for the reintroduction of native plant and animal species as well as the retention of water; and they perform as a lung within urban settings in the face of climate change. Perhaps a series of pedestrian/bicycle bridges could also be integrated to connect the site to the surrounding residential development and the shoreline.



The Guest House courtyard during rehabilitation, 2017.

In fact, a **design competition to reconceive the entire boundary of the site** would be appropriate, permitting more transparency (more wrought-iron fencing as opposed to concrete barriers) and more entry points linked to pedestrian/bicycle bridges. A preservation master plan could also include proposed **adaptive reuses (new functions)** for the structures that are compatible and respect Niemeyer's designs, as well as **aesthetic guidelines** for both adaptive reuse and new structures erected outside of the built Fair but within the original elliptical site.

Within a preservation master plan, consideration should be given to maintaining the original names of Niemeyer's structures as part of their new functions. For instance, if the Lebanon Pavilion becomes a restaurant, perhaps it should be called the Lebanon Pavilion Restaurant. Or if the Water Tower becomes a coffee bar, then it could be the Water Tower Coffee Bar. If the Space Museum becomes a gallery, it could be the Space Museum Gallery. Keeping the Niemeyer names will evoke the original intended functions of the structures so that they are not lost or forgotten.



Evidence of the Civil War throughout the site needs to be carefully evaluated and potentially preserved and interpreted. In the Water Tower, there is damage to the slab from an unexploded ordnance.

The preservation master plan would **refine levels of acceptable change** and **define opportunities for change** that closely follow, balance with, and build on the conservation policies presented in Chapter 4 for all the Niemeyer structures. The exteriors of the buildings should be more pristinely restored. For building interiors that have been lost, there is less integrity. Although some original drawings specify some of the finishes for which there are remnants of evidence, it is less critical to replicate the original finishes on the interiors and more important to retain the surface finish and material integrity of the exteriors.



The courtyard and garden of the Guest House after rehabilitation.

For certain structures, however, where there are remnants of original finishes, a stricter approach to the interiors may be warranted. In the case of the Experimental Theatre, which was never completed, there is more flexibility for the interior finishes. The Model Residence though, being a direct reference to *Casa das Canoas*, can be reconstructed inside and out as a tribute to Oscar Niemeyer in the form of a museum that details the evolution of the site from citrus groves to futuristic Fairground. The Lebanon Pavilion may also warrant a more careful interior conservation, given its symbolic importance to the site. Nevertheless, in all cases, careful consideration of interior finishes is needed so that they remain sympathetic to Oscar Niemeyer's vision and maintain compatibility.

The preservation master plan can also consider existing proposals for the site. As an example, how would the proposed addition of solar panels to the roof of the Grand Cover, a very sustainable approach to the provision of electricity for the site, impact the OUV of that structure and the site overall? Another

consideration is the treatment of evidence of the Civil War; it should be carefully evaluated and potentially preserved and/or interpreted.

The preservation master plan can refer to Niemeyer's well maintained structures elsewhere to draw inspiration on the treatment and use of similar projects or structures. A good example of a Niemeyer-designed structure that has similar language to RKIF and has been well maintained is the Mondadori Building located in Segrate on the eastern edge of Milan, Italy. The Mondadori Building has remained technically unchanged since its construction, in both form and content. The project was designed in 1968, commissioned by Giorgio Mondadori, president of Arnoldo Mondadori Editore (AME). Niemeyer referenced the Itamaraty Building (1964) in Brasilia. The current owner, Generali, a real estate developer that leases the property back to AME, implemented a careful restoration of the concrete from 2003-2006, conserving the wood-graining impressions on the formwork. The lighting system was restored in 2017 by lighting designer Mario Nanni.²⁴⁸

²⁴⁸ Guiding Architects, "Niemeyer's first 50 years in Milan: the Mondadori Group headquarters," (November 29, 2019) <https://www.guiding-architects.net/niemeyer-50-years-milan-mondadori-group/> (accessed November 18, 2023).

Segrate, headquarters of the Arnoldo Mondadori Editore company. It was built from 1968 to 1974 based on a design by Oscar Niemeyer, with the collaboration of Luciano Pozzo and Glauco Campello.

Source: Maurizio Grandi and Attilio Pracchi, Milan. *Guide to modern architecture*, Bologna, Zanichelli [1980], 1998: 380, https://commons.wikimedia.org/wiki/File:Segrate_sede_Mondadori.jpg (accessed April 4, 2024).



The preservation master plan can consider whether post-Niemeyer structures should be retained or replaced, such as the Secondary Entrance Structure and the Guardhouse at the Main Entrance Plaza. If the Secondary Entrance Structure was to be replaced, it could be part of the competition for the redesign of the site's boundary. The same would apply to the Guardhouse at the Main Entrance Plaza. The preservation master plan can also define selective removals required to reestablish Niemeyer's original oblique pathways per the CMP landscape-related policies.

RKIF represents the frustration of the Tripolitans for its unrealized economic progress and must be reactivated in order to survive and serve the city.²⁴⁹ It has tremendous potential, including economic and cultural value within an urban context. Yet it remains in a state of uncertainty and instability, the latter particularly as regards to the fragility of the concrete. There **needs to be flexibility and vision about its future** so as to create a

vibrant cultural, educational, recreational, and commercial destination that economically benefits the city of Tripoli and its residents.

Whatever future uses occur on the site, the key to their permissibility is that they do not impact the Outstanding Universal Value (OUV) of the site. OUV consists of the justification for the criteria under which the site was nominated, in this case, criteria (ii) and (iv),²⁵⁰ combined with the overall authenticity and integrity of the site. The maintenance of OUV is the goal of any World Heritage site through conservation and interventions that enhance the site's cultural significance. A **values-based approach**, as elucidated by the *Burra Charter*,²⁵¹ is the appropriate method for understanding the site's cultural significance and, through it, acceptable forms of adaptive reuse. According to the *Burra Charter*, cultural values can include historic, aesthetic, scientific, social, and spiritual values. The first four of these apply to RKIF.

²⁴⁹ See Chapter 3, Section 3.6.

²⁵⁰ As a reminder, criterion (ii): *exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town-planning or landscape design*; Criterion (iv): *be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history*.

²⁵¹ Australia ICOMOS, *The Burra Charter: The Australia ICOMOS Charter for the Conservation of Places of Cultural Significance*.

Proposals for adaptive reuse will have to be evaluated on a case-by-case basis by the newly established conservation management team per respective policies on the role of conservation professionals (Policies 20-21) and/or management body per the World Heritage Committee directives. This managing body should review proposals and make recommendations for acceptability. Major proposals for interventions should be approved by the World Heritage Centre per article 172 of the *Operational Guidelines*. These major proposals could additionally undergo public hearings so that community representatives could have input.

From the community survey, RKIF is viewed as a “green lung” (park) and cultural site where performances and exhibitions are organized and take place. The site is also used for recreation and exercise, and universities and planned tours use it for educational purposes. The Fairground has for decades been a site for walks by local residents and intermittent use by skaters, an evocative location for film shoots, festivals and art exhibitions. None of these functions are necessarily at odds with RKIF’s OUV if handled sensitively. There are two theater structures on site, the Open-Air Theatre and the Experimental Theatre. Following rehabilitation, these two buildings can easily retain their original function and be reused for performances. In addition to performances, other compatible uses of buildings on site might include museums, galleries, dining, commerce and retail, studios (for instance, martial arts, yoga, gym, artists or design), exhibitions, offices, innovative enterprises, public library, botanical garden for native endangered and rare species, etc. Essentially, the site could be reused as a cultural arts complex.

5.3.1 Knowledge and Innovation Center

The proposed development of a Knowledge and Innovation Center by the Tripoli Special Economic Zone (TSEZ) on 75,000 sqm of RKIF land west of the Grand Cover includes the buildings of the RKIF’s Services Sector: the Administration Building and Customs-Firehouse-Depots Building, designed by Oscar Niemeyer.²⁵² Although the proposed project promises to rehabilitate Niemeyer’s Administration Building and Customs-Firehouse-Depots Building, it also consists of developing 57,000 sqm of the site, just behind, and adjacent to, the 750-m long Grand Cover structure, which is one of the most significant elements of the RKIF complex. Conceptually, it is twice as much area as that underneath the Grand Cover.

In 2019, TSEZ launched an international design competition based on UNESCO-UIA (International Union of Architects) guidelines.²⁵³ The competition brief required the rehabilitation of the Administration and Customs-Firehouse-Depots Buildings as well as 57,000 sqm of additional built-up area, while highlighting RKIF’s listing on the World Heritage Tentative List at the time.²⁵⁴

Given the sensitive nature of the Niemeyer-designed RKIF site, the most appropriate solution was identified through the competition for the new built-up areas to be underground (see below figures). In fact, the first two prizes went to designs that proposed mostly underground structures, thereby respecting Niemeyer’s design. However, despite the compatibility of the new function, in case the underground solution identified by the competition is not adopted by

²⁵² The Tripoli Special Economic Zone (TSEZ) was awarded 75,000 sqm of RKIF land by presidential decree to be occupied by a Knowledge and Innovation Center for a period of 30 years.

²⁵³ International Union of Architects International Competitions Commission, *Guidelines. UIA Competition Guide for Design Competitions in Architecture and Related Fields* (Paris: UNESCO-UIA, 2020).

²⁵⁴ Republic of Lebanon, Tripoli Special Economic Zone, “Report of the Single-Stage International Architectural Design Competition Brief for the Knowledge and Innovation Center, Tripoli - Lebanon,” (February 13, 2019): 8, <https://www.uia-architectes.org/wp-content/uploads/2021/07/Competition-Brief-KIC-V-10.32-FINAL-13FEB2019-Master-Copy.pdf> (accessed October 20, 2023).

TSEZ, the programmatic equation itself remains excessive in terms of built-up surface area in such close proximity to original Fairground buildings. Considering the need for a “buffer zone” between the original buildings and new developments on the available undeveloped land in order to maintain as much as possible the original setting in its current location, the large amount of required square meters could jeopardize the integrity of the site and potentially, impact its OUV. This again points to the need

for a preservation master plan and management plan that define zoning regulations in the non-developed area of the ellipse, particularly since both the World Heritage Committee and the ICOMOS World Heritage Panel are of the opinion that this area should be part of the World Heritage site and not its buffer zone. The KIC project proposal was specifically called out by the World Heritage Committee as an example of an intervention that should undergo a Heritage Impact Assessment.



Mass Plan by MDDM Architects, first prize winners of the KIC competition. The proposed architecture is fully embedded and underground. The mass plan composition was conceived by following the directive lines generated by the existing Oscar Niemeyer volumes on site which makes this project fully integrated with its surroundings.

Source: Courtesy of MDDM Architects - Imad Aoun - Nadim Younis



Section through the underground architecture by MDDM Architects. The interior was designed in a modular way rendering it highly flexible to the needs of the end-users.

Source: Courtesy of MDDM Architects - Imad Aoun - Nadim Younis.

© MDDM Architects - Imad Aoun - Nadim Younis, 2019

5.4 Recommendations for Future Planning

RKIF has never been an integral part of the urban fabric of Tripoli. Since the launch of its construction in 1963-1964 and until the end of the Civil War in 1990, the Fair has always been a construction site enclosed onto itself. The urban extensions towards the Fair on the east side, the rehabilitation works on part of its buildings following the War, the modest seasonal activities undertaken in the exhibition pavilion or even the summer festivals held in the Open-Air Theater or elsewhere on site and, finally, allowing local residents to enter to do their daily sport, have changed nothing.

Today, the integration of the Fair into the urban fabric of Tripoli and El Mina is a social, economic but also environmental issue to consider. The surveys and interviews carried out with the population and local stakeholders as part of the CMP's development, highlighted the demand to reintroduce life into the Fair and to develop adapted activities capable of contributing to the recovery of the local and even regional urban economy. This obviously requires significant initiatives to be taken by the concerned authorities.

As discussed in Chapter 2 of the present document, following the rejection of the comprehensive master plan of 2002 developed by Diran Haramandyan, the Higher Council of Urban Planning approved separate urban planning for Tripoli and El Mina, which is still applicable to this day²⁵⁵. This has caused fragmentation in the urban fabric of the agglomeration and marginalization of the historical and modern urban heritage, including the Fair itself. To highlight the latter, a return to the urban master plans of Tripoli and El Mina is essential.

Rethinking the Urban Master Plans of Tripoli and El Mina is necessary to:

- Give the Fair site a single legal and regulatory entity, and consider the entire site within the ellipse a protected heritage site. This also requires, of course, an amendment to the new law for the reorganization of RKIF (Law 274), which proposes that the area to be protected and the buffer zone are within the elliptical site.



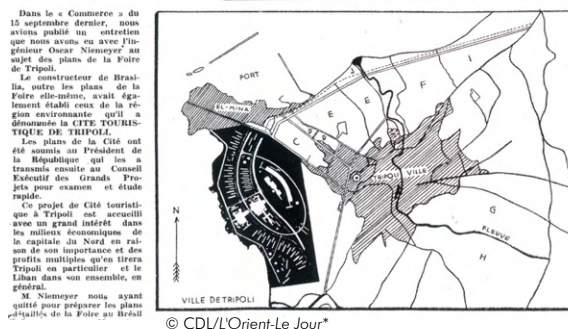
Potential visual corridors between the city and RKIF and between the latter and the sea.

This relationship with the sea was proposed by Niemeyer (below) in what he called "the urban plan of the touristic city of Tripoli".

Adapted from Google Earth by Mousbah Rajab.

LE PLAN D'URBANISME DE LA CITE TOURISTIQUE DE TRIPOLI

Des mesures doivent être prises d'urgence en vue d'empêcher la construction de bâtisses disparates dans la région avoisinant la Foire
De notre correspondant à Tripoli, Azmi KASSAB



Source: Azmi Kassab, "Le plan d'urbanisme de la cite touristique de Tripoli," *Le Commerce du Levant* (October 27, 1962).

²⁵⁵ Harmandyan, *The General and Detailed Master Plan of Tripoli, Al Mina, Beddaoui and part of Ras Masqua*. Refer to pages 53-54 in Chapter 2 for the 2002 master plans of Tripoli and El Mina.

- Consider the immediate urban setting surrounding the RKIF site as a buffer zone and modify regulations to take this fact into account. **New zoning regulations** need to keep buildings along the perimeter at the current height and much lower on the side of the site facing the sea, which is less developed. However, zoning regulations at the perimeter of the ellipse need not be onerous. They could simply codify the existing heights as limitations, with the taller structures where they currently are on the Tripoli side and the low-rise structures on the El Mina side. Zoning regulations should also be instituted for the undeveloped parts of the elliptical site. Here, height limitations will need to respect Niemeyer's low-rise Fairground so as not to compete with the existing structures.
- Identify and protect the visual corridors between the city and the Fair and between the latter and the sea. This will take into account, as much as possible, Niemeyer's directives in the urban plan he established.
- Protect and enhance all the urban heritage of Tripoli and El Mina, including the Fair and Tripoli's train station, and establish spatial (and regulatory if possible) continuity between them.

The request to **consider the Fair site as part of the public space of Tripoli and El Mina** came up several times during the surveys and interviews carried out with the population and local stakeholders. Public access to the Fair site is one of the conditions for animating it. Taking into account the financial challenges faced by the Fair Administration, it is appropriate to propose a process which, ultimately, will allow daily unrestricted access to the site. The introduction of small commercial activities in the Bars designed by Niemeyer on the north side of the Grand Cover and in other open spaces could contribute to the maintenance of the site.

Organizing an international workshop for the revitalization of RKIF, a proposal

which dates back to 2005 and was discussed previously, is still considered necessary today. The idea is to organize a workshop at the Fair, to which national and international multidisciplinary experts would be invited to debate its future role in light of the various local and global political and economic changes that have occurred since the 1960s, and the evolution of the concept of universal expositions.

This workshop should propose types of activities to introduce into the site to revitalize the Fair and revive the local economy. It must also relate to the governance of the Fair in light of the new RKIF Law. 274/2022, and now, the site's World Heritage status. The workshop, however, should preferably be organized following the drafting of the preservation master plan, so that there is reaction to and feedback for the concepts brought forth by the preservation master plan.



Location of the main cultural heritage of Tripoli and El Mina.

Adapted from Google Earth by Mousbah Rajab.



© UNESCO/Maya Hmeidan, 2022

Location of the Bars within the RKIF site.

5.5 Adaptive Reuse Philosophy

The successful design approach for adaptive reuse demands the resolution of many complex issues related to the program, budget, and physical constraints of an existing structure. Those design solutions could require the creation of new spaces in an existing building and/or the addition of a new structure. Melding the old and new in an appropriate and sensitive way is a challenge. Successful adaptive reuse mandates that these spaces must not only satisfy the functional needs of the users but must also contribute to the respect of the functions housed. The design layouts, materials, lighting, and all other project details must be carefully selected and arranged to symbolically express these values; moreover, they must complement each other so that the overall composition instills the proper esteem for the institution to be housed, while simultaneously creating a comfortable environment that will uplift anyone visiting or working in that building.

Adaptive reuse also demands an adeptness at coordinating the weaving of new interventions and infrastructure into historic buildings so as to minimize, if not completely mitigate, their impact. This requires that engineering infrastructure upgrades are inserted with surgical precision in any interstitial spaces, in order to disturb as little as possible original finishes and maintain the maximum authenticity of fabric. When design interventions interact with the original building fabric, these should endeavor to ensure that these design moves respect the original and that both original and new interventions heighten awareness of each other. Adaptive reuse is the ultimate act in sustainability, and new modifications to historic structures are a way of enhancing the original and fulfilling programmatic requirements while providing beautifully designed interventions of our era.

5.6 Inspirational Comparative Case Studies

5.6.1 Adaptive Reuse Examples

Some examples are given to illustrate how other organizations have creatively dealt with complexes that are of a large size, or have a similar program, or were built with a rigid program that can make adaptive reuse a challenge. The examples provided below include a World Heritage site that was once utilized for coal extraction, a park in São Paulo with the landscape designed by Otávio Augusto Teixeira Mendes based on a proposal by Roberto Burle Marx and all of the pavilions designed by Niemeyer, an airport terminal at JFK, and the Seattle World's Fair from the same era. In addition, two examples are given of alterations for accessibility purposes as well as two examples of landscape mitigation approaches. The chosen examples aim to show how creative reuse and innovative solutions can be designed and implemented on heritage sites while adopting sensitive and compatible

conservation approaches. RKIF's inscription on the World Heritage List should not be seen as a restriction to developing the site but rather, as an opportunity for its reuse.

5.6.1.1 Zollverein Coal Mine Industrial Complex, Essen, Germany

A good example of a World Heritage site listed in 2001 that has been converted into a cultural arts center is the Zollverein Coal Mine Industrial Complex in Essen, Germany. With a master plan and management plan developed by OMA (Office of Metropolitan Architecture established in 1975 by Rem Koolhaas) at the time of its listing,²⁵⁶ the interventions to the 100-hectare site both conserve and enhance OUV. Gradually, the various structures including the coking plant were converted for "museums, dance, music, theatre, culinary art, and light" and now the site features "dining, design and architecture, handicraft and the creative industry."

The Zollverein Coking Plant of the World Heritage site of the Zollverein Coal Mine Industrial Complex with the introduced ice rink in the center.

Source: Jochen Tack, Zollverein Coal Mine Industrial Complex, Germany, Zollverein Foundation, <https://visitworldheritage.com/en/eu/zollverein-coal-mine-industrial-complex-germany/b0b631c5-ea55-4717-9141-dcf745ee052d> (accessed November 4, 2023).



²⁵⁶ The design firm that catalyzed a good deal of planning for this complicated industrial heritage site and program was the firm OMA. The current program that has been adapted over time is quite interesting as they have converted a good portion of the site into a design and cultural arts center - to name a few uses. Refer to Hermann Marth (editor), *Zollverein: Heritage Site and Future Workshop*, https://issuu.com/detail-magazine/docs/zollverein_world_heritage (accessed November 22, 2023).



The World Heritage site of the Zollverein Coal Mine Industrial Complex.

Source: Tuxyso, Aerial photograph of UNESCO World Heritage site Zeche Zollverein in Essen, Wikimedia Commons, https://commons.wikimedia.org/wiki/File:Zeche_Zollverein_Schacht_12_Luftaufnahme_2014.jpg (accessed April 5, 2024).

The motto for the site's intervention has been "preservation through conversion" reflecting its diverse adaptive reuse combining "history, culture, creativity, gastronomy, and recreation." In addition to Rem Koolhaas, world-renowned architect, Sir Norman Foster, converted the boiler house for Design Zentrum Nordrhein Westfalen, and SANAA designed a new building on site occupied by the Folkwang University of the Arts.

The largest building, the coal washing building, was converted by Rem Koolhaas with local architects, Heinrich Böll and Hans Kramel, and now houses the visitor center, a museum, a

multimedia exhibition, and the organization Denkmalpfad ZOLLVEREIN (Monument Path ZOLLVEREIN), which conducts a variety of guided tours through the site. The former miner's washrooms (PACT Zollverein) are used for dance, performance, theater, media, and visual arts organized by Performing Arts Choreographisches Zentrum NRW Translandschaft Ruhr.

The site also hosts a swimming pool and skating rink in addition to a play area and viewing point. The World Heritage site now serves 150 million visitors per year.²⁵⁷

²⁵⁷ Zollverein Foundation, *Zollverein UNESCO World Heritage Site: The Cultural Heart of The Ruhr Area*, 2012, https://www.zollverein.de/app/uploads/2018/02/Zollverein-UNESCO-World_Heritage-Site.pdf (accessed April 9, 2023).

5.6.1.2 Ibirapuera Park, São Paulo, Brazil

Located in the dense urban setting of São Paulo in Brazil, the Ibirapuera Park dates to 1954 and covers 158 hectares. Designed by Oscar Niemeyer, the park's buildings are similar to RKIF in the sense that they appear as sculptural objects in the landscape. Both the park and Niemeyer's buildings are designated national landmarks by the National Historic and Artistic Heritage Institute.²⁵⁸

The park is described as "a green oasis in the heart of the concrete jungle."²⁵⁹ Not only does the park function as a green "lung," but it is also a cultural center hosting concerts in a music hall, museums and events, like São Paulo Fashion Week. It is considered one of the best parks in the world and is the most visited park in South America.²⁶⁰

In terms of adaptive reuse, some of the buildings within the park have changed use over time. The hardscapes also have changing programs: they are sometimes used as pedestrian pathways and at other times they are used for skateboarding.



© Kyle Normandin, 2019



© Paul Gaudette, 2019

Above and Below Multi-functional spaces at Ibirapuera Park, i.e. roller skating is a popular activity.



© Fernando Stankuns/Wikimedia.com

Ibirapuera Park in São Paulo, Brazil is landscaped by Otávio Augusto Teixeira Mendes based on an initial proposal by Roberto Burle Marx with Oscar Niemeyer having designed the park's many pavilions. It features many similarities to RKIF stylistically and in the fact that it is in a dense urban setting.

Source: Fernando Stankuns, *Parque do Ibirapuera, São Paulo*, (2008), Wikimedia, https://commons.wikimedia.org/wiki/File:Parque_do_ibirapuera_visto_do_c%C3%A9u.jpg (accessed April 1, 2024).

²⁵⁸ Wikipedia, *Ibirapuera Park*, https://en.wikipedia.org/wiki/Ibirapuera_Park (accessed November 13, 2023).

²⁵⁹ Nicholas Gill, "A Green Oasis in the Heart of the Concrete Jungle," *New York Times* (2014).

²⁶⁰ Wikipedia op. cit.

5.6.1.3 TWA Hotel, New York, NY

Another interesting adaptive reuse case study is the conversion of the former TWA terminal at JFK Airport in New York City into the lobby for the TWA Hotel in 2017. Designed by Eero Saarinen and completed in 1962, the building was symbolic of the jet age and operated as a terminal until 2001.²⁶¹ It was designated a local landmark by the New York City Landmarks Preservation Commission (LPC) in 1994 and was inscribed on the National Register of Historic Places (NRHP) in 2005.²⁶² The JetBlue terminal, designed by Gensler and completed in 2008,

encircled the back side of the TWA terminal. The airports in the New York metropolitan region are operated by the Port Authority of New York and New Jersey (PANYNJ). The first tender for adaptive reuse proposals issued by PANYNJ failed to solicit acceptable proposals. The second time around, the winning proposal was for the TWA Hotel, making it the only on-airport hotel at JFK. Now considered a “destination” hotel, the décor celebrates the jet age. The terminal has been restored and is used as the entry lobby to the hotel building featuring lounges, bars, and restaurants.



The decommissioned Saarinen-designed 1962 TWA terminal (center), an LPC- and NRHP-designated landmark, was adaptively reused as the lobby of the TWA Hotel, the first on-site hotel at JFK airport.

Source: Steve Knight, Eero Saarinen's 1962 TWA Flight Center at Idlewild, New York, (2020), Flickr, <https://www.flickr.com/photos/kitmasterbloke/49488183937/in/photostream/> (accessed April 5, 2024).



View of the interior of the TWA terminal, now functioning as the lobby for the TWA hotel.

Source: Steve Knight, Eero Saarinen's 1962 TWA Flight Center at Idlewild, New York, (2020), Flickr, <https://www.flickr.com/photos/kitmasterbloke/49488133257/> (accessed April 5, 2024).

²⁶¹ Jen Woo, “The TWA Hotel Turns an Abandoned Airport Terminal into a Mid-Century Dream,” *Dwell*, <https://www.dwell.com/article/twa-hotel-jfk-airport-eero-saarinen-open-for-reservations-d4ac1649> (accessed April 10, 2023).

²⁶² Wikipedia, *TWA Flight Center*, https://en.wikipedia.org/wiki/TWA_Flight_Center (accessed April 10, 2023).

5.6.1.4 Seattle Center, Seattle, WA

In 1962, Seattle, WA was the location of a World's Fair known as the Century 21 Exposition. Originally, the idea of having a fair was conceived of as the 50-year commemoration of the Alaska-Yukon-Pacific Exposition of 1909. However, Sputnik's launch in 1957, along with the limited time allotted to organize a fair, convinced planners that their idea was antiquated and that the fair should reflect the new Space Age/Space Race. The Bureau of International Expositions was lobbied and the Century 21 Exposition became an official World's Fair. An area of 74 acres was allocated. (By comparison, New York's World's Fair of 1963-1964 encompassed 646 acres.)

From the very beginning, the fairground was designed with the intention of being converted into a new civic center following the closure of the fair. The temporary buildings were torn down but many of the more permanent buildings still remain and are part of what is now known as the Seattle Center, which includes museums, theaters and exhibit spaces along with a park.²⁶³ The Century 21 Center signed a five-year lease with the City of Seattle in 1963 to operate the new center, but

due to money constraints, lasted only until 1965. The Seattle Center Foundation was established in 1977, the 15-year anniversary of the fair. In 1990, the Seattle Center 2000 Master Plan was developed. Funding for the Seattle Center over the years has come from Seattle taxpayers in the form of approved city-issued bonds, the City of Seattle, the State of Washington, and private donors and foundations. The area is considered Seattle's outdoor living room and has become a place where locals gather in times of joy and despair.²⁶⁴

Surviving buildings from the 1962 World's Fair include the Climate Pledge Arena, formerly known as the Seattle State Arena, designed by the lead architect for the fair, Paul Thiry, which recently underwent a massive rehabilitation using historic tax credits. Minoru Yamasaki's United States Science Pavilion is now the Pacific Science Center. The arches that Yamasaki designed are also still extant. The Space Needle, although not constructed by the fair, became the star attraction and remains both a restaurant and observation deck, as well as the iconic symbol of Seattle to this day.²⁶⁵ Even Gayway, an amusement park



Image of the arches and the adaptively reused Pacific Science Center. Original arches and the United States Science Pavilion, now the Pacific Science Center, are some of the permanent structures that were designed by Minoru Yamasaki for the 1962 Seattle World's Fair.

© Barbara A. Campagna, 2023

²⁶³ Bill Cotter, *Seattle's 1962 World's Fair* (Charleston, SC: Arcadia Publishing, 2010), 7-21.

²⁶⁴ Paula Becker, Alan J. Stein and the Historylink Staff, *The Future Remembered. The 1962 Seattle World's Fair and Its Legacy* (Seattle: Seattle Center Foundation, 2011), 218-231.

²⁶⁵ Cotter, *Seattle's 1962 World's Fair*, 34.

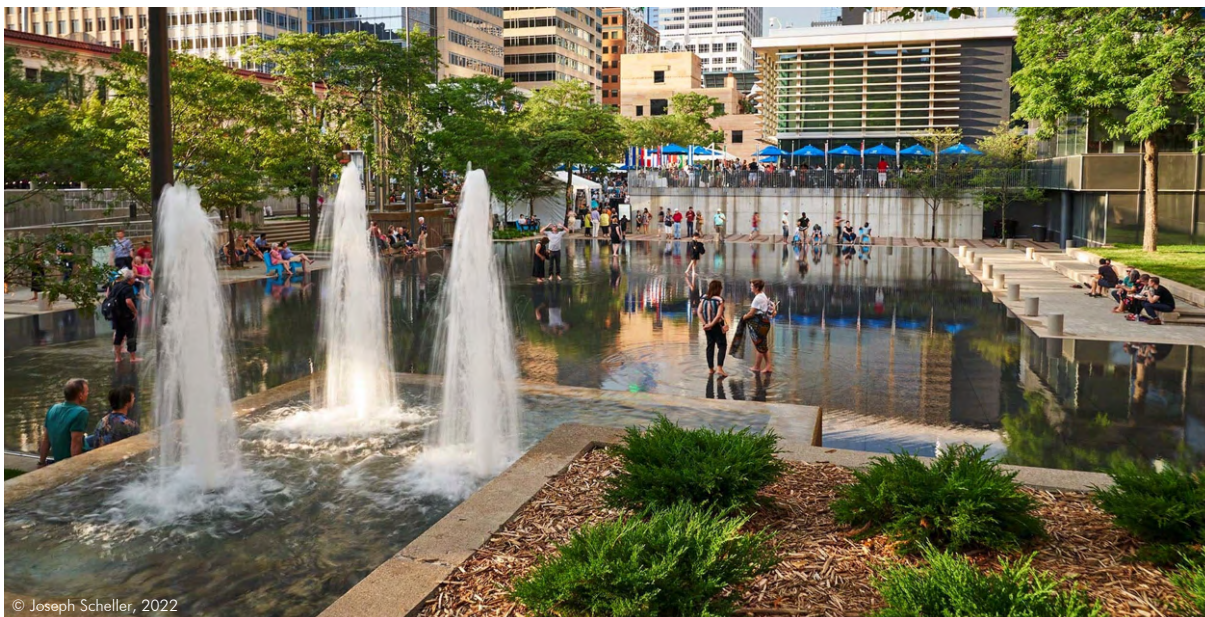
purposefully built for the fair though demolished once it closed, was replaced with another amusement park, Fun Forest, in 1963.

Other structures that remain from the fair include the Monorail, now the Seattle Center Monorail; the Kobe Bell; Paul Horiuchi's mural, now the Seattle Mural.²⁶⁶ The International Fountain, designed by Japanese architects Kazuyuki Matsushita and Hideki Shimizu, remains as well,²⁶⁷ along with the Playhouse; Opera House, now the Marion Oliver McGraw Hall; Food Circus in the old Armory, now the Center House; and Seattle Center Exhibition Hall.²⁶⁸ Of these, the Space Needle, Pacific Science Center, Seattle Center Monorail, Kobe Bell and Center House are city-designated landmarks.²⁶⁹ In 2000, Frank Gehry made a visible impression to the site with the Experience Music Project and Science Fiction Museum and Hall of Fame, funded by Paul Allen, co-founder of Microsoft, which is now the Museum of Pop Culture.²⁷⁰

5.6.2 Accessibility Examples

5.6.2.1 Peavey Plaza, Minneapolis, MN

Dating to 1975, Peavey Plaza was created as a public gathering space that would not compete with the highly successful 1967 Lawrence Halprin-designed Nicollet Mall. In addition to the water features, hardscapes, and walkways, the 2-acre site designed by M. Friedberg + Partners contains amphitheater seating, a sunken plaza/pool basin that is frozen in the winter to provide for ice skating, along with various sculptural elements. Peavey Plaza was listed on the US National Register of Historic Places in 2013. Under threat of demolition for ten years, from 2018-2019, the plaza underwent a rehabilitation designed by Coen + Partners that elevated the basin and introduced ramps to improve accessibility.²⁷¹ The site enjoys multiple uses. Throughout the summer of 2022, Green Minneapolis curated free music, dance and theater performances that enlivened the plaza.²⁷²



The 1975 Peavey Plaza in Minneapolis, MN, designed by M. Friedberg and Partners, underwent an adaptation to improve accessibility.

Source: Joseph Scheller, *Performing Arts at Peavey Plaza*, June 22, 2022, Minnesota, <https://www.minnesotaorchestra.org/stories/performing-arts-at-peavey-plaza/> (accessed November 4, 2023). Courtesy of Minnesota Orchestra.

²⁶⁶ Becker, et al., *The Future Remembered. The 1962 Seattle World's Fair and Its Legacy*, 225-227.

²⁶⁷ Wikipedia, International Fountain, https://en.wikipedia.org/wiki/International_Fountain (accessed October 29, 2023).

²⁶⁸ Becker, *The Future Remembered. The 1962 Seattle World's Fair and Its Legacy*, 205-212.

²⁶⁹ *Ibid.*, 226-227.

²⁷⁰ Wikipedia, Museum of Pop Culture, https://en.wikipedia.org/wiki/Museum_of_Pop_Culture (accessed October 29, 2023).

²⁷¹ The Cultural Landscape Foundation, *Peavy Plaza - Minneapolis*, <https://www.tclf.org/landscapes/peavey-plaza> (accessed November 4, 2023).

²⁷² Minnesota Orchestra, *Performing Arts at Peavey Plaza*, (June 22, 2022), <https://www.minnesotaorchestra.org/stories/performing-arts-at-peavey-plaza/> (accessed November 4, 2023).

5.6.2.2 Heritage Park Plaza, Fort Worth, TX

The Modernist landscape architect, Lawrence Halprin, designed the half-acre Heritage Park Plaza in Fort Worth, TX to commemorate the US bicentennial. It opened in 1980 and consists of a progression of terraced concrete pathways that lead through outdoor rooms with a series of channels and water features. Its setting overlooks the river bluff.²⁷³ It was closed in 2007 because of safety concerns. In 2010, it was added to the National Register of Historic Places.²⁷⁴

The City of Fort Worth in collaboration with Downtown Fort Worth Initiatives, Inc. began developing a formal rehabilitation plan. Bennett Benner Partners, architects, and Studio Outside,

landscape architects, prepared construction documents. The work was put on hold as larger concerns included its circulation challenges limiting its success.²⁷⁵ Those challenges include its remote location and difficulty of access because of roads with busy traffic that need to be crossed - a master plan was needed to address how to attract people and landscape rebuilding. Although the concrete is in relatively good condition, the filtration systems for the water features became clogged by the leaves from the live Oak trees; 11 of these trees were installed by Halprin. They are scheduled to be replaced with cedar elms. Main Street is being relocated to provide a forecourt to be used for events.²⁷⁶



© Elizabeth K. Meyer/The Cultural Landscape Foundation Archive, 2008

The Lawrence Halprin-designed Heritage Park Plaza was inaugurated on July 4, 1976 to commemorate the bicentennial and Camp Worth, the founding military site of Fort Worth, TX.

Source: Elizabeth K. Meyer, *Heritage Park Plaza, Fort Worth, TX*, (2008), <https://www.tclf.org/landscapes/heritage-park-plaza> (accessed November 5, 2023). Courtesy of The Cultural Landscape Foundation Archive.

²⁷³ *Ibid.*

²⁷⁴ The Cultural Landscape Foundation, *Heritage Park Plaza Added to National Register of Historic Places*, <https://www.tclf.org/landscapes/heritage-park-plaza> (accessed November 5, 2023).

²⁷⁵ The Cultural Landscape Foundation, *Heritage Park Plaza - Landslide Update*, July 27, 2023, <https://www.tclf.org/heritage-park-plaza-landslide-update> (accessed November 5, 2023).

²⁷⁶ Audrey Wachs, "Halprin's Heritage Park Plaza in Texas will receive complete restoration," *The Architect's Newspaper* (December 19, 2017), <https://www.archpaper.com/2017/12/heritage-park-plaza-late-modern-park-updated-slowly/> (accessed November 5, 2023).

5.6.3 Landscape Examples

5.6.3.1 Head Office and Garden of the Calouste Gulbenkian Foundation, Lisbon, Portugal



The modernist architecture of the main building, Calouste Gulbenkian Head Office, viewed from the garden,

Source: Paula Pallares, *Fundação Calouste Gulbenkian. Lisboa dois mil e quatorze - outubro*, (January 23, 2015), Flickr, <https://www.flickr.com/photos/pauhaus/16160948078/>, (accessed April 5, 2024).

The Calouste Gulbenkian Foundation is one of the wealthiest charitable institutions in the world dedicated to the advancement of art and architecture. The foundation houses a large private art collection, and hosts numerous institutions including the Gulbenkian Orchestra, Gulbenkian Science Institute and Gulbenkian Prizes.

The Calouste Gulbenkian Foundation Head Office and Garden complex was designated as the first Portuguese modern National Monument in 2010 by state decree 40 years after it was opened to the public in 1969.²⁷⁷ It is described as a masterpiece of modern architecture that demonstrates a harmonious relationship between building and landscape, interior and exterior.²⁷⁸

The complex includes a museum, auditorium and congress center, art library as well as the

headquarter offices of the foundation. The distinctive architecture of the three buildings and the dynamic relationship created by their location on the site is further harmonized by the garden that includes an outdoor auditorium. Building and landscape embody “the tendencies of the time from abstractionism to minimalism, from metabolism to brutalism, tempered by the enhancement of the landscape.”²⁷⁹

The garden’s distinctiveness lies partly in the site topography, which was further accentuated with considerable earthworks. This allowed for a layered appearance of the three main interconnected buildings.

Another characteristic that distinguishes the garden lies in the exceptional species of trees of the pre-Gulbenkian site, the Parque de Santa

²⁷⁷ Head Office and Garden of the Calouste Gulbenkian Foundation, UNESCO World Heritage Centre, Tentative List, Lisbon, Portugal, <https://whc.unesco.org/en/tentativelists/6228/> (accessed November 1, 2023).

²⁷⁸ *Ibid.*

²⁷⁹ *Ibid.* (accessed November 29, 2023).

Gertrudes, that were saved and integrated into the garden design. Courtyards and roof gardens create a flowing relationship between outdoor and indoor and soften the minimalist architectural form and geometric volumes that appear embedded in the undulating, freeform landscape.

The unique Modernist character of both architecture and garden of the Calouste Gulbenkian Head Office was widely recognized and supported by intellectuals, specialists and artists worldwide. The complex is considered a paradigm of architecture of the Modern Movement, selected in the list of 100 architecture monuments of the 20th century by DOCOMOMO International.

5.6.3.2 Rehabilitation of the Mosul Cultural Museum, Iraq

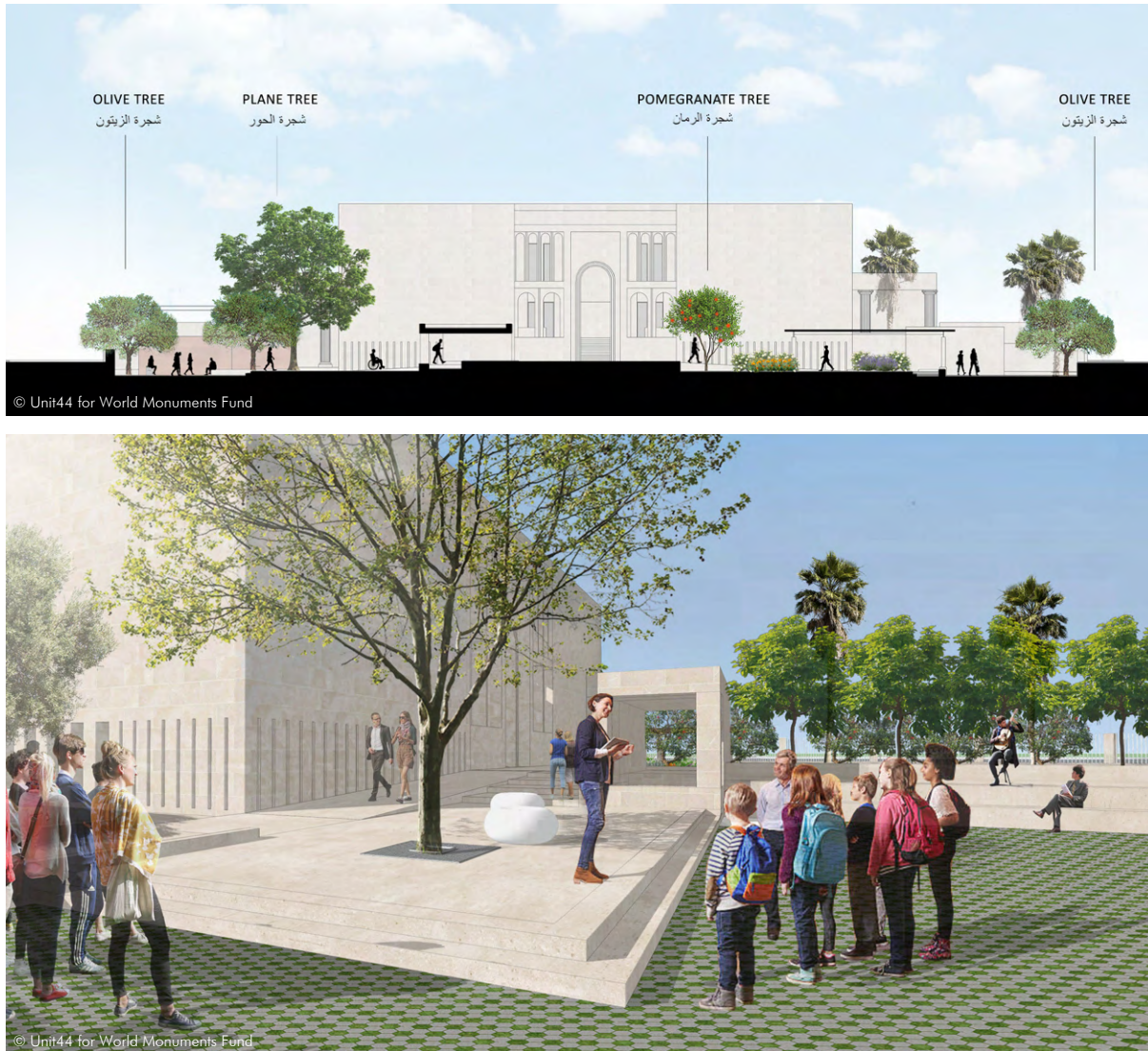
The Mosul Cultural Museum is the second largest in Iraq, built to house objects from the archaeological site of Ancient Nineveh, Capital of the Assyrians, as well as relics from early Islamic Mosul. The museum site is located on the western side of the city, 300 meters from the Tigris. The museum was built in 1973-74 with funding from the Calouste Gulbenkian Foundation. Its design by Mohammad Makiya (1914-2015), a pioneer of Iraqi Modernist architects, adds to the significance of the Mosul Museum as a masterpiece of 20th-century Iraqi heritage.²⁸⁰

Historically, the building sustained damage due to US attacks during the war in the 1990s, and more serious damage when the city of Mosul was occupied by ISIS in 2015. Most of the exhibits were destroyed and the building interior heavily damaged.



Image of the Mosul Museum showing the garden in 2021 planted with olive trees, pomegranate, mulberry and fig trees.

²⁸⁰ World Monuments Fund, *Design for the rehabilitation of Museum Building and Garden, 2020-21, Project Implementation 2023-24*, <https://www.wmf.org/project/mosul-cultural-museum> (accessed November 1, 2023).



Visualization of the proposed landscape design that accepts the existing trees as an additional layer of the Mosul Museum's landscape heritage.

Source: World Monuments Fund, Mosul Cultural Museum Rehabilitation Project (supported by ALIPH).

In 2020, the New York-based World Monuments Fund undertook rehabilitation and restoration of the museum building,²⁸¹ in partnership with the Iraqi State Board of Antiquities and Heritage (SBAH), Musée du Louvre, and the Smithsonian Institution with funding by the International Alliance for the Protection of Heritage (ALIPH).²⁸²

The Mosul Cultural Museum building is a concrete structure with a stone-clad facade. The building footprint (1,620 sqm) occupies more than half the site, leaving a generous space on three sides. Archival images dating to the 1970s

and Makiya's original drawings show a Modernist garden space, 3,800 square meters of lawn and walkways, along with a couple of *Washingtonia* palms.

In the 1980s, the Museum garden was planted with fruit and olive trees inside the boundary wall, along the building's southern façade (56 trees of pomegranate, mulberry, fig and olive trees in total); this corresponds to the cultural conception of a garden that differs fundamentally from that of the minimalist Modernist one.

²⁸¹ World Monuments Fund (WMF), *Mosul Cultural Museum*, <https://www.wmf.org/project/mosul-cultural-museum> (accessed November 29, 2023).

²⁸² ALIPH, *Rehabilitation of the Mosul Museum, Mosul, Iraq*, <https://www.aliph-foundation.org/en/projects/the-mosul-museum> (accessed November 29, 2023).

This transformation reflects the deeply rooted cultural conception of a garden as 'full.' The museum administration was proud to declare that the museum garden was selected as Mosul's 'most beautiful.'²⁸³

Although the existing planted landscape diverged from its initial minimalist concept of the 1970s, the World Monuments Fund's proposal for the rehabilitation of the Mosul Cultural Museum recognized the socio-cultural value of the trees that were added in the 1980s.²⁸⁴ The adopted approach ensures that the existing trees are protected and integrated into the landscape management plans.

The existing planting, as was argued, constitutes a local/regional cultural value, one that enriches the Modernist architectural heritage of the Mosul Cultural Museum. Accordingly, the museum garden was reconceptualized as a place for "active engagement." The landscape was adapted to provide opportunities for interaction, reflection and learning by introducing bleachers, seating and pergolas, and ramps to ensure accessibility.

Rehabilitation of the Museum and its garden were aligned with the sustainable development goals (SDGs) by optimizing energy and water management.

5.6.4 Conclusion

The above case studies are meant to be illustrative of different approaches to adaptive reuse, remedial accessibility interventions, and landscape rehabilitation. What clearly is expressed by these examples is that creative interventions can be compatible with heritage

sites without compromising integrity as well as World Heritage sites maintaining OUV.

The Zollverein Coal Mine Industrial Complex is a very large site that has developed a multi-use program comparable to what could be inserted in RKIF. Ibirapuera Park also relates to RKIF in both the fact that it serves as a "green lung" within a densely developed city and that it contains pavilions designed by Oscar Niemeyer, some with similar functions to those originally intended for RKIF.

The TWA Hotel proves that even the most difficult buildings, purposefully built for a very specific function, can be successfully adaptively reused. Seattle Center shows how far-sighted thinking can turn a fairground into a permanent asset for its city. Peavey Plaza and Heritage Park Plaza both relate to RKIF with their water features and need to be modified to provide inclusive accessibility.

The Head Office and Garden of the Calouste Gulbenkian Foundation is an example of a Modernist building campus integrated with its garden, in itself recognized as historic and an integral part of the complex. This example illustrates how existing historic landscapes can be protected, included as part of the Modernist heritage, and integrated into the contemporary urban fabric.

On the contrary, the Mosul Museum case study shows how a minimalist Modernist landscape has evolved and been transformed over time and how this change can be accepted and preserved due to its acquired community value.

²⁸³ Zaid Ghazi (Director of the Mosul Museum), Interview with Jala Makhzoumi, Mosul, Iraq, September 2020.

²⁸⁴ World Monument Fund, *Mosul Cultural Museum*, <https://www.wmf.org/project/mosul-cultural-museum> (accessed November 30, 2023).

5.7 General Landscape Issues and Recommendations

At RKIF, a major landscape challenge is to mitigate the contradiction between Niemeyer's Modernist conception of landscape and the densely vegetated landscape. In the original scheme, the landscape would have been limited to lawns and groves of palms as alluded to in his model of 1962. There is a suggestion by Niemeyer to contact Roberto Burle Marx, the contemporaneous landscape architect mentioned in a report by Nicolas Rizk following a meeting with Niemeyer in 1970.²⁸⁵

In the absence of drawings and plans for the landscape (from Niemeyer's office and the consultants and contractors who implemented the project), Niemeyer's landscape conception can be inferred from his model and sketches for RKIF and his other projects that show an interplay between mass and void – i.e., uninterrupted stretches of lawn form the 'void' within which the architecture is placed and experienced. The landscape that was planned in 1996-1997 demonstrates no awareness of the former. As the trees matured, they came to fill the void and counter spatially and visually Niemeyer's conception. The planted landscape, however, gained significance as an urban park, the only large-scale vegetated landscape in the city that is integral to Tripolitan's appreciation of RKIF.

In addition to the above, the below recommendations for the treatment of the planted landscape draw from the inspirational landscape case-study examples of the Calouste Gulbenkian Foundation Head Office and the Mosul Cultural Museum. The garden of the Calouste Gulbenkian Foundation Head Office was recognized as an integral part of the historic

complex, not only because it was 'designed' to harmonize with the Modernist architecture, but also because together the buildings and garden were intended as large-scale cultural hub, an opportunity for the public to interact in an informed way with culture in a broad-ranging landscape framework.

Today's planted landscape of RKIF's Cultural and Recreational Sector has the potential to play a similar role, in other words, for the buildings and gardens to serve as an exceptional cultural and recreational hub for the citizens of Tripoli, once a visionary, creative and engaging program is proposed that can animate the open spaces and gardens and better serve the socio-cultural role of the Fairground.

In the case of the Mosul Cultural Museum, as in RKIF, 'filling up' the 'void' transformed respectively the garden and the site, both of which were conceptualized as open spaces, a two-dimensional landscape of lawn. The focus on void/open space that was integral to Modernist architecture is anathema to Middle Eastern vernacular cultural sensibilities of 'gardens.' In Iraq as in Lebanon, a garden is 'full' of plants. The conception of gardens as a shaded space, packed with a diversity of fruit trees is rooted in Biblical and Quranic narratives of Eden. This explains why in both projects, RKIF and the Mosul Cultural Museum, local intervention was to fill the garden space with trees. In the former, ornamental trees and shrubs, in the latter, fruit trees.

²⁸⁵ "À ce propos, et si le C.E.G.P. y consent, il faudrait adresser à M. Niemeyer une lettre l'autorise à contacter ce paysagiste (M. Burle Marx) et d'étudier avec lui la possibilité de voir le paysagisme à la foire de Tripoli." Rizk, "La Foire Internationale du Liban à Tripoli. Rapport Définitif sur la Mission No. 624," 3.





The planted landscape of the Cultural and Recreational Sector after the recommended removal of shrubs and trees.

Source: UNESCO Landscape Survey, 2023.

5.7.1 Recommended Management for the Planted Landscape

Accepting the new significance of the planted landscape, the conservation policies proposed for RKIF in Chapter 4 follow a course that mediates the two contradictory landscape conceptions and their respective values, to regain a semblance of the landscape initially envisioned as 'void,' and on the other hand, the existing landscape as 'full,' a garden. The aim of the recommended actions below is to undertake a general reduction in the number of woody plants, trees, and shrubs, from the current 4,782 total in the Cultural and Recreational Sector to 3,427 plants. The latter is handled through the removal of approximately 1,000 shrubs and 355 trees based on their age, species, and location pattern within the Cultural and Recreational Sector that forms the core of Niemeyer's complex. The previous plans show the existing planted landscape and that of the Cultural and Recreation Sector after recommended treatment. The planted landscape of the Southeastern and Northeastern Gardens is not included in the recommended actions because of their peripheral location, hence less impact on significance vis-à-vis the Cultural and Recreational Sector plantings.

5.7.1.1 Recommended Actions for Cultural and Recreational Sector

Recommended actions for removal and thinning of the landscape planting in the Cultural and Recreational Sector draw on UNESCO Beirut Office 2023 landscape survey of existing woody vegetation that were categorized and mapped for the purpose of the CMP into eight categories:

- Small-Medium Shrubs
- Small Trees-Big Shrubs
- Mature Trees 1997 (not in rows)
- Mature Trees 1997 (in rows)
- Mature Trees Post 1997 (not in rows)
- Mature Trees Post 1997 (in rows)
- Mature Trees (peripheries)
- Trees-Shrubs (regenerated)

The eight categories above formed the basis for the recommended actions for removal and thinning of the landscape planting in the Cultural and Recreational Sector that are grouped into 'high priority' and 'medium priority'. High priority includes the removal of shrubs and trees that will have an immediate favorable impact on the perception of the landscape as void with limited effort and cost.



RKIF landscape
2023.

© UNESCO/Hana Itani

Medium priority is the second level of action that will need to be considered within a long-term landscape management plan for the Fairground.

An expert horticulturist should be present to oversee removal and thinning operations to ensure that plants, shrubs, and trees are not damaged. This will increase their chances of being transplanted elsewhere within the RKIF project or outside.

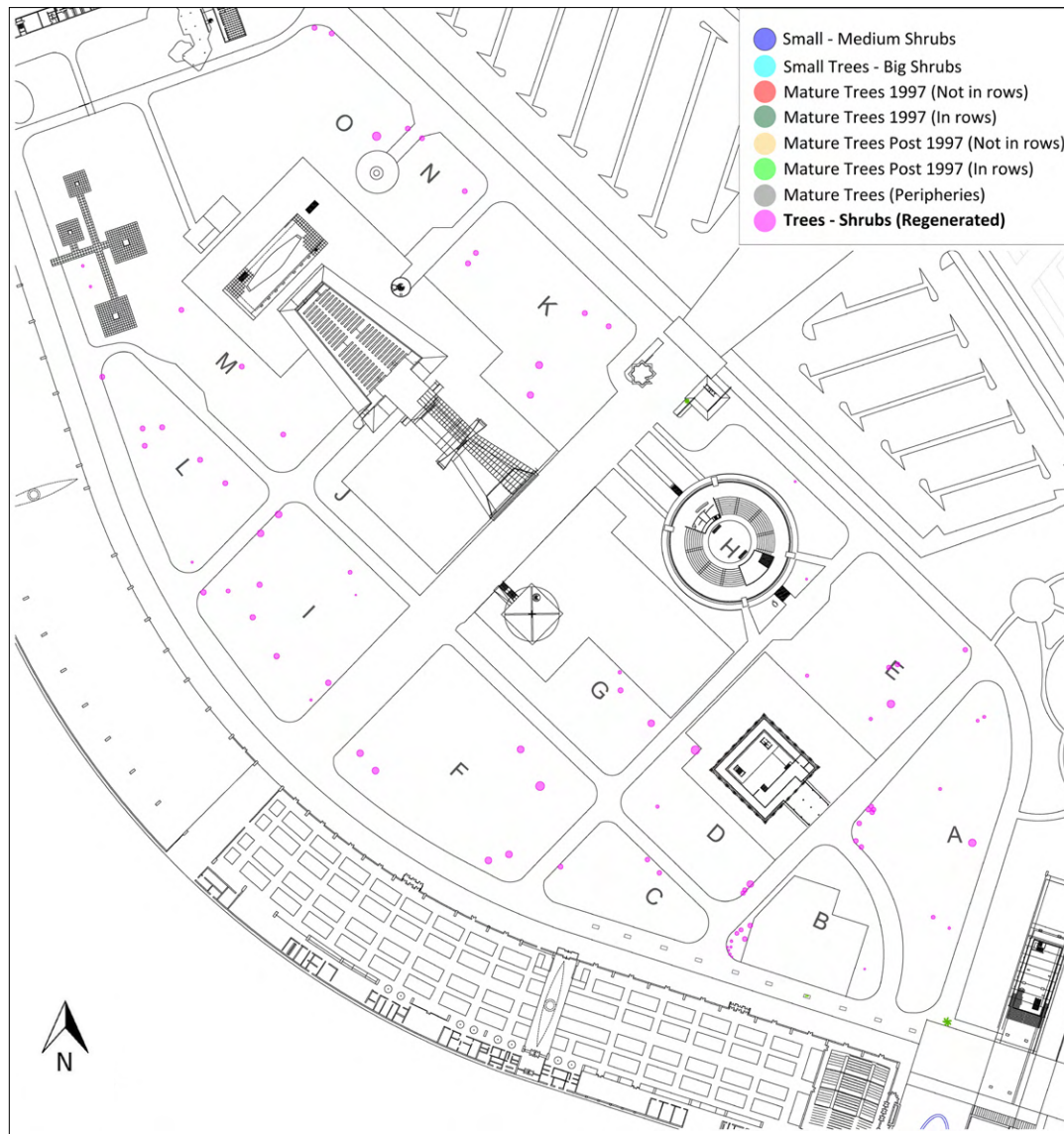
A. High-Priority Landscape Actions

Removal of self-propagated trees

Remove from the Cultural and Recreational

Sector all regenerated woody plants that have self-propagated (refer to below plan on regenerated trees and shrubs in lawn areas. Most are in the lawn areas, expected to mature and obstruct views.

These species fall into two categories, those that are valued ornamental trees that can be transplanted or sold (*Delonix regia*; *Jacaranda mimosifolia*), and those that are more common, shelterbelt species (*Myoporum laetum*; *Albizia julibrissen*; *Parkinsonia aculeata*; *Nerium oleander*; *Callistemon laevis*) as well as *Cupressus sempervirens*, *Thuja orientalis*, *Washingtonia robusta*, and *citrus Aurantium*.

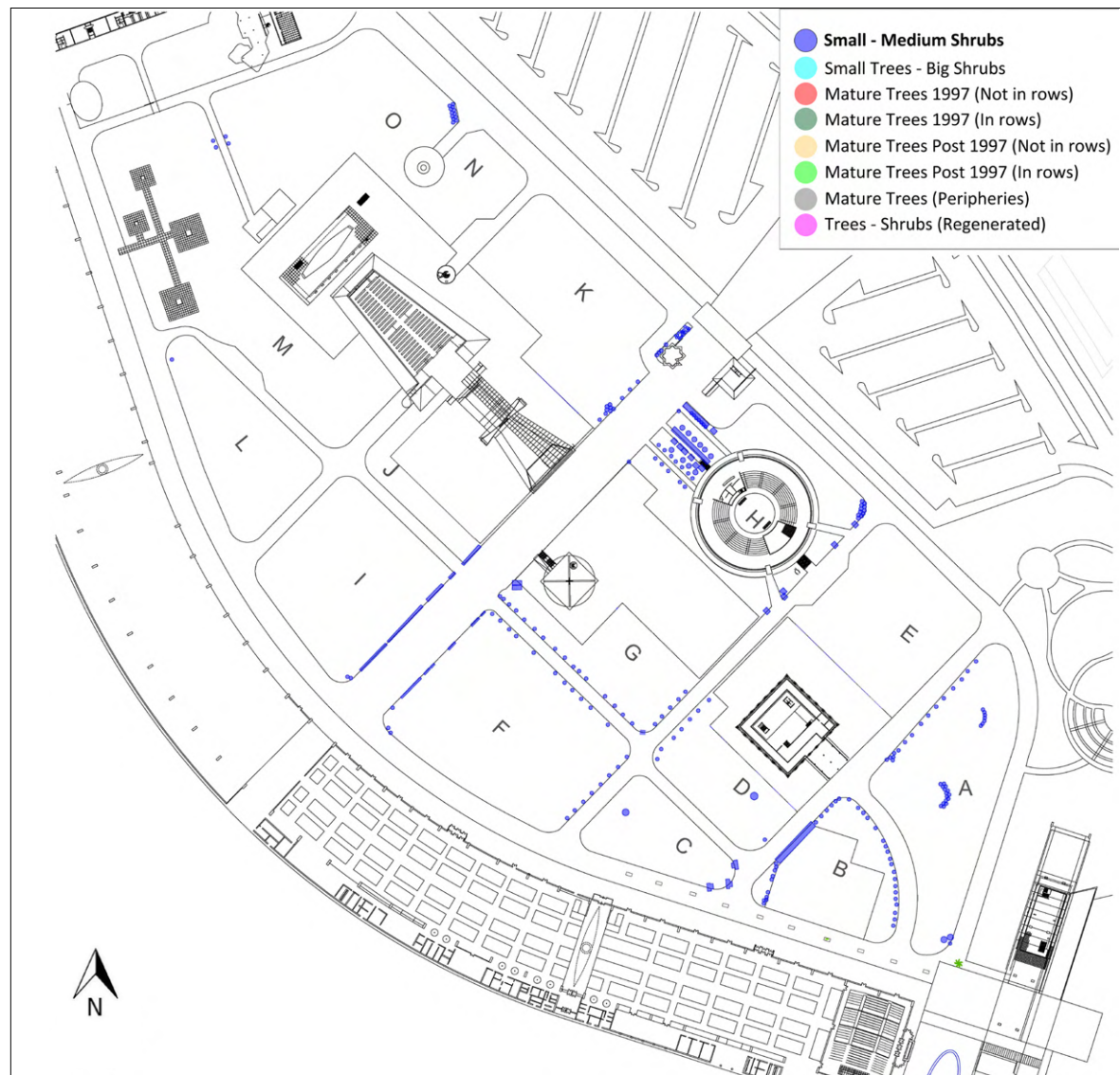


Removal of regenerated trees and shrubs in lawn areas.
Source: UNESCO Landscape Survey, 2023.

Clearing shrubs bounding lawn areas

Remove small shrubs planted around the lawn areas either as continuous hedges or as hedge segments to overcome the current emphasis on walkways and maintain the fluidity of space

across the lawn areas. The species to be removed include *Pyracantha coccinea*; *Juniperus 'Chinensis'*; *pfitzeriana*; *Pittosporum tobira 'nana'*; *Gardenia grandiflora*; *Pittosporum tobira*; *Lantana camara*; *Yucca aloifolia*; *Hibiscus rosa sinensis*.



Removal of small- and medium-sized shrubs that encircle the lawn areas to clear viewsheds, open up spatial continuities, de-accentuate the walkways, and disrupt spatial fluidity.

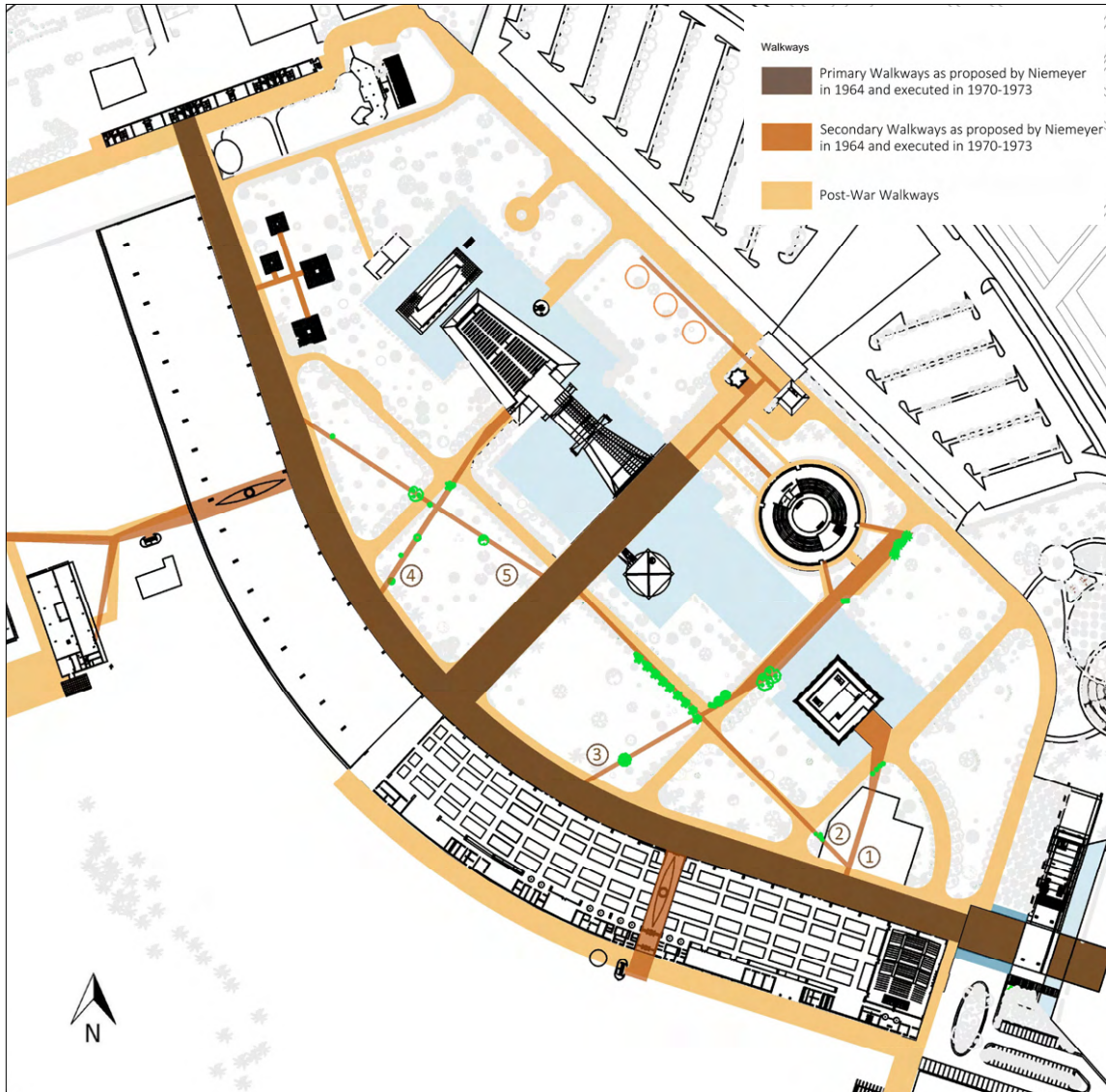
Source: UNESCO Landscape Survey, 2023.

© UNESCO/Hana Itani, 2023

Removal of plants encroaching on Niemeyer's oblique walkways

Remove shrubs and trees positioned along the initial alignment of Niemeyer's oblique walkways. This will free the viewsheds and vistas initially conceived by Niemeyer between the Grand

Cover and the Cultural and Recreational Sector until the reinstatement of Niemeyer's oblique walkways is implemented in the medium and long term.



Removal of shrubs and trees that hinder the reconstruction of Niemeyer's oblique walkways to free intended viewsheds and open vistas.

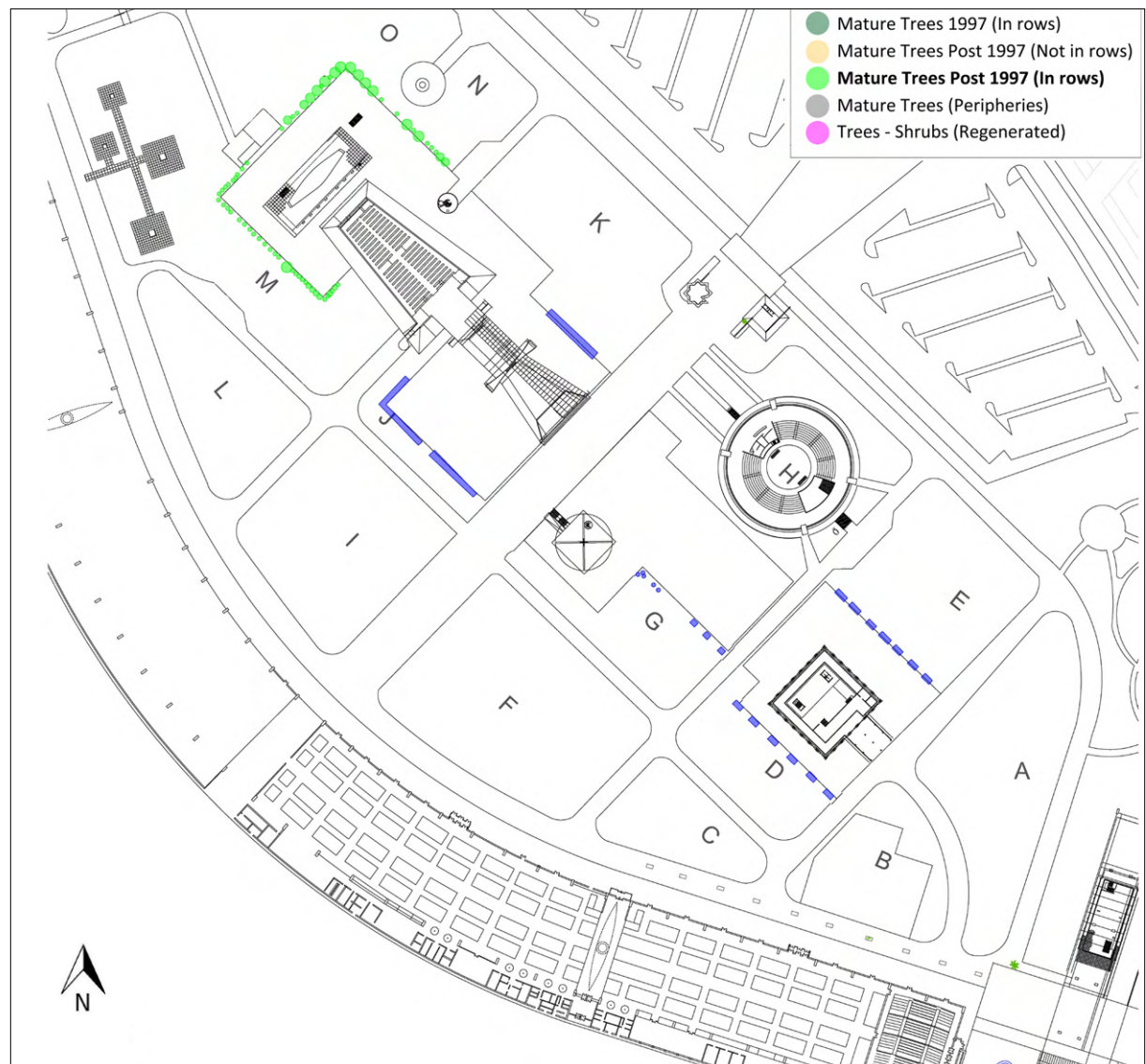
Source: Adapted from UNESCO Landscape Survey by Hana Itani and Aline Haddad.

© UNESCO/Hana Itani/Aline Haddad, 2023

Removal of plantings encircling reflecting pools

Remove trees and shrubs encircling the reflecting pools in the Cultural and Recreational Sector. Although the trees, *columnar cypresses*, are still young, they block the view of the pools and the reflected structures as envisioned by

Oscar Niemeyer. Additionally, the young age of the trees, planted recently, renders uprooting easier and increases the chances for successful transplanting.



Removal of shrubs and trees encircling the reflecting pools to open up the view to the reflecting pools as intended by Niemeyer.

Source: UNESCO Landscape Survey, 2023.

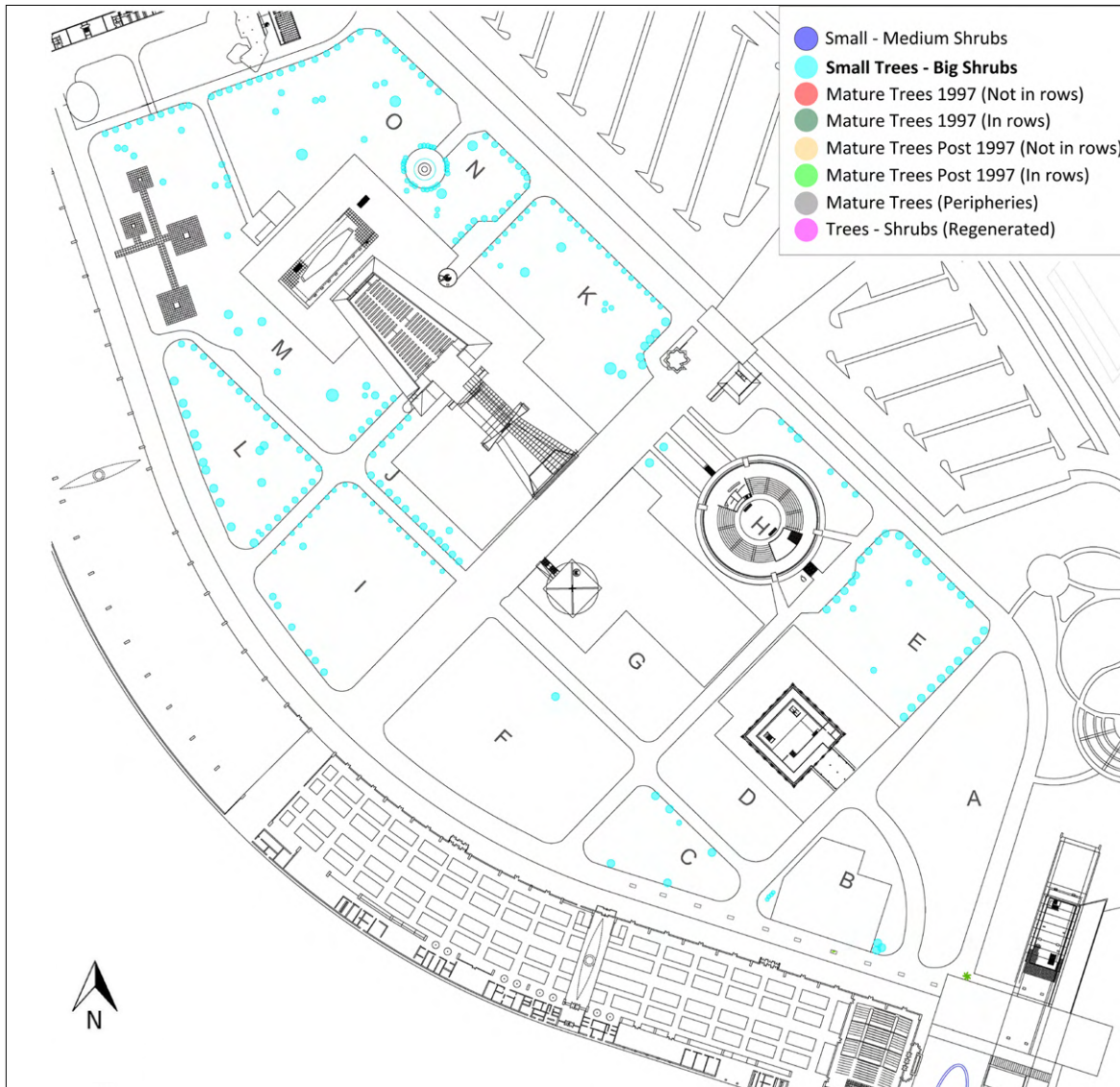
© UNESCO/Hana Itani, 2023

B. Medium-Priority Landscape Actions

Removal of less significant woody plant species

Remove all large shrubs and small trees of species that are of less significance, planted on both sides of the walkways in the Cultural and Recreation Sector to free viewsheds,

ensure the flow of space and de-accentuate the walkways. The species include: *Nerium oleander*; *Myoporum laetum*; *Thevetia peruviana*; *Tecoma capensis*; *Bougainvillea glabra*.



Removal of all large shrubs and small trees that encircle the lawn areas to clear viewsheds, open up spatial continuities, de-accentuate the walkways, and disrupt spatial fluidity.

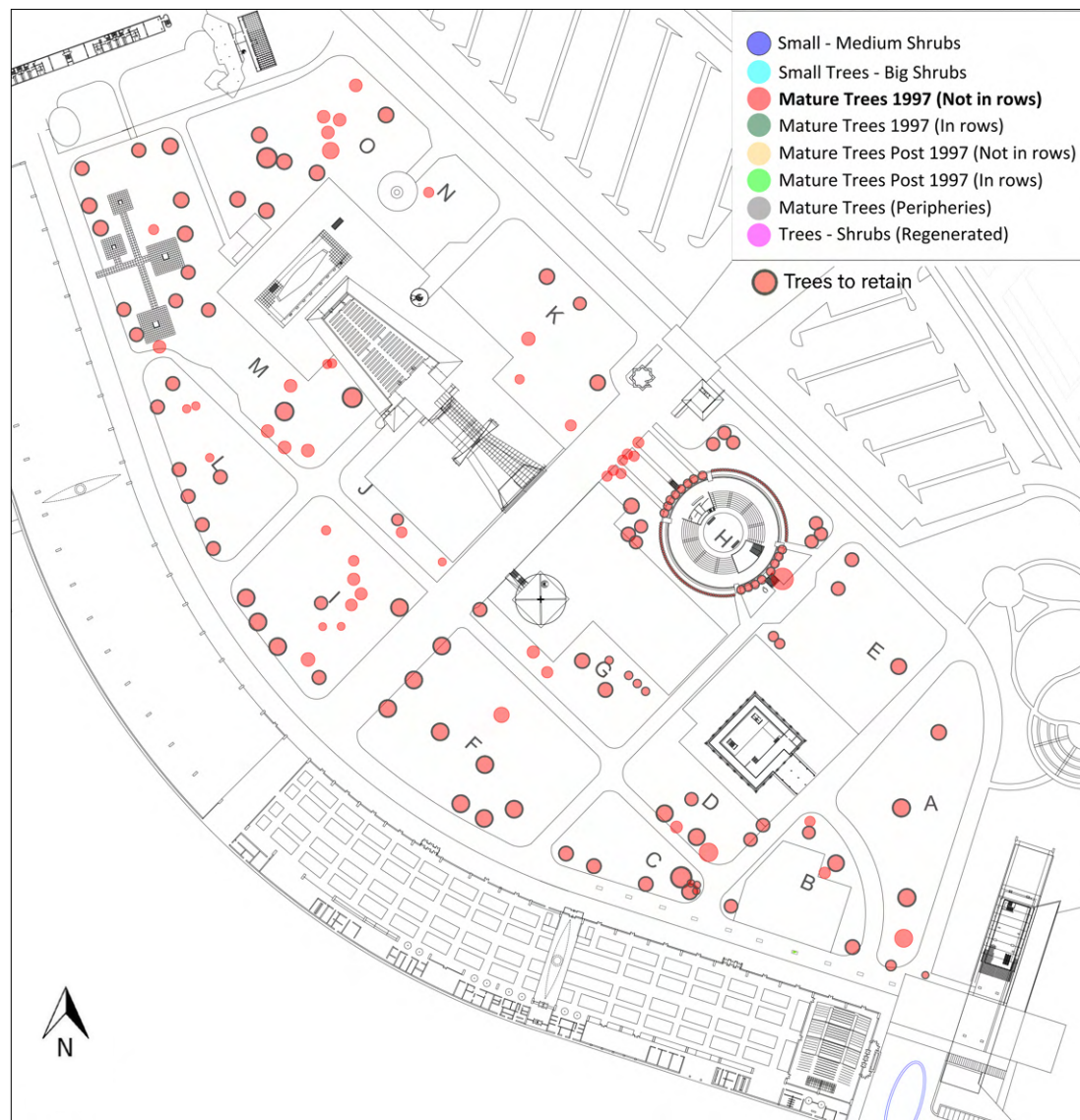
Source: UNESCO Landscape Survey, 2023.

© UNESCO/Hana Itani, 2023

De-densify scattered tree planting

Reduce the density of scattered mature trees planted in 1997 (not in rows) that are not obstructing viewsheds or only partially blocking viewsheds and are of significant species (*Cercis siliquastrum*; *Plumeria alba*; *Betula alba*; *Erythrina crista-gali*; *Jacaranda mimosifolia*; *Delonix regia*; *Magnolia grandiflora*; *Pinus pinea*; *Washingtonia robusta*; *Phoenix dactylifera*).

Select trees for removal that are of less significant species and/or that have reached maturity and will die naturally (*Cupressus sempervirens*; *Albizia julibrissen*; *Schinus molle*; *Cupressus arizonica*; *Acacia cyanophylla*; *Brachychyton populnuous*; *Araucaria excelsa*; *Callistemon laevis*; *Parkinsonia aculeata*; *Juniperus 'chinensis' pyramidalis*).



Trees planted in 1997 (not in rows) to be removed (pink circles) and those to be retained (pink encircled in black). This treatment aims to remove obstructions of viewsheds.

© UNESCO/Hana Itani, 2023

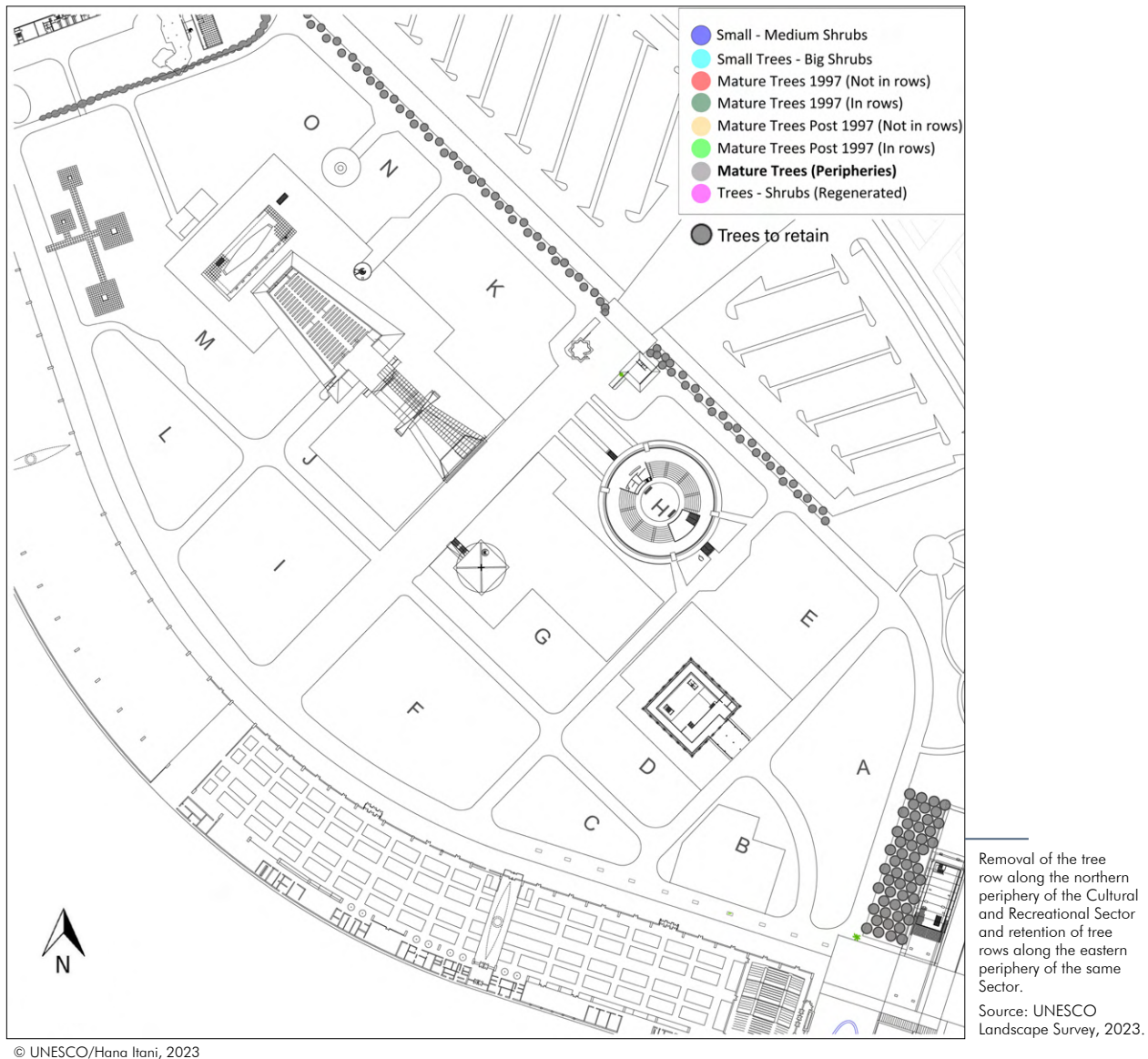
Source: UNESCO Landscape Survey, 2023.

Removal of mature tree rows

Remove mature trees along the northern periphery of the Cultural and Recreational Sector to open up vistas towards the Housing Sector, in particular the Collective Housing (now the Quality Inn) and Model Residence.²⁸⁶ Removal is justified not only because the tree row obstructs the flow of space between the Cultural and Recreational Sector and the Housing Sector, but also because the growth of the trees forming this row, *Casuarina*

cunninghamiana, *Thevetia peruviana*, and *Chamaerops humilis*, is stunted as the seedlings were planted too close to each other.

The exception is the mature tree row of bitter oranges, *Citrus Aurantium*, defining the eastern edge of the Cultural and Recreational Sector, which are integral to the memory of the pre-Niemeyer agricultural landscape.

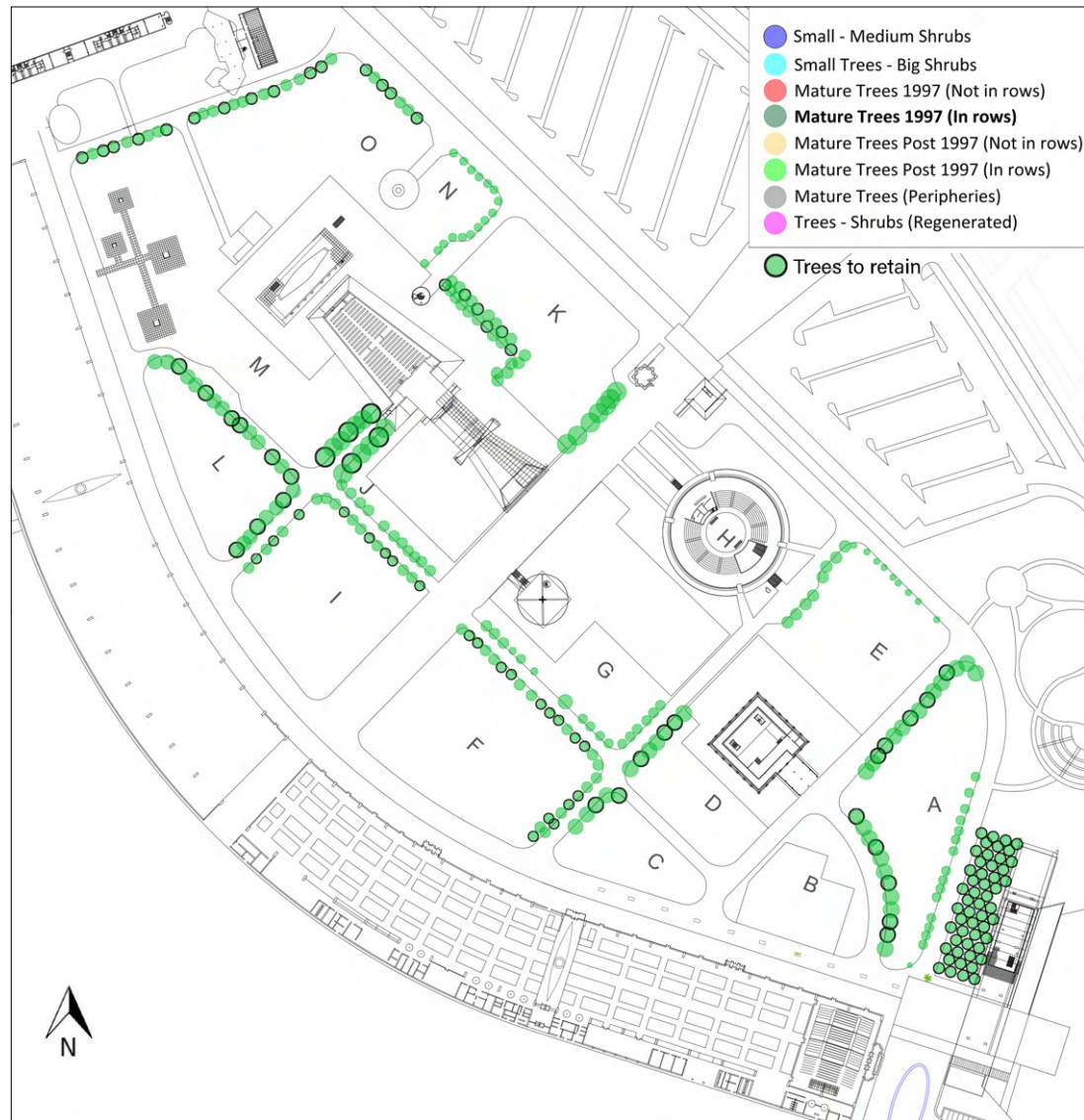


²⁸⁶ A similar row of trees extends along the same alignment and obstructs the view from the northern end of the Grand Cover towards the Housing Sector, particularly the Collective Housing (Quality Inn hotel). This tree row continues laterally to the western boundary of RKIF. The decision to remove the entire row, east to west, should be considered within the framework of the landscape management plan (General Policy 5 and Policies 158 - General overarching policy for planted landscape), but in principle, mitigating the impact of the trees obstructing what should have been an open end of the Grand Cover is recommended (Policy 46 - specific policy for Grand Cover).

Selective removal of trees lining walkways

Remove mature trees that were planted in rows in 1997, generally to emphasize walkways, except where indicated. As with the small shrubs and hedges, the aim is to de-accentuate walkways

and allow for the flow of space. The species include *Washingtonia robusta*; *Callistemon laevis*; *Pinus pinea*; *Cupressus sempervirens*; *Brachychyton populneus*.



Trees planted in 1997 in rows to be removed (in green) and those to be retained (green encircled in black) to de-accentuate the walkways.

Source: UNESCO Landscape Survey, 2023.

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© UNESCO/Maya Hmeidat, 2024

Tree rows along the path that separates the Cultural and Recreational Sector (left) from the Housing Sector (right).

5.7.2 Long-Term Landscape Vision/Recommendations

The landscape west of the Grand Canopy incorporates a large area, approximately 25.4 hectares, between the Services Sector and the Guest House. Apart from the mature date palms along the western boundary of RKIF, this area is not planted and has great potential for future development.

Two recommendations are proposed for this part of the landscape. Both recommendations draw on the significance of the historic landscape and valorization of RKIF by Tripolitans as a green space while acknowledging the need for future development of this part of the land.²⁸⁷

Recycling Trees and Shrubs

A sustainable approach to landscaping this part of RKIF is to reuse the trees and shrubs designated for removal from the Cultural and Recreational Sector (recommended actions 1-9 above). Uprooted trees and shrubs are

a valuable resource that can cut the cost of purchasing new trees and shrubs.

Two criteria are necessary: first, for this action to succeed, tree removal must be carried out under expert horticulturist supervision; second, they are not re-planted haphazardly but according to a landscape plan that takes into account and complements the proposed development of this part of the Fairground.

Re-introducing Tripoli's Productive Landscapes

The landscape of the site selected for RKIF in the 1960s was part of the extensive western orchards of Tripoli, Al Saki Al Gharbi. The land was owned by Tripolitan families, a source of income and social significance as a green landscape. Tripoli was known as *Al Fayhaa* because of the scent of orange blossoms emanating from the citrus orchards on the coastal plain.



The productive landscape of citrus orchards, *Al Saki Al Gharbi*, formed the landscape of the site chosen for RKIF.

Source: Khlaf and Mouawad Collection.
Courtesy of George Mouawad.

© RKIF Archives

²⁸⁷ Refer to the results of the public survey and stakeholders consultations in Appendices 1 and 2.

It is of value to recognize the historic landscape that existed prior to the project, a productive landscape for Tripoli. Reintroducing orchards in parts of RKIF in recognition of the (agri)cultural landscape heritage displaced by the project is considered acceptable. The row of bitter oranges inside the Eastern Car Park fence is extremely successful; the trees robustly provide seasonal blooms and the color of the oranges is a delight.

The recommendation to reintroduce a productive landscape is not only rooted in Tripoli's history but is also forward-looking. Urban agriculture and community gardens are a mark of 21st century urban landscapes, adopted by cities as a sustainable approach to urban greening that engages local communities as well as providing food.²⁸⁸

Drawing on the pre-RKIF agricultural landscape, orchards are introduced as the theme for landscaping the western half of the Fairground. This was an entry by UNIT44 to the Tripoli Knowledge and Innovation Center Competition of July 2019.²⁸⁹

The "Bustan-Park" was a counter-proposal that advocated a small building footprint amidst a productive landscape that received an "honorable mention".²⁹⁰

The landscape concept was to re-introduce orchards in radial strips emanating from the curvature of the Grand Cover. The strips define future development zones. Rather than replicate the 'ornamental landscapes' of the Cultural and Recreational Sector, the idea is to introduce 'productive landscapes' of fruit trees. The area occupied by the orchards can expand or shrink without interfering with whatever development is proposed.

Unlike the "ornamental landscapes" that have been established in the Cultural and Recreational Sector, the "productive landscape" will give the western half of RKIF a different character, one that is rooted in the history of the pre-Niemeyer site. This alternative approach to landscaping will be meaningful to the local culture while combining economic benefit with social and cultural significance.

²⁸⁸ Tinashe Kanosvamhira, Alexander Follmann and Daniel Tevera, "Experimental urban commons?: Re-examining urban community food gardens in Cape Town, South Africa." *The Geographical Journal* 10 (2023); Jeffrey Hou and David Grohmann, "Integrating community gardens into urban parks: Lessons in planning, design and partnership from Seattle." *Urban Forestry and Urban Greening* 33 (2018); Mario Jordi-Sanchez and Antonio Diaz-Aguilar, "Constructing organic food through urban agriculture and community gardens in Seville." *Sustainability* 13 (2021); US Fed News Services, "18 Delaware sites awarded grants for urban agriculture and community gardens." Washington, DC (2017); Turkkkan Candan, "Urban gardens vs community gardens: Tensions and trajectories for urban agriculture in Istanbul." *Momentdergi* 10 (2023).

²⁸⁹ The International Architectural Design Competition for the Knowledge and Innovation Center in Tripoli, Lebanon was managed by the Lebanese Federation of Engineers and Architects on behalf of the Tripoli Special Economic Zone and the Government of the Republic of Lebanon <https://competitions-awards.uia-architectes.org/en/competition/knowledge-and-innovation-center/> (accessed October 23, 2023).

²⁹⁰ Knowledge and Innovation Center Competition Jury Report, UNIT44 entry is labeled, "ON-104", Union for International Architects (UIA), "Report for the Single-Stage International Architectural Design for the Knowledge and Innovation (KIC) Tripoli", June 28, 2019, <https://competitions-awards.uia-architectes.org/wp-content/uploads/2021/07/KIC-Jury-Report.pdf> (accessed October 23, 2023).



Concept sketch inspired by the "Bustan-Park" counter proposal submitted by UNIT44 to the International Architectural Design Competition for the KIC in Tripoli, 2019. Receiving honorable mention, the idea was to embed future development in a productive landscape, orchards that revive the memories of coastal agriculture in the plains of Tripoli.

Source: UNIT44 landscape scheme overlaid on UNESCO Landscape Survey 2023 by Hana Itani.

© Unit 44, 2023

5.8 Other Recommendations

In addition to the recommendations already proposed, ICOMOS Lebanon²⁹¹ suggested **establishing partnerships** with local NGOs, youth associations, heritage organizations and educational institutions (local universities) to implement awareness-building programs and cultural events at the Fair in the aim of reconnecting local inhabitants with the Fair (as part of the collective memory) and disseminating educational programs.

Partnering with the Ministry of Tourism to **put the Fair on the tourism map** of Lebanon (once the site has been made-safe) would also be positive, thereby connecting the site with other attractions in Tripoli, such as the old Mamluk souks, the Crusader citadel, the Ottoman mosques, etc.

There needs to be a **clarification of roles, responsibilities and processes** between the two authorities, DGA and RKIF, as well as the regulatory decrees based on Law 274. The internal regulations and bylaws of the legal and operational framework of RKIF will need to be updated to reflect the site's new status as a World Heritage site.

As the RKIF structures are conserved one by one, the introduction of **cyclical maintenance** is required. This should occur initially every five years, but eventually, as the condition of each building is improved, this can be instituted every ten years. **Periodic maintenance** should also take into consideration roofing membranes, which typically have a service life of 20 to 25 years. Re-roofing should take into consideration the use of reflective surfaces to help reduce heat gain inside the structures.

In addition, if solar panels and/or mechanical equipment are introduced to any rooftops, dunnage structures need to be considered to support these. **Preventative maintenance** is one of the most important tools to ensure the integrity of the site.²⁹²

Potentially, RKIF could **capacity-build to form its own repair team** whose expense could be covered by users and beneficiaries. However, the initial task is to stabilize and make-safe the buildings as funds are sought for repair and developer-driven rehabilitation proposals are considered. **Interim guidelines for maintenance and care** should be developed based on the CMP until funds are secured for restoration. These guidelines would provide a strategy for stabilizing the current conditions of the structures to prevent further decay while funding is sought.

Design guidelines are also necessary. These would establish aesthetic guidelines in sync with the character-defining features for Niemeyer buildings that will be adaptively reused so as not to compromise their integrity. A careful review of existing drawings to identify any specified finishes and/or implemented finishes should be undertaken prior to any intervention. In addition, there need to be guidelines for new construction within the undeveloped portion of the ellipse. There should also be design guidelines for the perimeter of the ellipse so that new construction respects the location and is sensitive to the World Heritage site.²⁹³ Priority should potentially be given to the original Administration Building and Customs-Firehouse-Depots Building, which were included in the KIC competition, if TSEZ and RKIF were to re-launch their agreement.

²⁹¹ ICOMOS Lebanon was invited to the Stakeholders' Consultation Workshop held by UBO in July 2023 to collect feedback on the CMP's first draft.

²⁹² Approaches to concrete repair and maintenance are given herein for the Arch and the Open-Air Theatre based on the study undertaken on behalf of UNESCO Beirut Office by Paul Gaudette, Peter Tarara and Mahmoud Hashem. Gaudette and Tarara, *Open-Air Theatre: Assessment for the Arch and Collapsed Soffit*. See Appendix 7.

²⁹³ Perhaps EAST Architecture Studio could assist in the development of the guidelines for adaptive reuse of Niemeyer structures based on their careful intervention at the Guest House, recognized by a 2022 Aga Khan Award for Architecture.

Activating RKIF is going to take a mobilization of resources. RKIF could **establish a website** that would provide news and updates about the site and proposed interventions; advertise through tenders possible activities and acceptable uses for the site or solicit Letters of Interest from potential investors or notify the public of design competitions for the site; and in general,

promote the site. The RKIF Administration and DGA should consider documenting the site through laser-scanning, thereby creating a digital archive with interactive 3-D models as virtual exhibitions that inform the public about the history and architecture.²⁹⁴ Keeping the public engaged will ensure participation in the revitalized site.²⁹⁵



Panoramic view of the site from the roof of the Water Tower, looking southeast (left) and southwest (opposite page).

© UNESCO/İeva Saudargaite, 2023

²⁹⁴ Explore potential collaboration with Iconem Studio for 3D-modeling, <https://iconem.com/> (accessed November 23, 2023).

²⁹⁵ Laser-scanning would also be highly useful for documenting the existing conditions and producing accurate background AutoCAD drawings to be used for conservation and adaptive reuse projects.

5.9 Priority Tasks for Informed and Sustainable Management of RKIF

Chapter 4 of this CMP for the RKIF complex identified a diverse range of conservation policies, followed by some recommendations for concrete actions in Chapter 5 so that informed decision-making for the future conservation and management of RKIF as a World Heritage site is ensured. At the time of drafting this CMP, several priorities were identified. This section will summarize high- and medium-priority tasks while linking them to the CMP policies based

on their urgency, need for additional resources, need for further investigation and research, and the time needed to prepare more detailed plans and implementation strategies. These priority tasks are listed below along with a time frame for implementation that varies from those that are urgent and should be implemented immediately; to those for the short term (1-2 years); medium term (3-5 years); and long term (6-10 years).



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Tasks that are identified as priority and need to be addressed immediately, on the short, and medium terms

Task	Comments	Relevance to CMP policies	Completion By
Establish a conservation management (technical) committee to implement CMP and respond to WH directives	The CMP should be adopted and implemented by the stewards of RKIF (RKIF Board and DGA). However, given the lack of inhouse resources, it is important to seek experienced conservation professional advice to interpret and implement the CMP and to support official decision making related to the conservation and/or development of the site.	Policies 1-2 Policies 22-24	Immediate Ministry of Culture and Ministry of Economy in consultation with RKIF Board and Directorate General of Antiquities (DGA)
Collaborate with the Reactive Monitoring Mission to establish the Desired State of Conservation for Removal of the site from the List of World Heritage in Danger (DSOCR)	Jointly performed by the World Heritage Centre and ICOMOS to review the state of conservation of RKIF and establish the Desired State of Conservation for Removal of the site from the List of World Heritage in Danger (DSOCR). Other tasks will be to clarify the boundaries of the WH site and its buffer zone.	Policies 1-2	Immediate Ministry of Culture, Ministry of Economy, RKIF Board and DGA
Make-Safe Program	Given the catastrophic collapses of concrete board-formed ceilings in several areas, the fact that they appear to be held up by friction only instead of mechanical means, and the severe deterioration of cast-in-place concrete, the concrete should be sounded and spalls removed. The majority of the structures should be prohibited from access. The garden can remain open, but the structures, themselves, are potentially hazardous and should have barriers installed to prevent access.	Policies 11, 23- 24	Immediate RKIF Board and DGA Potential collaboration with UNESCO, ICOMOS, Order of Engineers, Centre de Restauration et de Conservation (Lebanese University, Tripoli), and other concerned parties
National Designation	A requirement of World Heritage sites is that they are designated at the national level. 73% of respondents to UBO's public survey considered the site worthy of national designation and promotion, similar to Baalbek Temples and the Crusader Castle in Tripoli.	Refer to Chapter 3 - Section 3.10	Immediate - short term Ministry of Culture (DGA)

Task	Comments	Relevance to CMP policies	Completion By
Conditions Assessment	Individual structures require in-depth studies by conservation engineers and architects with relevant expertise in historic concrete to understand the conservation issues for each structure and provide recommendations for repair. In addition to NDE and testing, paint and finishes analyses should be carried out.	Policies 1-2, Policies 6-9, 14 Policies 22-24	Immediate - short term RKIF Board and DGA Potential collaboration with UNESCO, ICOMOS, Order of Engineers, local universities, etc.
Management Structure	The World Heritage Committee has indicated that a management structure needs to be developed. This would require the clarification of roles, responsibilities and processes between the two responsible authorities, and the integration of the above mentioned management/technical committee (policy 22) within this management framework.	Policies 22-24	Immediate - short term Prime Minister's Office, Ministry of Culture, and Ministry of Economy in consultation with RKIF Board and DGA
Heritage Impact Assessments	The World Heritage Centre must be informed of all intended large or small scale projects. A Heritage Impact Assessment should be undertaken by professionals for any project and/or event that may have an impact on the Outstanding Universal Value (OUV) of the site. In addition, the World Heritage Centre must be informed of the intention to undertake or authorize any major project that could affect OUV. Monitoring of all uses, activities, and proposals for adaptation is a requirement for better management and it should be carried out at all times to identify, avoid, and mitigate heritage impacts on significant site elements, their attributes, and values.	Closely related to most overarching policies and the specific policies of the particular location where change/impact is expected to take place	Immediate - short - medium - long term DGA and RKIF Board with professionals in the field
Fundraising Plan	A fundraising plan will identify potential sources of funding for repair and improvements.	Required for the implementation of all the CMP policies	Short term Ministry of Culture and Ministry of Economy in consultation with RKIF Board and DGA

Task	Comments	Relevance to CMP policies	Completion By
Interim Guidelines for Maintenance and Care	Interim guidelines for maintenance and care should be developed based on the CMP until funds are secured for restoration.	Policies 1-2 Policies 6-12, 18-19 Policies 22-24	Short term Ministry of Culture and Ministry of Economy in consultation with RKIF Board and DGA with experienced preservation engineers and architects
Priority-Based Repair Program	Conditions assessments should lead to a schedule for implementing high-medium-low priority repair, conservation, or maintenance works, <i>i.e.</i> measures to reduce water infiltration into the basements of vulnerable buildings.	Policies 1-2 Policies 11-21 Policies 22-24	Short term - medium term Ministry of Culture - DGA in consultation with RKIF Board and Ministry of Economy
Mitigate the Impact of Intrusive Elements	Prioritization and a time-based program for the removal or modification of intrusive elements as identified in this CMP should be established and incorporated into any program of work.	Overarching Policy 21 Specific policies 45,48-50, 57-58, 86,99, 117-118, 140, 143,148, 155, 164, 170, 172	Short term - medium term RKIF Board and DGA with heritage professionals and preservation architects
Digital Archive	Given the diverse locations of archival materials, a digital repository with no possibility of loss of background and more recent information is required.	Needed for the implementation of all CMP policies	Short term - medium term RKIF Board and DGA in collaboration with other relevant institutions
Action Plan for Landscape Management of the Culture and Recreation Sector	High-priority landscape actions were recommended above in this chapter based on the respective policies for the Culture and Recreation Sector. Designate a team of experienced landscape architect and landscape horticulturist to assess and carry out the recommendations for selective removal. Expert removal of trees and shrubs will make possible successful re-planting. Train onsite caretakers on daily landscape maintenance and best practices.	Overarching Policies 157-161 Specific Policies 168-172	Short term - medium term RKIF Board and DGA in collaboration with relevant landscape experts, universities and institutions, <i>i.e.</i> Lebanese Landscape Association (LELA).

Task	Comments	Relevance to CMP policies	Completion By
Management Plan	As an emergency nomination, a management plan was not included. This needs to be developed, a requirement of all WH sites. A component of the management plan should include strategies for visitor management, presentation, and interpretation of the World Heritage site.	The whole CMP is the basis for the future elaboration of the management plan	Short term - medium term (2025-2026) Ministry of Culture - DGA in consultation with RKIF Board and Ministry of Economy. Possible partnership with UNESCO, ICOMOS, and ICCROM
Preservation Master Plan	Simultaneously with the management plan, a preservation master plan should be developed. The elliptical site needs to be made into a single plot. The preservation master plan will propose zoning regulations, adaptive reuse possibilities, competitions such as the one suggested for the boundaries, etc. Design guidelines need to be developed for the adaptive reuse of the Niemeyer buildings and for new construction in the undeveloped portion of the ellipse.	Policies 1-5 Specific Policies on the Fairground Buildings and Landscape	Short term - medium term (2025-2026) RKIF Board and DGA, in collaboration with DGU and concerned experts
Rethinking the Urban Master Plans of Tripoli and El Mina	The urban master plans of Tripoli and El Mina need to be re-evaluated and synchronized to reflect RKIF's World Heritage status. In addition, design guidelines need to be developed for the immediate perimeter setting of the ellipse.	Policies 1-2	Short term - medium term (2025-2026) RKIF Board and DGA, in collaboration with DGU and relevant experts
Accessibility Plan	The site currently operates with limited public access yet it is the largest green space within the city. As the site is made-safe and is equipped with a greater number of personnel, unrestricted public access to the landscaped areas should gradually be permitted. The plan should consider inclusive accessibility for People with Disabilities (PwDs). ²⁹⁶	Policy 3	Medium term RKIF Board and DGA with accessibility and heritage experts

²⁹⁶ Lebanon ratified the *United Nations Convention on the Rights of Persons with Disabilities (UN CRPD)* in February 2023. Article 30 of the CRPD stresses on the right to culture, specifically participation in cultural life, leisure and sport, <https://www.un.org/disabilities/documents/convention/convoptprot-e.pdf> (accessed November 2, 2023).

Tasks that are identified as a priority but need more time and resources to be addressed within the medium-to long-term period:

Task	Comments	Relevance to CMP policies	Completion By
Drainage and Water Management Plan	Development of a comprehensive site drainage and water management plan with priority-based actions to prevent water infiltration into the basements of buildings and underground shelters.	Policy 12	Medium to long term RKIF Board and DGA
Landscape Management Plan	Development of a landscape management plan for the entire site as well as the immediate vicinity of the Boundary Wall in coordination with the Municipal Authorities. The team assigned to this task should include experts in heritage landscape design/planning and horticultural engineering that will be guided by the landscape policies of the RKIF-CMP.	Policies 4-5, Specific Policies on Built and Planted Landscape, in particular Policy 158	Medium to long term RKIF Board and DGA with historic landscape architects and skilled horticultural engineers. Potential partnerships with local universities, specialized organizations such as IFLA, IUCN, ICOMOS-ISCCL and LELA
Maintenance Plan	Development of a maintenance plan for cyclical care based on priorities. The maintenance plan should include both buildings and landscape	Policies 1-2 Policies on Buildings 15, 17, 19, 23, 24 Policies on Landscape 151,154, 159,166, 171, 174, 175, 178, 178, 182	Medium to long term RKIF Board and DGA in collaboration with preservation architects and engineers
Risk Mitigation and Preparedness Plan	Lebanon, as a country, is prone to earthquakes and conflicts. The site is near the shoreline, and with rising sea levels due to climate change, flooding may be an issue. Fire is also a risk, as the buildings are now surrounded by mature vegetation.	Policy 1-2	Medium to long term RKIF Board and DGA in collaboration with ICCROM and ICOMOS
Capacity-Building of an RKIF Maintenance Team	With concrete being the main building material of the Complex, RKIF should have its own repair team to undertake periodic maintenance and minor patching and repairs. The cost of periodic maintenance and minor repairs can be covered by respective users and beneficiaries.	Policy 1-2	Medium to long term RKIF Board and DGA in collaboration with OEA. UNESCO could assist in the provision of relevant training in historic concrete repairs



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Increased interest and visitation have been observed after RKIF's inscription on the World Heritage List in 2023 and the subsequent designation of Tripoli as the Arab Capital of Culture during 2024.



Appendices

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Appendix 1.

Public Survey - Summary Report

Pamela Jerome, 15 June 2022

Survey Results

On October 26, 2020, an online survey went live to which 556 individuals responded over three months. Another 124 online surveys were filled in based on face-to-face interviews with randomly chosen individuals from Tripoli. The purpose of the survey was to provide public outreach for the Conservation Management Plan being developed for the Rachid Karami International Fair. The survey aimed to assess the public's heritage perception towards this modern concrete complex and understand their aspirations towards its future development.

The survey questions included general demographics of those surveyed (Figs. 1 and 2), number and distribution of Tripolitan respondents, familiarity with the site, number of times visited and frequency, reasons for visiting, methods of transportation to the site, most important qualities, limitations to visitation, knowledge of who designed the site, values perceived, iconic structures identified, perceptions regarding the future uses of the site, and whether the site should be designated nationally and/or inscribed on the World Heritage List.

The results of the online survey indicate that approximately 49% of the respondents are from Tripoli (Fig. 3). Of the total number of respondents, 299 were residents of Tripoli, 281 of which noted their neighborhood or street names as shown in the below table (Fig. 4). Most respondents are familiar with the site (Fig. 5) and have been there at least once, with only 15% indicating that they had never visited (Fig. 6).

Age / العمر :

680 responses

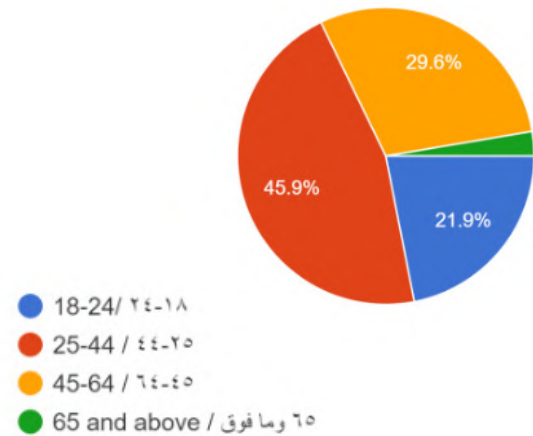


Figure 1. Age range of the survey respondents.

Gender / الجنس :

680 responses

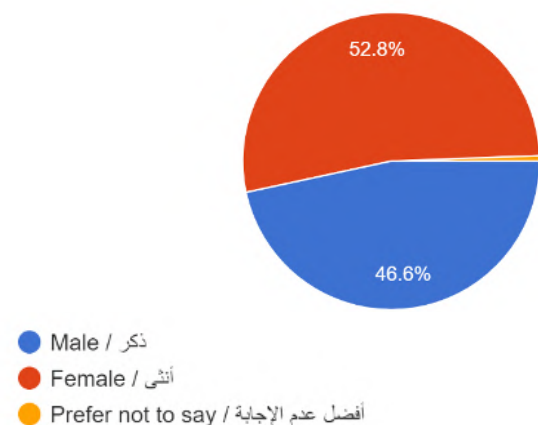


Figure 2. Gender disposition of respondents.

A variety of reasons were given for not having been to the site including never having heard of it (at least 10 respondents), impression that Tripoli is unsafe, too far a distance to travel, nothing important to visit, lack of knowledge of Lebanon's heritage, open museum with no sociocultural spirit (an architect living in Tripoli), security/sanitary issues, uninteresting and incompleteness of the site (tourist guide), lack of public access, activities not interesting enough, absence of activities, and lack of awareness that it can be visited.

For those respondents who had visited the site (85%), the frequency of visitation was questioned (Fig. 7). Of the respondents who visited the site, the most (67%) did so to attend events (performances, festivals or exhibitions). The next most-cited reason is sightseeing (38%), with the majority of those who have visited the site only once falling into this category. Organized tours and education were noted as a reason for visiting (27%).

If you live in Lebanon, specify where /

إن كنت تقيم في لبنان، الرجاء تحديد المنطقة

607 responses

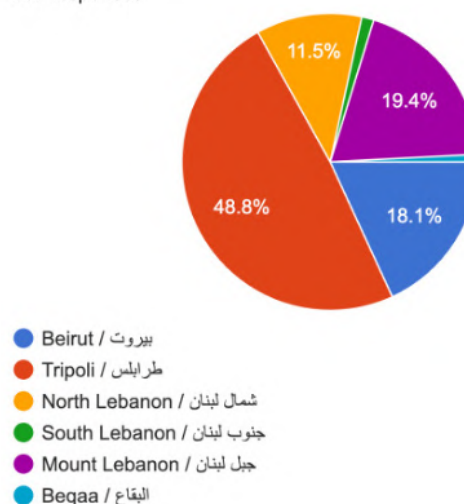


Figure 3. Place where the Lebanese responders live.

Table distribution of respondents who live in Tripoli

Mitein St.	16	Haddadin	2
Abdel Latif Bissar St.	1	Hay Al Nouri	1
Abou Samra	44	Jabal Mohsen	1
Maarad	29	Meskaoui St.	1
Malloule	2	Moharram	3
Moheitra	2	Mina St.	3
El Mina	36	Mounla	6
Tall	2	Nadim El Jisr St.	7
Azmi St.	19	Al NejmeH St.	2
Bab Al Ramel	8	Riad Al Solh St.	4
Bab Al Hadid	4	Al NejmeH Place	2
Bahsas	3	Souk Al Arid	1
Beddaoui	5	Mar Maroun	1
Bechara El-Khoury	2	Tebbaneh	9
Dam w Farz	29	Zehriyeh	8
Dar Al Tawlid St.	1	Al Thakafeh St.	1
Qobbeh	21	Amine Mokaddem St.	1
Jemmayzat St.	3	Talaet Al Rifaiyeh	1
Grand Total			281



Adapted from Google Earth by Mosbah Rajab.

Figure 4. Map showing the geographic distribution of Tripolitan survey respondents based on specified neighborhoods and street names.

هل لديك علم مسبق بوجود معرض رشيد كرامي / Have you heard of the Rachid Karami International Fair (RKIF)?
الدولي؟

680 responses

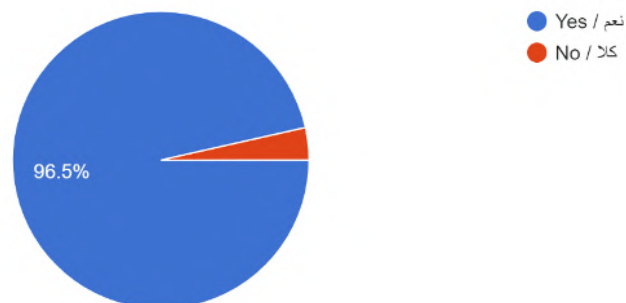


Figure 5. Familiarity with the site.

هل سبق وزرت المعرض؟ / Have you visited the RKIF?
680 responses

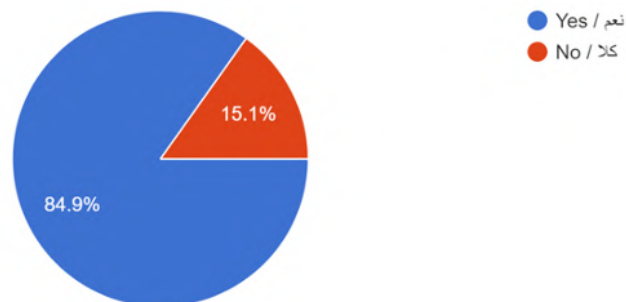


Figure 6. Only 15% of the respondents had never visited the site.

Walking (passive exercise – 37%) appears to be popular, as is the use of the site for leisure purposes (20%), sports and exercise (15%), and bicycling (13%). Professional uses were cited by the least number of respondents (13%).

Other reasons mentioned for visiting the site included that it is “somewhat of a pilgrimage,” photography, drawing, rollerblading, design studios, the possibility of investment, architectural and landscape projects, and nostalgia (Fig. 8).

If "Yes", how many times have you visited RKIF?
إن كانت الإجابة نعم، حدد عدد الزيارات
578 responses

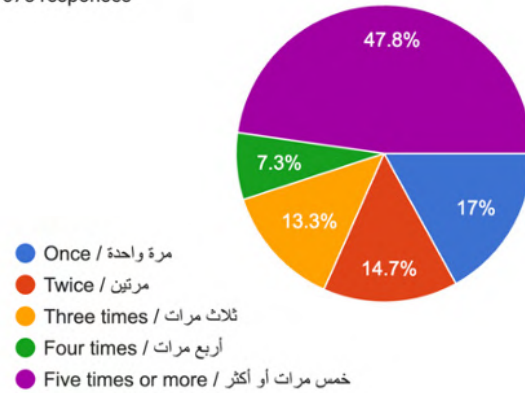


Figure 7. Frequency of visitation for those familiar with the site.

What is the purpose of your visit/s? (Check all that apply) / (يمكن اختيار أكثر من جواب)
(مطابق)

584 responses

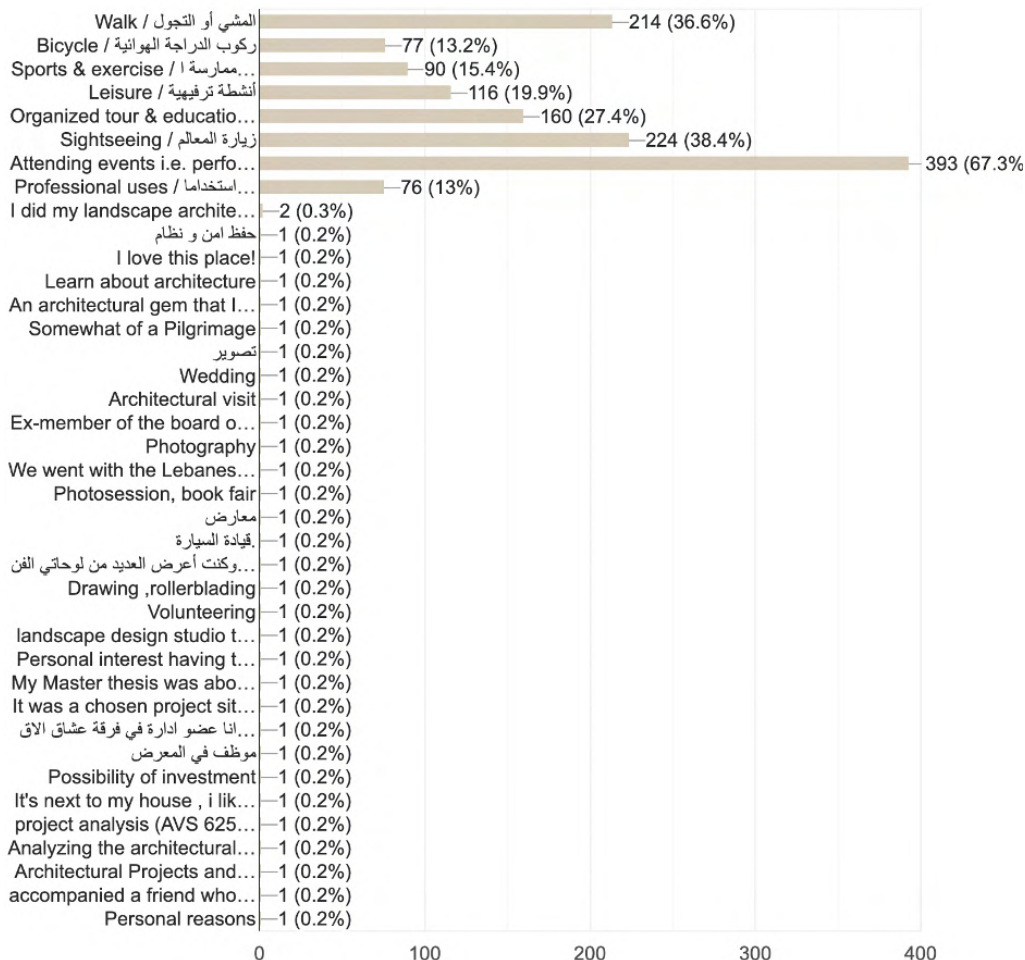


Figure 8. Reasons for visiting the site.

Methods of transportation overwhelmingly favored private transport, with some rented vehicles, and for those living close by, walking or bicycling, with a small minority using public transportation to arrive at the site (Fig. 9).

In terms of most important qualities, the built structures were most popular (413), with open park space coming in a close second (399). Historic site came in third (323) with 127 respondents indicating they were unsure about this quality (Fig. 10). Respondents cited other qualities, including modern architectural icon, architectural quality, masterpiece, exquisite, amazing architecture, beautiful buildings, and space to breathe, the concept of the space and ideology of its design; Central Park of Tripoli; one of the few public spaces in Lebanon that has potential, a beacon of hope and a node to the

golden ages of Lebanon, and a unique identifier for Tripoli. Oscar Niemeyer was mentioned for his avant-garde architecture and the fact that the Lebanese have access to a project designed by a world-renown architect. The potential economic benefit to Tripoli and its central location within the city was noted, as well as its use for public events.

If we examine the responses of the residents of Tripoli alone (Fig. 11), the most important quality of RKIF for them becomes the open park space (168), with built structures coming second (142) and then RKIF as a historic site (99). It is important to note that the quality of being a historic site receives mixed responses from residents, with a significant number of respondents rating it as both the highest and lowest quality, reflecting differing perspectives.

What form of transportation do you use to reach the site? (Check all the apply)/ ما هو نوع وسيلة النقل التي تستخدمها للوصول إلى الموقع؟ (يمكن اختيار أكثر من جواب مطابق)

588 responses

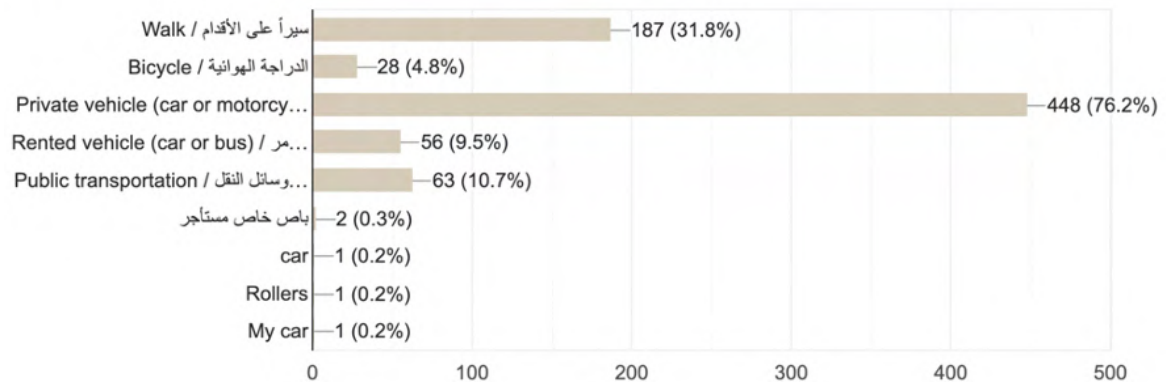


Figure 9. Forms of transportation used to get to the site.

Which three qualities of the RKIF are most important to you? (Rate from 0 to 3, with 3 being best, 1 the worst, and 0 if you are not sure) / (ما هي ميزات المعرض... من صفر الى ٣ ، ٣ هي الإجابة الأفضل وصفر إذ لم تكن متأكداً)

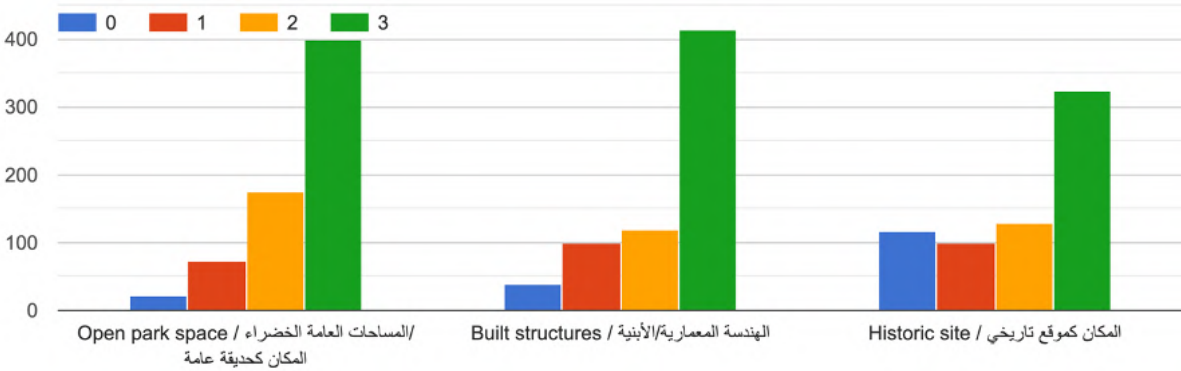


Figure 10. Most important qualities for all respondents.

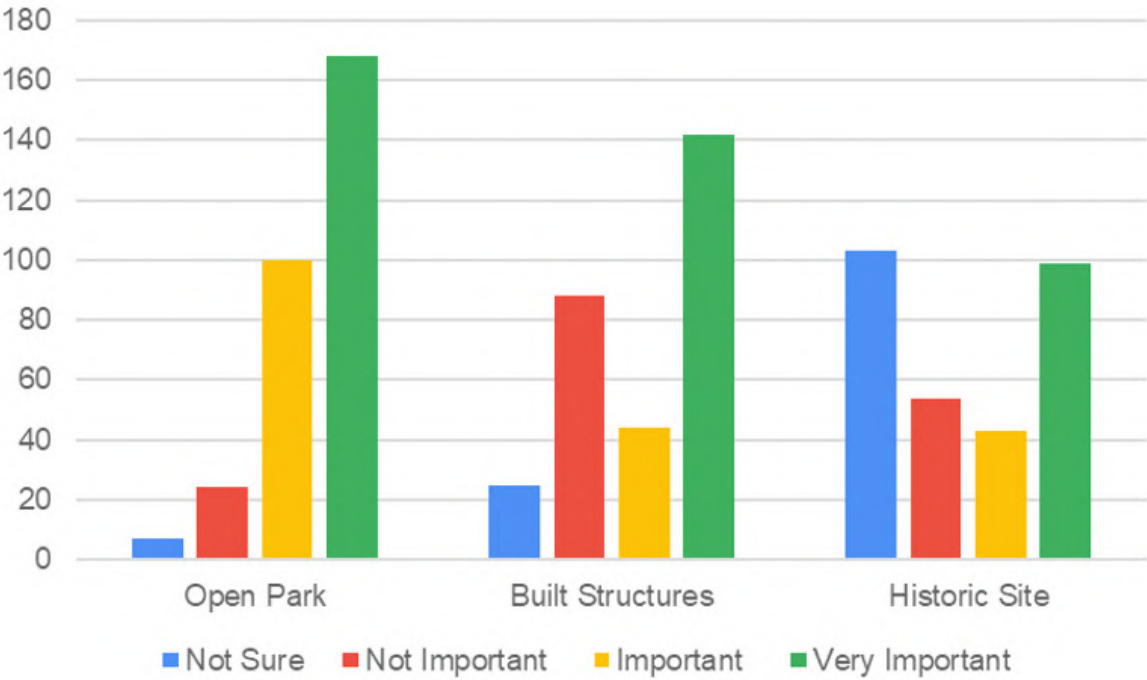


Figure 11. Most important qualities for the 299 resident of Tripoli.

Nearly half of the respondents (322) cited restricted access outside of public events as the reason the site feels inaccessible (Fig. 12). The concrete fencing around the perimeter of the site was the next most-noted reason (136), with the limited number of entrances and exits coming in third (99). Responses from residents (Fig. 13) match with the order stated above for all respondents; (100) rated restricted access outside of public events as the main reason the site feels inaccessible, (47) considered the concrete fence as the second most-noted reason for inaccessibility on site, and (34) considered the limited number of entrances and exits as the third most important factor for inaccessibility on site.

Lack of information about the site (weak communication), including when it is open, and the requirement of a permit to enter were mentioned most frequently. Politics, bribery to enter without a permit – lack of consistency from guards in terms of who is permitted to enter, and the danger of collapse/poor conditions of the structures were also noted often. No permanent activities and the highway surrounding the site making it difficult/dangerous for pedestrians to access were other reasons, as well as the psychological barrier – it has always been kept like private property, along with its reputation and social stigma. The lack of a cafeteria/place to eat/drink was noted by one respondent. Many noted the lack of safety and security.

Which of the following aspects do you feel make the site inaccessible? (Rate from 0 to 3, with 3 being worst, 1 being the least bad, and 0 if you are not...
(لأكثر سوءاً، الواحد هو الأقل سوءاً، وصفر إذا لم تكن متأكداً...)

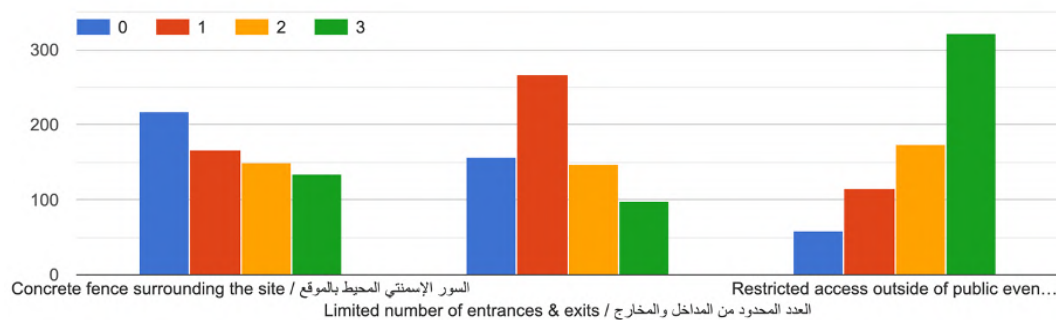


Figure 12. Respondents' opinions about the inaccessibility of the site.

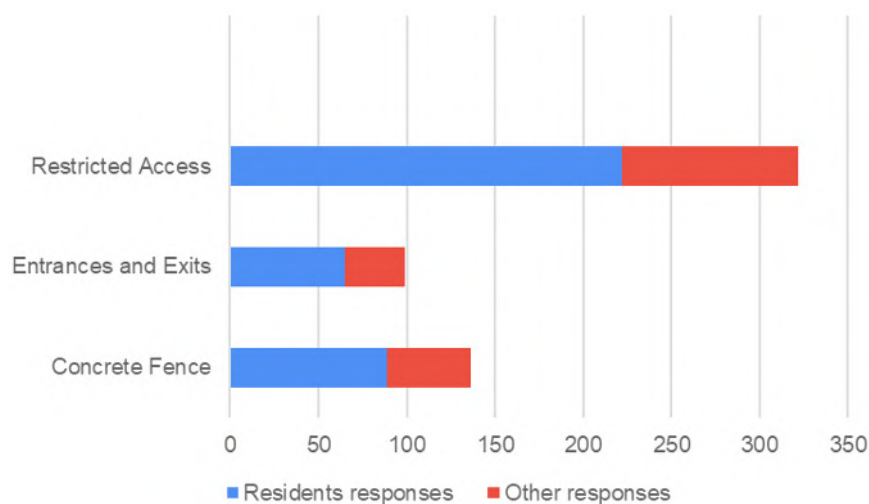


Figure 13. Total responses of the highest rate (3) of why the site feels inaccessible shown with respect for residents of Tripoli and non-residents.

In terms of values, respondents were asked to rate historic, aesthetic, architectural, social, economic, and urban values from 1 to 5, with 5 having the highest value (Fig. 14). The greatest number of respondents rated architectural (333) as the highest value the site conveys. Urban is the next highest value (258), followed by aesthetic (250) and economic (238). Historic and social values were considered the lowest (209 and 125, respectively). Interestingly, only 23 respondents found low architectural value – clearly, the site is appreciated for its architectural significance. Heritage and artistic values were noted. Green space and cultural values were also cited. Several indicated that it puts Tripoli on the map and is a reason to visit Tripoli.

Touristic and leisure values were mentioned, as well as its ability to be an economic driver for the city. The value of having a public space was also noted. Figure 15 shows the results of the highest rate (5) for the residents of Tripoli compared to that of all respondents. Note the change in the hierarchy and order of values; while the result of all respondents shows the architectural value at the top of the scale, urban second, then aesthetic, followed by the economic value, the results of 299 residents show that the economic value is at the top of the scale, followed by architectural, then the urban and the aesthetic values. Knowing that the majority of respondents (58%) knew who the architect of the site was (Fig. 16).

Which cultural or other values do you ascribe to RKIF? (Rate from 1 to 5, with 5 being the most valuable) / ما هي القيم الثقافية أو الأخرى التي (تتسبها إلى معرض رشيد كرامي الدولي) (التقييم من ١-٥، ٥ هي الإجابة الأفضل)

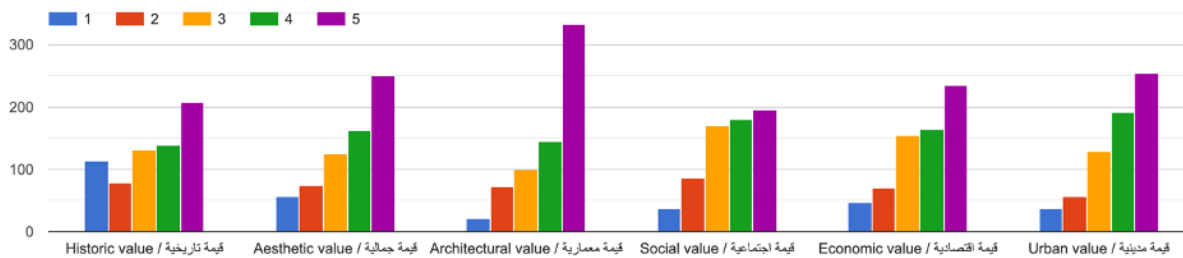


Figure 14. Cultural values ascribed to the site.

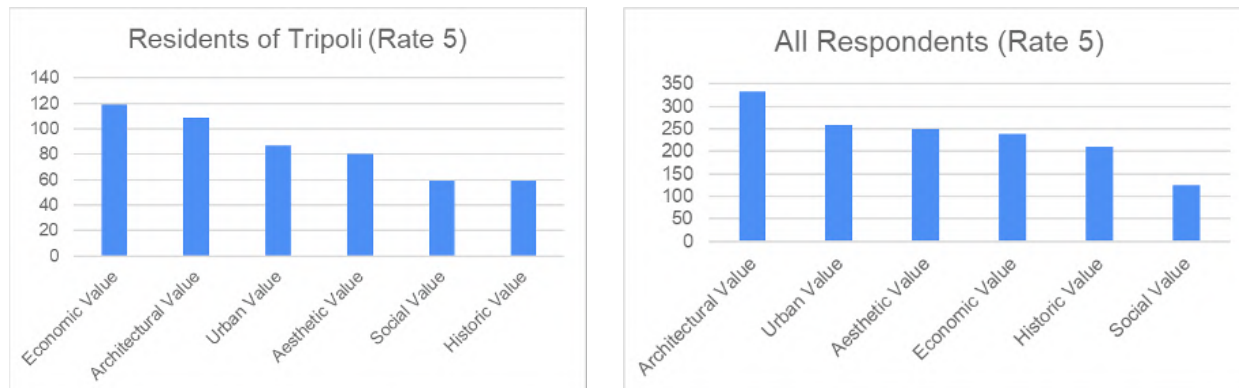


Figure 15. Cultural values ascribed to the site.

Do you know who designed the RKIF?

هل تعرف من صمم معرض رشيد كرامي الدولي؟

680 responses

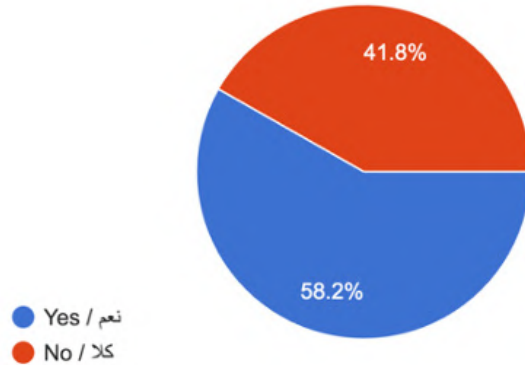


Figure 16. Number of respondents who correctly identified the architect of the site.

The following uses were weighted 0-5:

cultural activities (exhibitions, concerts, theater), conferences/education, dining, sports activities, commercial activities, park, tourism, professional uses, and private rentals (Fig. 17). Overwhelmingly, cultural activities were most popular (65%). Private rentals fared the worst (37% opposed), followed by dining (25% disagreed). Conferences/education was also popular (43%), as was tourism (40%), and park (35%). Sports activities (23%) and commercial activities (21%) came next in popularity. Finally, for professional uses, the highest ranking (23%) fell in the middle (3), with only 103 respondents (15%) giving it a 5.

How would you prefer to see the site utilized?

(Rate from 0 to 5, with 5 being the best and 0 if you don't agree with the suggested use)

كيف تفضل ان يستخدم الموقع (التقييم من صفر الى ٥.٥ هي الإجابة الأفضل، و صفر إن كنت لا توافق على الاستخدام المقترح)

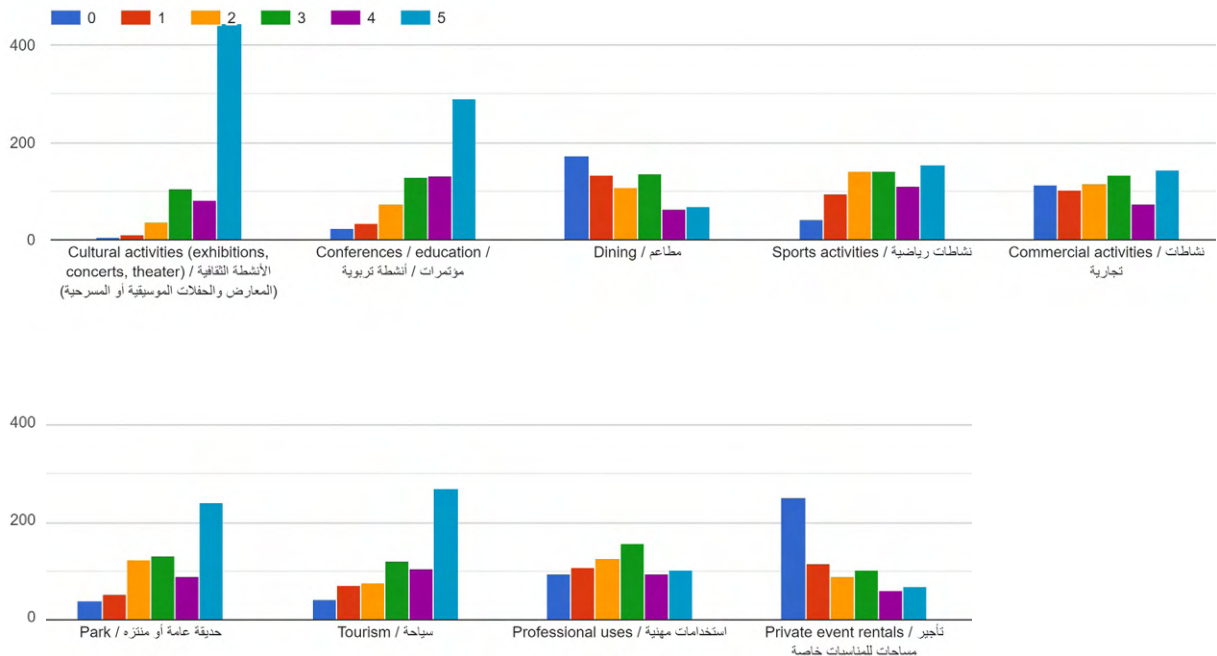


Figure 17. Preferred uses.

Multiple respondents wrote that the site should be used for cultural activities including a permanent museum and/or exhibition center (branch of the national museum, architecture, art, culture, history, music festival, arts and crafts center). Along this line, one respondent proposed the site be a window to northern cultural and artisanal activities; another that the site be used for art galleries, art auctions, and seasonal fairs for arts, artisans, and crafts marketplace.

Two others indicated that the site be used for a permanent crafts exhibit. Several respondents noted educational uses such as an extension of one of the faculties of the Lebanese University as a School of Art or School of Architecture. Music School was also noted, as was public library, research center for the history of Tripoli, and branch of the Arab Book Fair. An experimental lab for artists and students was mentioned. At least 11 respondents proposed the site be used as a public space, community center, and/or socio-cultural center.

Two respondents proposed children's activities. Economic interest was suggested utilizing the site as a free-trade zone, working space for designers/startups, restaurants and bars, economic exhibitions, goods-storage depot, an airport, hotels and housing. The site was also mentioned as a venue for national and international political meetings, and in this vein, one person suggested the site be equivalent to

the free-speech section of Hyde Park. At least three people indicated the site should be used as designed.

Respondents were asked to choose which RKIF structure is most representative of the site from the following: the Grand Cover, Lebanon Pavilion, Monumental Arch, Open-Air Theatre, Experimental Theatre, Helipad and Space Museum, Daycare/Manège, and Water Tower and Restaurant (Fig. 18). The Monumental Arch was by far the most popular (35%). The Experimental Theatre was voted as the next most iconic structure (27%), followed by the Lebanon Pavilion (17%). The Grand Cover was next (7%), then Open-Air Theatre (5%), Water Tower and Restaurant (3%), Helipad and Space Museum (2%), and Daycare/Manège (1%). Eleven individuals voiced the opinion that all of the structures are equally iconic – that it is the ensemble that counts. One person voted for the underground tunnels and spaces and one person for the Guest House (Minjara). One person was negative about all of the structures stating that it was an affront to Lebanese culture.

When asked whether the site should be nationally designated, 72% responded affirmatively, whereas 22% did not think it should be and 6% did not know (Fig. 19). Regarding World Heritage listing, 82% were affirmative, 10% responded negatively, and 8% were unsure (Fig. 20).

Which RKIF structure do you think is most representative of the site? / أي بناء معماري من أبنية المعرض تعتقد أنه الأكثر تمثيلاً للموقع؟
680 responses

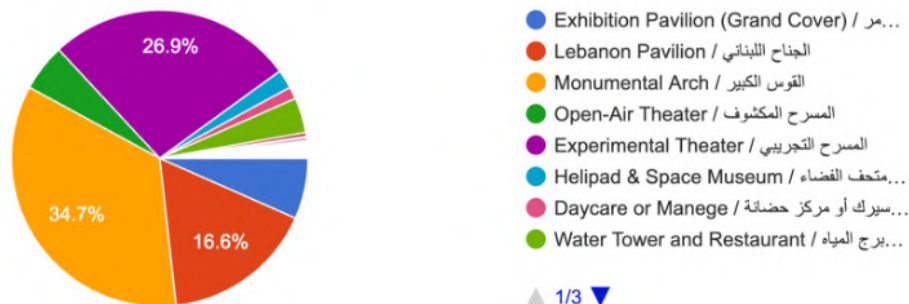


Figure 18. Respondents' opinions as to which structure is most representative of the site.

Do you believe the RKIF should be a protected national historic landmark, like the Citadel of Tripoli or Baalbek? / هل تعتقد ان معرض رشيد كرامي الدولي يجب ان يكون معلم تاريخي وطني محمي على غرار قلعة طرابلس أو بعلبك؟
680 responses

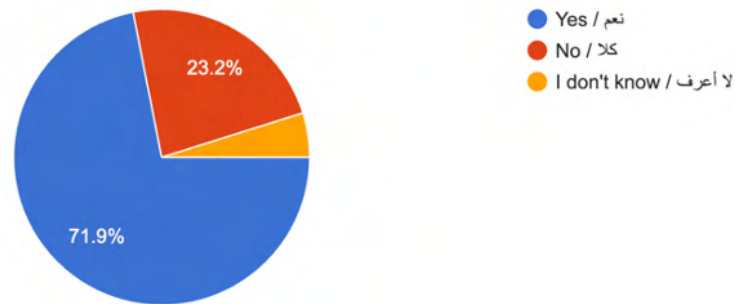


Figure 19. The majority of respondents felt the site should be nationally designated.

Do you want to see the RKIF become a UNESCO World Heritage Site? / هل تريد ان يصبح معرض رشيد كرامي الدولي أحد المواقع المدرجة على قائمة اليونسكو للتراث العالمي؟
680 responses

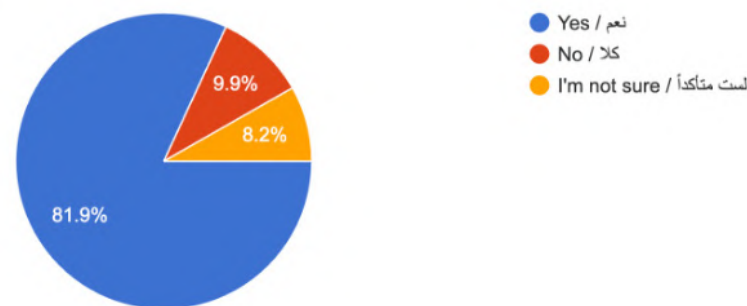


Figure 20. A greater percentage felt the site should be designated by UNESCO.

Conclusion

It appears that many respondents view the Rachid Karami International Fair as architectural heritage. They also see it as part of the identity of Tripoli that is unique. The quality of its openness and its perception as an urban oasis is important for many. The site is also viewed through the lens of nostalgia representing idealistic times in Lebanon. Although sightseeing, tours, and various exercise activities are considered important, clearly cultural uses for the site are favored as are educational and its use as a civic space/park.

None of the above-stated preferences are incompatible with the site. In fact, these uses could enhance the site's desirability and attractiveness. Clearly, improvements are

necessary to make the site feel less barricaded and more inviting and secure.

It is interesting that more people felt the site should be designated by UNESCO than as a national site. Of course, UNESCO designation requires that the site is protected as a historical site on the national level. The former perception may be a result of Lebanese archaeological heritage, which is superlative, and perhaps the perception of Mid-Century Modernist heritage as not representing national heritage but more international heritage. However, from the survey responses, it is clear that Lebanese consider the site important and perhaps an incentive for visitation to Tripoli.

Appendix 2.

Interviews with Main Stakeholders and Interest Groups - Summary Report

Mousbah Rajab, January 2022

As part of the development of the Conservation Management Plan for the Rachid Karami International Fair, several interviews were conducted with key players and activists about the value and future development of RKIF. Before presenting these interviews, a summary of the general context of Lebanon and Tripoli is proposed in the first part. This is followed by the justification of the targeted stakeholders in the second step. The interviews' synthesis is the subject of the third part. A list of the interviewees is added in the annex. It contains the details of their home institutions, their profile, and the date of the interview.

1. General context

Interviews with stakeholders were carried out in November and December 2021, in difficult political and economic circumstances. During this period, the country was experiencing an acute political crisis that started in October 2019 when protests erupted against the policies of the government.

This situation was compounded by a growing economic crisis causing a rapid devaluation of the Lebanese currency. Until 2019, the US dollar was trading at nearly 1,500 Lebanese pounds. At the time of the interviews, the value of the dollar on the black market exceeded 25,000 pounds causing a corresponding jump in the prices of consumer goods. It should be added to this that the Lebanese banks exercised capital controls, blocking access to deposits in dollars, and imposing a monthly ceiling for withdrawals in pounds. Before these measures, overseas bank transfers estimated at several billion dollars were made, thus endangering the central bank's reserves. The latter then decided to gradually reduce subsidies on the prices of consumer goods, in particular flour, medicines,

and gasoline. This decision exacerbated the social misery of a large part of the Lebanese population, and in the north of the country in particular.

For decades, Tripoli and the northern region, in general, have been experiencing difficult social and economic conditions. Social and economic indicators put them in last position at the national scale. This situation has worsened today and has increased the percentage of families living below the poverty line and the number of crimes committed daily. Convinced that this is only the result of a political plot targeting their city for decades, the Tripolitans see the current crisis as a continuation of the misery they have long suffered. Among the signs of the "conspiracy," they unanimously evoke two points: the city's exclusion from vital projects, and the deliberate paralysis of its major facilities, including the Rachid Karami International Fair.

As a reminder, the construction of the Fair started during the 1960s and was almost completed upon the outbreak of the Civil War in 1975. During the War, the structures were damaged and its finishes were stripped when used by the Syrian Army as a military base.

The rehabilitation work undertaken in the aftermath of the War covered a part of the Fair, in particular, the Reception Centre was transformed into administrative offices, and the conference hall was erected under the Grand Cover along with an exhibition area. The exhibitions and activities organized subsequently were mostly of a rather modest local character. Only two exhibitions had an Arab and African dimension. In any case, the Fair has never hosted an exhibition of universal scope, exhibitions for which it was designed. For the Tripolitans, it is part of the 6 "M"s, the major facilities of the city

and the North, paralyzed and whose names in Arabic begin with the letter M: the Oil Refinery, the Port, the Airport, the Train Station, RKIF, and the Olympic Stadium. This was mentioned several times during the interviews.

This stumbling in the functioning of the Fair did not prevent it from becoming a new cultural symbol in Tripoli, a modern architectural work built by a world-famous Brazilian architect. University research carried out after the War on modern architecture in Lebanon highlighted a new modern urban heritage, previously marginalized, part of which was subsequently inscribed on the list of the inventory of the Ministry of Culture.

The Fair, which has not yet been inscribed on the national heritage list although considered part of this modern heritage, was placed in 2006 on the World Monuments Watch, and in 2019, on the UNESCO World Heritage Tentative List. When asked why it is not yet classified as a national heritage, the Director General of Antiquities believes that its inclusion under the conditions of its current governance will add a third supervisory authority to it, which will further complicate its management. For him, its inclusion on the UNESCO World Heritage Tentative List would already go a long way in preserving it and pave the way for a new national status.¹

2. The choice of the interviewees

These interviews are part of an opinion poll among local stakeholders and the Tripolitan population. For the latter, a questionnaire was carried out online and the survey was launched in parallel with the interviews with key public and private actors, academics, intellectuals, and civil society activists.

A preliminary list of personalities to be interviewed was prepared in 2019. It included administrations and organizations directly or

indirectly concerned with the Fair, academics who spoke or wrote on this subject, and local activists well known by public opinion for their ideas, their work, and their efforts to revitalize the Fair, conserve modern heritage, and/or to make the city a better place to live. Other former public and private officials who marked the city's local political and cultural landscape were taken into account.

Political and health conditions in the country postponed the launch of the in-person interviews and survey until 2021. The list was then updated, with some having since left the country or passed away. An international institution, KTC (Knowledge Transfer Center), was added for its role in providing funds for vital projects for cities that are members of the MedCities network, of which the city of Tripoli is one.²

3. Values and future development of the Fair

The two questions posed to the actors "what value do you give to the Fair?" and "how do you see its future development?" were supposed to receive short and direct answers. On the contrary, almost all the interviewees developed their remarks, digressed, or strayed from the subject, which sometimes required a reminder of the questions asked. The remarks tended to place the subject in a broader context, historical, urban, or concerning the current economic crisis, which would have doubled the poverty rate in Tripoli. Nevertheless, the analysis of these statements is interesting. It brings out keywords that will be mentioned later.

3.1 How do the interviewees consider the value of the Fair?

The meaning of "value" has not always been understood in its current sense, even the broadest. In some cases, examples had to be given: socio-economic, cultural, etc. In others, the value had to be deduced from what the interviewees had to

¹ Interview with Sarkis Khoury, Director General of Antiquities, on December 15, 2021, about the role of the DGA in the reconstruction of the neighborhoods damaged by the Beirut blast on August 4, 2020. His point, above, came after a discussion about modern Lebanese heritage.

² See the detailed list of interviewees at the end of this report.

say. In any case, the analysis of the responses put first the economic benefit of the Fair ahead of the socio-cultural and aesthetic values.

This economic valuation was sometimes absolute in some responses. But for the most part, economic value was always followed by cultural value and then social value. For example, Mr. Toufic Dabboussi,³ a major economic actor in Tripoli and the North, considers that the Fair has only an important economic value. But for him, it cannot be considered a heritage monument because this will paralyze it.

This notion of paralysis also appears in other responses, notably from the director of the Fair and the former director of the Union of Municipalities of *Al-Fayhaa*,⁴ for whom the Fair was built for economic purposes. For Mr. Abdel Wahab, the Lebanese Antiquities Law excludes the Fair from being considered as a cultural heritage.⁵ Mr. Abou Rida specifies, for his part, that the Fair has a “moral” value, having been designed by an architect of international renown. He adds that this “moral” value must be reconciled with the “operational” value of the Fair. For the other interviewees, economic value is still considered to be predominant, along with cultural value. Some of them go even further considering that the economic value is necessary to be taken into account because it is useful for the sustainability of the heritage monument.

The cultural value, aesthetic for some, acquires its main importance among the interviewees because the Fair was designed by Oscar Niemeyer who offered to Tripoli (and Lebanon) an exceptional modern architectural work comprising a new vision of universal exhibitions. Some of them consider that the Fair is an added value to the historical heritage of the city and therefore, it should be seen in its urban context.

For several interviewees, the Fair has an economic, cultural but also social value. The analysis of their comments shows that this social value is linked first of all to the economic value. For them, the Fair has the task and the duty of creating jobs for the inhabitants, in a city where the poverty rate is among the highest at the national level. The other aspect of this social value is represented by the landscape voids of the Fair site. This site has saved a large area of the city from the concrete invasion, and as a result, it offers residents a breath of fresh air, and must be accessible to the public. This notion of public space will be reflected again when discussing the future role of the Fair.

3.2 What future development for the Fair?

Are the days of world exhibitions still in fashion, or out of date? The answers of the interviewees vary between these two extremes, with a majority for the intermediate and conciliatory responses.

For some, the Fair must play the role for which it was conceived and produced. Its site was expropriated for this purpose, and any change in function risks pushing the former landowners to demand the recovery of their plots. Others add that this role has never been tested before, and the Fair must be given a chance to prove itself. It will be useful here to specify that the nuance between Universal and International exhibitions is not perceived by the interviewees.

Are these exhibitions aimed at the participation of nations or international companies? The interviewees seem to not be much concerned by this difference as long as the Fair welcomes foreign exhibitors. But it is more appropriate in what follows to adopt the term “international exhibitions.”

³ Chairman of the Chamber of Commerce, Industry and Agriculture in Tripoli.

⁴ Successively: Antoine Abou Rida and Abdallah Abdel Wahab.

⁵ The Antiquities Law states in article 1: “All products of human activity, whatever civilization they belong to, are considered to be antiquities, before the year 1700.” But this article also includes a sentence, which is not always taken into account: “Are assimilated to antiquities and subject to the rules of this decree, immovable objects after the year 1700, the conservation of which is of public interest from the point of view of history or art, and which will be registered on the General Inventory of Historic Monuments planned 9 Art. 20.”

For others, the days of international exhibitions have past and over. According to Mr. Radwan Moukaddem,⁶ people can find anything they want through their mobile phones and receive it through Ali Baba. For him, it is necessary to go ahead and use the principle of DBOT: open the door to investors to have the possibility of operating one or more buildings for a certain period, by offering them suitable functions. The example of Minjara, the Guest House building transformed into a place of craftsmanship, serves as a model. For the other buildings, it would be possible to convert the Lebanese Pavilion into a restaurant, revitalize the Space Museum and the Experimental Theatre, and provide meeting spaces for intellectuals and spaces for incubators.

For the conciliators, who represent the majority of those interviewed, it is necessary to introduce new functions without excluding the possibility of organizing international exhibitions, while noting that the exclusivity of exhibitions in the Fair promised by the government for decades has never been applied. These new functions must respect Niemeyer's work, revitalize it, and meet the expectations of Tripolitans. For this, the Fair needs good governance. Several ideas were proposed on this subject: public park, restaurants (especially in the Lebanese Pavilion), amusement park, zoo, sports area, area for virtual services (banks, insurance, research and development), technology area, etc.

The interviewees who applauded or approved the idea of creating an urban park in the Fair were the majority. For them, this Fair is a public facility and Tripolitans must have access to it. For some interviewees, public access to the Fair must be well managed and controlled, to properly preserve Niemeyer's architecture. For those opposed to the transformation of the site into an

urban park, public access will devalue the role of the Fair for which it was designed.

Mr. Abou Rida, upon his appointment as director of RKIF, had organized access to the site using a card issued by the Administration to those who desired it. Hundreds of cards were thus given to the public. But for him, the experience was not successful, given the lack of a sense of responsibility among a large number of visitors, and the various material damages to street furniture, trees, and green areas. The card has since become chargeable. It serves people who want to exercise their morning sport or have a walk with the family. However, with the intensification of the economic crisis, Mr. Abou Rida says some guards were becoming easier to bribe by visitors wanting to have certain favors. He adds that after the budget of the Fair was reduced by the supervisory authorities, the Administration could no longer replace the employees who are retiring. Today, the Fair operates with 18 employees including 14 guards. Among the latter, four were chosen to do office work. As a result, he concludes that it will be impossible to organize access to everybody under the current operating conditions.

Some actors interviewed shared concrete proposals for the future development of the Fair. Wassim Naghi, who visited Niemeyer's works in Brazil, sees the Ibirapuera Park in São Paulo as the future of the Tripoli Fair. Built in 1953, this public park contains green areas, exhibition areas, a theater and museum, restaurants, and hosts cultural activities.⁷ Talal Khojah imagines the Fair transformed into a business park, just like those that exist in London.⁸

⁶ Vice-Chairman of the Rachid Karami International Fair Administrative Board.

⁷ See image of Ibirapuera Park in Chapter 5: page 238. For more images about Ibirapuera Park, see <https://journals.openedition.org/bresils/2413> (accessed April 30, 2024).

⁸ For more information on the North London Business Park and the Chiswick Business Park, London visit <https://www.londonofficespace.com/buzz/north-london-business-park/> and <https://coffeeinthesquare.typepad.com/.shared/image.html?/photos/uncategorized/aerial.jpg> (accessed December 15, 2021).



Ibirapuera Park in São Paulo, Brazil. It features many similarities to RKIF stylistically and in the fact that it is in a dense urban setting.

Source: Fernando Stankuns, *Parque do Ibirapuera, São Paulo*, (2008), Wikimedia, https://commons.wikimedia.org/wiki/File:Parque_do_ibirapuera_visto_do_c%C3%A9u.jpg (accessed April 1, 2024).

Khaled Ziadeh demanded the existence of a local authority capable of developing suitable urban infrastructures for tourists, and the organization of activities and festivities on the occasion of the choice of Tripoli as the “Arab Capital of Culture” in 2023, where the Fair will be the main seat, with “Tripoli and the Mediterranean Civilization” as the main theme.

For Toufic Dabboussi, the Fair should be part of the Greater Tripoli Economic Project, a project developed by the Chamber of Commerce, Industry and Agriculture in Tripoli. This project, the territory of which extends from the city of Batroun in the South to Akkar in the North, proposes to devote the Fair to technology and innovations with the installation of solar panels on its Grand Cover, dedicated to public lighting in Tripoli, El-Mina, Beddaoui, and Qalamoun.



Aerial view of RKIF, showing in green the urban park proposed by Harmandayan.

Adapted from Google Earth, 2021.

Diran Harmandayan, finally, considers that his proposal drawn up in 2002 for the Fair as part of the study of the Al-Fayhaa master plan may still be valid with a minor update taking into account current needs. He advocates the integration of the Department of Dramatic Art of the Faculty of Fine Arts and Architecture at the Lebanese University in an independent structure under part of the Grand Cover. He adds that the TSEZ (Tripoli Special Economic Zone) must be integrated in the same way and that the construction of a building dedicated to it in an area behind the Grand Cover is a mistake. For him, this surface is part of a void that will have to be developed into an urban park. He also proposed a Modern Art Center in the Lebanese Pavilion, a Meeting Center for Mediterranean Civilizations, a socio-cultural center, a local heritage museum, and an exhibition area for plastic art. Mr. Harmandayan believes that the university will create a dynamic and that in any case, it will be necessary to give a soul to the Fair, a life. For him, this life will not exist without economic profitability.

Conclusion

The economic and cultural value of the Fair appeared clearly in the statements of the interviewees. As for the future development of Niemeyer's work, all of the responses were relatively realistic: seek a role more suited to the local and national context through various activities and functions, while keeping the function for which the Fair was designed, and giving the right to access it after having developed it into a well-managed and controlled urban park. A more in-depth analysis of these remarks highlights three important points that should be emphasized: governance, urban context, and uncertainty.

The notion of governance has appeared on several occasions and often with insistence. It concerns both the local authorities and the Administration of the Fair. Whatever the latter's future development project, the absence of rigorous management of its activities at the site, and the appropriate urban infrastructure and services, this project is doomed to failure. For several interviewees, the involvement of the private sector in the management of the Fair is essential. The principle of "Public Private Partnership" (PPP) was mentioned several times.

Moreover, there is almost unanimity on the fact that the Fair should be seen in its urban context. Some consider it to be one of the major urban amenities of Tripoli (the 6 "M"s), and that it must play its economic role well. For others, it is part of the city's urban heritage and should be included in the tourist itineraries and be accessible to the public.

The last point concerns the state of uncertainty about the future development of the Fair: "It will be necessary to carry out small experimental interventions to identify what may be suitable," "It will be difficult to recommend the type of future development with all that is happening around us," or "We have to make flexible choices." This state of uncertainty is linked to the unstable national and regional political and economic context, which has lasted for about a decade. Uncertainty, instability, and flexibility are, therefore, keywords to remember in any reflection on the future role of the Fair.

*List of interviewees**Main Stakeholders and Groups of Interests*

Institution	Name	Profile / Capacity	Date of Interview
Rachid Karami International Fair	Radwan Mukaddem	Vice-Chairman of RKIF Administrative Board	02/12/21
	Antoine Abou Reda	Director of the Rachid Karami International Fair	01/12/21
Municipalities	Riad Yamak	Mayor of Tripoli Municipality	02/12/21
	Abdel Kader Alameddine	Former President of Al-Mina Municipality	09/12/21
	Dima Homsy	Director of Al-Fayhaa Union of Municipalities	08/11/21
Public Administrations	Samar Karam	Head of Cultural Sites-North Lebanon, Directorate General of Antiquities, Ministry of Culture.	15/12/21
	Hassan Dennaoui	Acting Chairman/General Director of Tripoli Special Economic Zone	09/12/21
Chamber of Commerce, Industry and Agriculture of Tripoli and North Lebanon	Toufic Dabboussi	President of the Chamber of Commerce, Industry and Agriculture of Tripoli and North Lebanon.	02/12/21
	Fawaz Hamdi	Chairman of the "Business Incubation Association in Tripoli". He was a member of the experts' team for the preparation of a strategic plan for Al-Fayhaa.	02/12/21
Lebanese University	Gaby Khoriaty	Architect, professor at the Lebanese University, former member of the Council of the Order of Engineers and Architects, former member of Al-Mina Municipal Council	03/11/21
	Maha Kayal	Anthropologist, researcher and professor at the Lebanese University, former president of the Research Center at the Institute of Sociology. She was a member of the experts' team for the preparation of a strategic plan for Al-Fayhaa.	04/11/21
Order of Engineers and Architects Tripoli	Wael Debs	Vice-president of the Order of Engineers and Architects and president of the Architects' branch. Architect, professor at the Lebanese University,	04/11/21

Institution	Name	Profile/Capacity	Date of Interview
Civil Society	Elias Khat	Founder and Director of the “Tripoli Film Festival”, and initiator of cultural activities.	05/11/21
	Wassim Naghi	Activist for the conservation of RKIF. Founder of Niemeyer Foundation in Tripoli, president of the “French: Mediterranean Union of Architects” (UMAR). Professor at the Lebanese University.	05/11/21
	Talal Khojah	President of Bauzar Association, former professor at the Lebanese University.	02/12/21
	Samira Baghdadi	Consultant at Safadi Foundation, expert in local development, professor of local and municipal development at USJ, former member of the municipal council of Tripoli.	09/12/21
	Khaled Ziadeh	Author and researcher, former ambassador of Lebanon in Egypt and the Arab League, former professor at the Lebanese University, former president of “Madinati for Culture and Development Association” in Tripoli.	15/12/21
	Diran Harmandayan	Urban Planner. He was commissioned between 2000 and 2002 by the DGU for the elaboration of a new master plan for Al-Fayhaa territory. Former professor at the Lebanese University.	08/12/21
International Institutions	Abdallah Abdel Wahab	Senior consultant at the “Knowledge Transfer Center” – MedCities. Former director of Al-Fayhaa Union of Municipalities. He was then the director of the elaboration of a strategic plan for Al-Fayhaa.	08/11/21

Appendix 3.

Description of Comparative Analysis Sites on the World Heritage and Tentative Lists

Sites on the World Heritage List¹

Ciudad Universitaria de Caracas (Venezuela)

- Covering an area of 164,203 hectares, the site includes masterpieces of architecture and modern art built to the design of architect Carlos Raúl Villanueva, between 1940 and 1960, and includes the Botanical Garden. The University integrates a large number of buildings, art and nature into a clearly articulated ensemble, creating an open and dynamic space, where the art forms become an essential part of the inhabited place. The forms and structures express the spirit and technological development of their time in the use of reinforced concrete.
- **Criterion (i):** The Ciudad Universitaria de Caracas is a masterpiece of modern city planning, architecture and art, created by the Venezuelan architect Carlos Raúl Villanueva and a group of distinguished avant-garde artists.
- **Criterion (iv):** The Ciudad Universitaria de Caracas is an outstanding example of the coherent realization of the urban, architectural, and artistic ideals of the early 20th century. It constitutes an ingenious interpretation of the concepts and spaces of colonial traditions and an example of an open and ventilated solution, appropriate for its tropical environment.

The Architectural Work of Le Corbusier, an Outstanding Contribution to the Modern Movement (Argentina, Belgium, France, Germany, India, Japan, Switzerland)

- Chosen from the work of Le Corbusier, the 17 sites comprising this transnational serial property are spread over seven countries and are a testimonial to the invention of a new architectural language that made a break with the past. They were built over a period of a half-century, in the course of what Le Corbusier described as “patient research”. The Complexe du Capitole in Chandigarh (India), the National Museum of Western Art, Tokyo (Japan), the House of Dr Curutchet in La Plata (Argentina) and the Unité d’habitation in Marseille (France) reflect the solutions that the Modern Movement sought to apply during the 20th century to the challenges of inventing new architectural techniques to respond to the needs of society. These masterpieces of creative genius also attest to the internationalization of architectural practice across the planet.
- Despite its diversity, the Modern Movement was a major and essential socio-cultural and historical development of the 20th century, which has to a large degree remained the basis of the architectural culture of the 21st century. From the 1910s to the 1960s, the Modern Movement, in meeting the challenges of contemporary society, aimed to instigate a unique forum of ideas across the world, invent a new architectural

¹ The description of the above-referenced sites is paraphrased from the World Heritage List, <https://whc.unesco.org/en/list/> (accessed September 24, 2022).

language, modernize architectural techniques and meet the social and human needs of modern man. The series provides an outstanding response to all these challenges.

- **Criterion (i):** The Architectural Work of Le Corbusier represents a masterpiece of human creative genius, providing an outstanding response to certain fundamental architectural and social challenges of the 20th century.
- **Criterion (ii):** The Architectural Work of Le Corbusier exhibits an unprecedented interchange of human values, on a worldwide scale over half a century, in relation to the birth and development of the Modern Movement. The Architectural Work of Le Corbusier revolutionized architecture by demonstrating, in an exceptional and pioneering manner, the invention of a new architectural language that made a break with the past. The Architectural Work of Le Corbusier marks the birth of three major trends in modern architecture: Purism, Brutalism and sculptural architecture. The global influence reached by The Architectural Work of Le Corbusier on four continents is a new phenomenon in the history of architecture and demonstrates its unprecedented impact.
- **Criterion (vi):** The Architectural Work of Le Corbusier is directly and materially associated with ideas of the Modern Movement, of which the theories and works possessed outstanding universal significance in the twentieth century. The series represents a “New Spirit” that reflects a synthesis of architecture, painting and sculpture. The Architectural Work of Le Corbusier materializes the ideas of Le Corbusier that were powerfully relayed by the International Congress of Modern Architecture (CIAM) from 1928. The Architectural Work of Le Corbusier is an outstanding reflection of the attempts of the Modern Movement to invent a new architectural language, to modernize architectural techniques, and to respond to

the social and human needs of modern man. The contribution made by the Architectural Work of Le Corbusier is not merely the result of an exemplary achievement at a given moment, but the outstanding sum of built and written proposals steadfastly disseminated worldwide through half a century.

Brasilia (Brazil)

- Brasilia, a capital created ex nihilo in the centre of the country in 1956, was a landmark in the history of town planning. Urban planner Lucio Costa and architect Oscar Niemeyer intended that every element – from the layout of the residential and administrative districts (often compared to the shape of a bird in flight) to the symmetry of the buildings themselves – should be in harmony with the city’s overall design. The official buildings, in particular, are innovative and imaginative.
- Laid out along a monumental east-west axis, crossed by a north-south axis curved to follow the topography as a transportation thoroughfare, Brasilia is a definitive example of 20th century modernist urbanism... The city’s planning is noteworthy for the remarkable congruence of Lucio Costa’s urban design (the ‘Plano Piloto’) and Oscar Niemeyer’s architectural creations, most powerfully reflected in the intersection between the monumental and thoroughfare axes, which stands as the determining factor of the city’s urban scheme and underscores the representative character of Three Powers Square (Praça dos Três Poderes) and the Esplanade of the Ministries (Esplanada dos Ministérios), also manifest in the geometry of the National Congress and in the new approach to urban living embodied in the Neighborhood Units (Unidade de Vizinhaça) and their corresponding Superblocks (Superquadras).
- **Criterion (i):** Brasilia is a singular artistic achievement, a prime creation of the human genius, representing, on an urban scale, the living expression of the principles and ideals

advanced by the Modernist Movement and effectively embodied in the Tropics through the urban and architectural planning of Lucio Costa and Oscar Niemeyer. The Brazilian experience is notable for the grandiosity of the project, one which not only brought to a definitive close a particular historical epoch, but which was closely tied to an ambitious development strategy and to a process of national self-affirmation before the world

- **Criterion (iv):** Brasilia is a unique example of urban planning brought to fruition in the 20th century, an expression of the urban principles of the Modernist Movement as set out in the 1943 Athens Charter, in Le Corbusier's 1946 treatise *How to Conceive Urbanism*, and in the architectural designs of Oscar Niemeyer, including the buildings of the three powers (Presidential Palace, Supreme Court and Congress with its twin highrise buildings flanked by the cupola of the Senate building and by the inverted one of the House of Representatives), and the Cathedral with its 16 paraboloids 40 metres in height, the Pantheon of Juscelino Kubitschek and the National Theatre.

Pampulha Modern Ensemble (Brazil)

- The Pampulha Modern Ensemble was the centre of a visionary garden city project created in 1940 at Belo Horizonte, the capital of Minas Gerais State. Designed around an artificial lake, this cultural and leisure centre included a casino, a ballroom, the Golf Yacht Club and the São Francisco de Assis church. The buildings were designed by architect Oscar Niemeyer, in collaboration with innovative artists. The Ensemble comprises bold forms that exploit the plastic potential of concrete, while fusing architecture, landscape design, sculpture and painting into a harmonious whole. It reflects the influence of local traditions, the Brazilian climate and natural surroundings on the principles of modern architecture.
- The Ensemble reflects the way principles of modern architecture that had evolved in the first decades of the 20th century were freed from rigid constructivism and adapted organically to reflect local traditions, the Brazilian climate and natural surroundings. Through a dynamic collaboration between various innovative artists in their respective fields of activity, the Ensemble pioneered a contextual approach in which a new fluid modern architectural language was fused with the plastic arts and design, and responded to its landscape context.
- **Criterion (i):** Niemeyer, Burle Marx and Portinari collectively delivered a landscape ensemble that as a whole is an outstanding for the way it manifests a new fluid modern architectural language fused with the plastic arts and design, and one that interacts with its landscape context.
- **Criterion (ii):** The Pampulha Modern Ensemble was linked to reciprocal influences between European and North America and the Latin American periphery and particularly to a poetic reaction to the perceived austerity of modern European architecture. In establishing a synthesis between local regional practices and universal trends, as well as fostering dynamic links between architecture, landscape design and the plastic arts, Pampulha inaugurated a new direction in modern architecture which subsequently was used to assert new national identities in recently independent Latin American countries.²
- **Criterion (iv):** The Pampulha ensemble and its innovative architectural and landscape concepts reflect a particular stage in architectural history in South America, which in turn reflects wider socio-economic changes in society beyond the region. The economic crises of 1929 prompted demands for people to have greater inclusion in nation building.

² Pampulha Modern Ensemble has high level of similarity with RKIF.

These circumstances influenced the design of the new garden city neighbourhood of Belo Horizonte as a place that could reflect creative and cultural 'autonomy' through innovative architectural buildings designed for public use, set in a designed 'natural' landscape, well endowed with public spaces for leisure and exercise.

Royal Exhibition Building and Carlton Gardens (Australia)

- The Royal Exhibition Building and its surrounding Carlton Gardens were designed for the great international exhibitions of 1880 and 1888 in Melbourne. The building and grounds were designed by Joseph Reed. The building is constructed of brick and timber, steel and slate. It combines elements from the Byzantine, Romanesque, Lombardic and Italian Renaissance styles. The property is typical of the international exhibition movement which saw over 50 exhibitions staged between 1851 and 1915 in venues including Paris, New York, Vienna, Calcutta, Kingston (Jamaica) and Santiago (Chile). All shared a common theme and aims: to chart material and moral progress through displays of industry from all nations.
- The Royal Exhibition Building and Carlton Gardens are a surviving manifestation of the international exhibition movement which blossomed in the late 19th and early 20th centuries.³ The exhibition building was constructed as a Great Hall, a permanent building initially intended to house the Melbourne International Exhibition of 1880 and the subsequent 1888 Melbourne Centennial International Exhibition. These were the largest events staged in colonial Australia and helped to introduce the world to Australian industry and technology.
- **Criterion (ii):** The Royal Exhibition Building and the surrounding Carlton Gardens, as the main extant survivors of a Palace of Industry and its setting, together reflect the

global influence of the international exhibition movement of the 19th and early 20th centuries. The movement showcased technological innovation and change, which helped promote a rapid increase in industrialisation and international trade through the exchange of knowledge and ideas.

Le Havre, the City Rebuilt by Auguste Perret (France)

- The city of Le Havre, on the English Channel in Normandy, was severely bombed during the Second World War. The destroyed area was rebuilt according to the plan of a team headed by Auguste Perret, from 1945 to 1964. The site forms the administrative, commercial and cultural centre of Le Havre. Le Havre is exceptional among many reconstructed cities for its unity and integrity. It combines a reflection of the earlier pattern of the town and its extant historic structures with the new ideas of town planning and construction technology. It is an outstanding post-war example of urban planning and architecture based on the unity of methodology and the use of prefabrication, the systematic utilization of a modular grid, and the innovative exploitation of the potential of concrete.
- **Criterion (ii):** The post-war reconstruction plan of Le Havre is an outstanding example and a landmark of the integration of urban planning traditions and a pioneer implementation of modern development in architecture, technology and town planning.
- **Criterion (iv):** Le Havre is an outstanding post-war example of urban planning and architecture, based on the unity of methodology and system of prefabrication, the systematic use of a modular grid and the innovative exploitation of the potential of concrete.

³ Royal Exhibition Building has high level of similarity with RKIF.

Fagus Factory in Alfeld (Germany)

- Fagus Factory in Alfeld is a 10-building complex - began around 1910 to the design of Walter Gropius, which is a landmark in the development of modern architecture and industrial design. Serving all stages of manufacture, storage and dispatch of lasts used by the shoe industry, the complex, which is still operational today, is situated in Alfeld an der Leine in Lower Saxony. With its groundbreaking vast expanses of glass panels and functionalist aesthetics, the complex foreshadowed the work of the Bauhaus school and is a landmark in the development of architecture in Europe and North America.
- **Criterion (ii):** The Fagus factory in Alfeld illustrates a moment of considerable interchange between different generations of German, European and North American architects, which gave rise to a rational and modernist architecture. It was a site of synthesis of these influences, which were technical, artistic and humanistic; it went on to influence many other architectural works; it was the starting point of the Bauhaus movement.
- **Criterion (iv):** A manifesto of modernity in architecture, the Fagus factory won its designer, Walter Gropius, an international reputation. It exemplifies the innovation of the curtain wall, which optimises both luminosity and lightness. It is a concrete expression of the functionality of the industrial complex in the interest of productivity and the humanisation of the working environment. It incorporates into the scheme the concepts of industrial aesthetics and design.

Van Nellefabriek (Netherlands)

- Van Nellefabriek was designed and built in the 1920s on the banks of a canal in the Spaanse Polder industrial zone north-west of Rotterdam. The site is one of the icons of 20th-century industrial architecture, comprising a complex of factories, with façades consisting essentially of steel and glass, making large-scale use of the curtain wall principle. It was conceived as an 'ideal factory', open to the outside world, whose interior working spaces evolved according to need, and in which daylight was used to provide pleasant working conditions. It embodies the new kind of factory that became a symbol of the modernist and functionalist culture of the inter-war period and bears witness to the long commercial and industrial history of the Netherlands in the field of importation and processing of food products from tropical countries, and their industrial processing for marketing in Europe.
- **Criterion (ii):** The Van Nellefabriek brings together and makes use of technical and architectural ideas originating from various parts of Europe and North America in the early 20th century. It is exceptionally successful both in terms of its industrial setup and its degree of architectural and aesthetic accomplishment. It represents an exemplary contribution by the Netherlands to the Modernism of the inter-war years, and has since its construction become an emblematic example and an influential reference throughout the world.
- **Criterion (iv):** In the context of industrial architecture in the first half of the 20th century, the Van Nellefabriek is an outstanding illustration of the values of relationships with the environment, the rational organisation of production flows, and dispatch via the nearby communication network, maximum admission of daylight to the internal spaces via the widespread use of a glass curtain wall with metal frames, and open interior spaces. It expresses the values of clarity, fluidity and the opening up of industry to the outside world.

Centennial Hall in Wrocław (Poland)

- The Centennial Hall, a landmark in the history of reinforced concrete architecture, was erected in 1911-1913 by the architect Max Berg as a multi-purpose recreational building, situated in the Exhibition Grounds. In form it is a symmetrical quatrefoil with a vast circular central space that can seat some 6,000 persons. The 23m-high dome is topped with a lantern in steel and glass. The Centennial Hall is a pioneering work of modern engineering and architecture, which exhibits an important interchange of influences in the early 20th century, becoming a key reference in the later development of reinforced concrete structures.
- The Exhibition Grounds, whose main feature the Centennial Hall, stands at the intersection of its principal axes, constitutes an integral spatial whole. They were designed jointly by Max Berg and Hans Poelzig. On the west side of the Centennial Hall there is a monumental square modelled on the ancient forum, which is preceded by the colonnade (built in 1925) of the main entrance. To the north of the square stands the Pavilion of the Historical and Artistic Exhibition, now known as the Four Domes Pavilion, which was built in 1912-1913 according to a design by Hans Poelzig. In the northern part of the Exhibition Grounds stands a concrete pergola enclosing a pond. It is separated from the Centennial Hall by a building housing a restaurant with an open terrace.
- **Criterion (i):** The Centennial Hall in Wrocław is a creative and innovative example in the development of construction technology in large reinforced concrete structures. The Centennial Hall occupies a key position in the evolution of methods of reinforcement used in architecture, and represents one of the climactic points in the history of the use of metal in structural consolidation.

- **Criterion (ii):** The Centennial Hall is a pioneering work of Modern engineering and architecture, which exhibits an important interchange of influences in the early 20th century, becoming a key reference in the later development of reinforced concrete structures.
- **Criterion (iv):** As part of the Exhibition Grounds of Wrocław, the Centennial Hall is an outstanding example of Modern recreational architecture that served a variety of purposes, ranging from hosting conferences and exhibitions to concerts, theatre and opera.⁴

Central University City Campus of the Universidad Nacional Autónoma de México (UNAM) (Mexico)

- The ensemble of buildings, sports facilities and open spaces of the Central University City Campus of the Universidad Nacional Autónoma de México (UNAM), was built from 1949 to 1952 by more than 60 architects, engineers and artists who were involved in the project. As a result, the campus constitutes a unique example of 20th-century modernism integrating urbanism, architecture, engineering, landscape design and fine arts with references to local traditions, especially to Mexico's pre-Hispanic past. The ensemble embodies social and cultural values of universal significance and is one of the most significant icons of modernity in Latin America.
- **Criterion (ii):** The most important trends of architectural thinking from the 20th century converge in the Central University City Campus of UNAM: modern architecture, historicist regionalism, and plastic integration; the last two of Mexican origin.
- **Criterion (iv):** The Central University City Campus of UNAM is one of the few models around the world where the principles proposed by Modern Architecture and Urbanism were totally applied; the ultimate purpose of which was to offer man a notable improvement in the quality of life.

⁴ Centennial Hall has similarity with RKIF.

Berlin Modernism Housing Estates (Germany)

- The property consists of six housing estates that testify to innovative housing policies from 1910 to 1933, especially during the Weimar Republic, when the city of Berlin was particularly progressive socially, politically and culturally. The property is an outstanding example of the building reform movement that contributed to improving housing and living conditions for people with low incomes through novel approaches to town planning, architecture and garden design. The estates also provide exceptional examples of new urban and architectural typologies, featuring fresh design solutions, as well as technical and aesthetic innovations. Bruno Taut, Martin Wagner and Walter Gropius were among the leading architects of these projects which exercised considerable influence on the development of housing around the world.
- The housing estates reflect, with the highest degree of quality, the combination of urbanism, architecture, garden design and aesthetic research typical of early 20th-century modernism, as well as the application of new hygienic and social standards. Some of the most prominent leading architects of German modernism were involved in the design and construction of the properties; they developed innovative urban, building and flat typologies, technical solutions and aesthetic achievements.
- **Criterion (ii):** The six Berlin housing estates provide an outstanding expression of a broad housing reform movement that made a decisive contribution to improving housing and living conditions in Berlin. Their quality of urban, architectural and garden design, as well as the housing standards developed during the period, served as guidelines for social housing constructed since then, both in and outside Germany.

- **Criterion (iv):** The six Berlin housing estates are exceptional examples of new urban and architectural typologies, designed in the search for improved social living conditions. Fresh design solutions and technical and aesthetic innovations were incorporated by the leading modern architects who participated in their design and construction.

The six properties were selected out of the ensemble of housing estates of the period existing in the city, on the basis of their historical, architectural, artistic and social significance and the fact that, due to their location, they suffered little damage during World War II. Even though minor reconstruction and interior changes were carried out in the post-war period,⁵ restoration works within the framework of the protection law of 1975 and their current state of conservation achieve a high standard of integrity and authenticity.

Tentative World Heritage Sites⁶

The Architectural Works of Alvar Aalto – a Human Dimension to the Modern Movement (Finland)

- The experiments focus on materials - both industrial and natural materials - and architectural spaces, forms and sequences of spaces. The results of the experiments are visible in special architectural typologies and building parts introduced by Aalto.
- **Criterion (ii):** The architectural features and special expressions of the series have been created in close interaction with the international Modern Movement, and they continue to have an impact in modern contemporary architecture. The work includes iconic modernistic buildings, places and sites that have influenced the formation and development of modernism.

⁵ Berlin Modernism Housing Estates has similarity with RKIF.

⁶ The description of the above-mentioned sites is paraphrased from the World Heritage Tentative List, <https://whc.unesco.org/en/tentativelists/> (accessed September 24, 2022).

The attributes include the modernistic architecture of the sites, including buildings, yards immediate surroundings and links to the surrounding nature.

Head Office and Gardens of the Calouste Gulbenkian Foundation (Portugal)

- **1959-69:** the Calouste Gulbenkian Foundation Head Office and Garden complex contributed to the affirmation of modernity in the world, combining various aspects of creativity and innovation of human genius. These values are evident in the architectural creation and landscaping, in the structural concept and technical innovations, in the comfort of the spaces resulting from careful detailing: from the interior design to the integration of artworks.
 - **Criterion (i):** The Calouste Gulbenkian Foundation Head Office and Garden complex [henceforth called the Property] is a masterpiece of human creative genius based on a detailed and ambitious programme bringing together diverse valences in one complex.
 - **Criterion (ii):** It is a synthesis of a diversity of cultures, influences and the great creativity of the 20th century that decisively influenced the creation of cultural facilities regarded as monuments and modern cultural landscapes. It is the expression of an interchange between European and non-European cultural values, including the founder Calouste Gulbenkian's own culture of the "eastern Mediterranean", crossed with "plain Portuguese architecture," in this way bypassing conformation to the International Style. The founder Calouste Sarkis Gulbenkian was a character who represented the confluence of diverse cultural traditions, both in his origin and education and in his subsequent experience of life, and who symbolised a natural link between the cultures of Asia and Europe, the East/ West binomial that was his own nature and which is today almost an imperative of the Foundation's activities: the co-existence of cultures.
 - **Criterion (iv):** The Property represents synthesis of the modernity between constructed landscape and architectural interiors, mega structure, geometric topography, creating a transition between the built landscape and nature, in continuity. An exceptional microcosm, linking the beauty of nature and the work of man, which brought together an efficient team of more than thirty professionals: creators, national and international consultants, specialists in diverse technical subjects, from acoustics to illumination or the physics of construction, from architecture to landscape, from art to design, all committed to the creation of an architectural and landscaped complex that bears witness to social and cultural values of universal importance.
 - **Criterion (vi):** Culture and, in particular, architecture and landscape design were able to anticipate, in the midst of the political system of the dictatorship of the Estado Novo, the cultural modernisation of Portuguese society, signalling with the creation of the Calouste Gulbenkian Foundation Head Office and Garden complex the free and democratic world that would only be realised with the end of the regime in 1974. All the Foundation's activity initiated since then, stimulating international relationships through the support of the of Portuguese scholarship students abroad, from arts to sciences, in the principal world centres of research, undertaking philanthropic activity or promoting art and science, in a register of cultural contemporaneity the like of which was unknown at that time, would soon be mirrored and confirmed in this work offered up to the use of the community. Inside this landscape, a planned environment of natural and artificial topography, of hard and soft modelling, of spaces and forms linked visually and sensorially, the diffusion of culture was understood by the public as a generous and deliberate "offering", thus inverting the secular tradition of cultural values imposed doctrinally.
- Materials and design:** exposed concrete (Brutalism)

Ensemble of Álvaro Siza's Architecture Works in Portugal (Portugal)

- The architectural work of Álvaro Siza Vieira is exceptional and of universal value for an ever-growing number of reasons which overlap in unusual fashion. They make him one of the protagonists of contemporary architecture. His architecture is unmistakable, specific, and incomparable. The integrity and the physical, esthetic, and historical characteristics of his work make it an example of unmatched authenticity and genuineness. The universal and exceptional value of his work is the result of that ensemble of characteristics and qualities.
- **Criterion (i):** The works of ASV considered are masterpieces that have been selected from an extensive collection which encompasses all of his work in Portugal. They cover a period of roughly 50 years, crossing two antagonistic forms of government (dictatorship and the shift to democracy in 1974), and integrate and epitomize the esthetic and philosophical principles of the Modern Movement, from its origin to the development and metamorphoses currently taking place. The singularity of his work also lies in the fact he was able to epitomize and incorporate these esthetic and architectural principles with the traditional Portuguese knowledge of construction (materials and techniques). For these reasons, the work of ASV, represented by this diversified collection of works, is a singular example of the human creative genius. The work of ASV in Portugal has reached a global dimension, making him an international reference among the most important architects worldwide during the whole period in which he has been active. Even today, at the age of 80, ASV continues on his creative path, ever unstoppable and ever surprising.
- **Criterion (ii):** ASV epitomizes, integrates and merges in his work the internationalist influences of the modern movement, with classical tradition, geometrical rigor, traditional architecture and the respect for the location, the landscape, and humanity

as main elements. These human values, clearly identified and recognizable in his work, enlighten the universal dimension of his contribution to progress and to the improvement of architecture and town-planning.

- **Criterion (iv):** The work of ASV, in the way it epitomizes and merges several currents and esthetic principles, along with the traditional component of techniques and knowledge, always with the objective of respecting humanity as a user, and the places as the constructive background, has given a priceless contribution by clarifying the esthetic and architectural symbolic impasse that was created between modernism and post-modernism. In other words, it was created between the historical period of the social and political movements of the early century and the period that started with the Fall of the Berlin Wall and the hegemony of global capitalism.

Los Pozas, Xilitla (Mexico)

- The area is defined by a natural tropical garden that gradually lost its original purpose over time... From 1944 to 1960, this was the site where Edward James and Plutarco Gastélum Esquer, his friend and administrator, chose to assemble hundreds of birdcages and animal pens without any previous planning -in addition to minimal infrastructural works so that they could live on site. Moreover, James housed his enormous collection of orchids there, channeling water from Las Pozas stream to form basins that would allow him to enjoy the current between dams and pools. These edifications were built from scratch via a kind of spontaneous architecture intended to be both functional and aesthetic... Later on, however, between 1960 and 1984, Edward James himself -in keeping with a project that was already surrealist in nature-built a large number of dwellings, as well as the huge, assembled concrete structures that dot the landscape... There are doors that cannot be opened, stairways that lead nowhere,

buttresses that push up against nothing, a library without books, a heterodox movie theater crowned by two gigantic columns, beams that sustain no weight but still traverse the flagstones in the most chaotic way imaginable, reclining like enormous serpents and holding only a single flowerpot on top.

- **Criterion (i):** The architecture raised by Edward James at Las Pozas must be considered surrealist; it is representative of said movement due to its creator's antecedents, its heterodoxy, and its obvious appeal to dreams and the subconscious.
- **Criterion (iii):** For years, Edward James encouraged collaboration from his workers. He came from the kind of experience where he had sponsored and provided incentive for creators like Nicholson, Casson, and Dalí. However, at Las Pozas, his interlocutors and the recipients of his generosity were local masons, carpenters, and blacksmiths. He dialogued with them, he proposed ideas, and he paid them for their work. The masons themselves, upon executing said work, enriched it with their personal interpretations and contributions.

National Schools of Art, Cubanacán (Cuba)

- The set of buildings conforming the National Schools of Art, created in 1962, constitutes one of the most outstanding examples of contemporary Cuban architecture, with an acknowledged artistic value, reuniting testimonial values stemming from the historic moment in which it was built to serve as a training school for artists. Some of the graduates form part of the history of contemporary Cuban art and the schools constitute a well-acknowledged set of Cuban architecture at an international level.
- **Criteria (i), (ii), (iii), (iv) and (v)**

Palais de la Culture, ancien siege du Ministere de l'Education et de le Santé, Rio de Janeiro (Brazil)

- This edifice, built between 1937 and 1945, was designed by a team of architects according to the original plans by Le Corbusier. The team consisted of L.Costa, O.Niemeyer, A.E.Reidy, C.Leao, J.M.Moreira and E.Vasconcellos. The gardens were designed by B.Marx, and the glazed tiles of the facade as well as the mural paintings decorating the interior are by C.Portinari. This building was the first deliberate attempt at modern Brazilian architecture and had a decisive influence on all subsequent major developments in architecture in Brazil.
- **Criteria (i), (ii) and (iv)**

The architectural legacy of Rogelio Salmona: an ethical, political, social and poetic manifesto (Colombia)

- The work of Rogelio Salmona (Paris, France 1927 – Bogotá, Colombia 2007) reflects the spirit of a man with an unwavering ethical position and a strong social and political commitment, all of which is expressed in an architecture of high technical, aesthetic and poetic standards. His incessant pursuit was to promote an open city, starting with the defense of human rights and the creation of public places for diverse encounters. Even in its most abstract aspects, his architecture is in deep communion and understanding of the place. Both memory and territory, as well as the urban landscape and the natural environment, are essential references in his work.
- The oeuvre of Rogelio Salmona presented real solutions to fundamental problems of society, the city, and architecture; he supported his premises with civil and democratic argumentations, always pursuing the welfare and enrichment of citizen life. Rogelio Salmona's work is an exceptional contribution to the heritage of the world and the development of architecture due to its urban approaches, its compositional principles, and the technical procedures he implemented.

- Various traditions and schools that have had a significant impact on numerous generations of architects also converge in his work.
- Rogelio Salmona began his architectural studies at the Universidad Nacional de Colombia in 1945. In 1948 he traveled to Paris, where he worked with Le Corbusier in the atelier 35, rue de Sèvres, (1948-1957). At the same time, he studied Sociology of Art and Architecture at the École Pratique des Hautes Études at La Sorbonne, under the tutelage of Pierre Francastel (1900-1970). In addition to his professional experience with Le Corbusier and the academic experience with Francastel, Jean Cassou (1897-1986) and the Conservatoire national des arts et métiers, the architect undertook a series of trips to the south of France, Spain, North Africa and Greece to complement his training. In 1958 he returned to Colombia, where he practiced architecture for more than 50 years. From over 160 projects designed by Salmona, 73 were built.
- **Criterion (ii):** The architectural work of Rogelio Salmona produces an exchange of cultural values which seeks to integrate the city and create collective spaces. It expresses a profound recognition of the natural and urban landscape and promotes the transformation rather than the modification of the place.

His work produces an exchange of values around the conception of the public space. It contributes to the thought of an open and democratic city. It is a heritage asset that represents history and collective memory and reflects the pursuit of a more plural and equitable society. It fulfills the role of communicating the cultural values of an era. There is a permanent attitude of social commitment within the framework of constant principles that are rooted in the 20th century and projected into the 21st century. It is worth noting that Rogelio Salmona did not limit himself to a single school of thought: he defined and strengthened a political,

ethical and poetic position on architecture and visualized the socio-cultural conditions of Latin America based on an understanding of the world.

Interpreting a historical urban landscape with architecture is exceptional. It is not a matter of correctly respecting the determinations of the climate and the context, but of something much more ambitious, it is about translating into sensory spaces an understanding of the world and identifying with the geographical destiny of the place and the land inhabited. That is why the architectural works of Salmona highlighted here constitute a profound cultural identity with which Colombia enriches the world heritage.

- **Criterion (iv):** The work of Rogelio Salmona witnesses a specific time and society. It offers a new perspective on how to conceive collective and family housing, public and institutional buildings and their relationship with the urban environment. This reconciles and enriches Western traditions with those of the Mesoamerican world, a process of his own personal experimentation that established a material, formal and expressive language. The same territory recreated in multiple landscapes. A way of translating spaces, with all their historical and emotional burden, to convey it into a language of its own that articulates with them, in a historical urban landscape. Rogelio Salmona deeply appreciated thorough work that is part of a tradition: the “know-how” was for him a “know-how to create” and a “know-how to think”. According to Salmona work and thought were the same scenario where the city and the citizens converged. The architect and society ahead of all circumstantial and aesthetic connotations.

University City of Bogotá (Colombia)

- The Ciudad Universitaria - University City of Bogotá is currently located in the central area of Colombia's capital, but by 1936 - when it was created - the land upon which it was erected corresponded on the western

side of the small city, which had seen until then a linear development between north and south. For this reason, the appearance of the University City was an opportunity for urban expansion on the west, giving way to new roads and developments...

The general scheme of the University City is a result of various projects and proposals developed after 1936 by teacher Fritz Karsen, and architect Leopoldo Rother...

This architectural complex has had the following declared as National Cultural Heritage: Alfonso Lopez Stadium (1937. Architect: Leopoldo Rother), Faculty of Engineering (1940. Architect: Leopoldo Rother and Bruno Violi), Materials Testing Laboratory (1940. Architect: Leopoldo Rother), Faculty of Architecture (1940. Architects: Erich Lange and Ernst Blumenthal), School of Law (1938. Architect: Alberto Wills Ferro), houses for teachers (1939. Architect: Leopoldo Rother), Botanical Institute (1937. Architect: Eric Lange), 26th Street Entrance (1939. Architect: Leopoldo Rother), 45th Street Entrance (1939. Architect Leopoldo Rother), National Chemical Laboratory (1941. Architect: Leopoldo Rother) and the set of buildings of the School of Veterinary Medicine (1938. Architect: Erich Lange and Ernst Blumenthal).

Besides being an outstanding urban and architectural group within the Latin American context, the University City of Bogotá is an area of great environmental value, as it is near the main green area of the city, configured by the Simon Bolivar Metropolitan Park.

- **Criterion (i):** The University City represents the pinnacle of the development of educational architecture of the 30's in Colombia and Latin America, with the first occurrence in this region of the concept of "Campus" and the introduction of modern language and aesthetics in its buildings.
- **Criterion (iv):** Its urban layout exhibits unique characteristics and served as a reference to other "Campuses" such as

those of the National Autonomous University of Mexico and the University City of Caracas, as well as educational projects in Guatemala, Costa Rica, Peru and Ecuador.

University of Tehran (Iran)

- Tehran University is the first center for higher education in Iran that was founded in 1934... French higher education institutions were taken as models for Tehran University by Iranian, French, Russian and Armenian architects... This university is a model for other universities in Iran and has had a significant role in formation and development of Tehran city. The oldest building of Tehran University is Soleymanieh Palace in Karaj which has been built in early Qajar era and enjoys from outstanding painting decorations. Tehran University is the outcome of several generations of Iranian and international architects that is, in this regard, of outstanding values in comparison to other similar cases all around the world. Its buildings indicate three significant stages of Persian architecture: 1. Traditional stage; 2. Transition stage; 3. Modern stage. These stages of Persian architecture display an outstanding collection of modern architecture which is a mixture of Persian and European styles in case of plans, facades and construction details.
- **Criterion (ii):** Considering economic, social and cultural evolutions in Iran after the Qajar era, the architectural style of Tehran University was inspired from the European architecture and is known as the Systematic Architecture of Pahlavi I era in Iran that is combined with ideas of Modern movements in architecture. Opening of Tehran University coincided with the acquaintance of Iranian with the West which made this university as the main hub for connections with the western civilization and new sciences.
- **Criterion (vi):** The general layout of Tehran University and its architecture is a combination of western architecture with the Persian traditional architecture which illustrates a special style. Emergence of

modern architecture in Iran which also reflects Iranian traditional architecture proves the high knowledge of architects and constructors of the university e.g. concrete, one of the most prominent elements of modern architecture, was widely used in construction of the buildings while at the same time, one of the most prominent elements of the Iranian traditional architecture, lancet arch, has also used in façade.

Serial Nomination of Tehran's Modern Architectural Heritage (Iran)

- Development in the historical structure of the Iranian architecture has begun from the second half of the 19th century and contemporaneous with establishment of Dar al-Fonun College which was the first training center for new sciences in Iran since 1851. At the outset of this development, there was a tendency toward the European architecture and employment of some elements of the Neo-classicism. But the early decades of the 20th century and contemporaneous with the end of the Qajarid dynasty and beginning of the Pahlavids, modernization was precipitated. Along with the elites' and individuals' interests, new centralist and bureaucratic government made this choice of development. The very crystal clear instances of such development are urban changes and architectural properties for example contemporaneous establishment of a large number of public buildings such as schools, universities, industrial factories, state buildings and ministries. In this way, a number of architects who were familiar with architectural changes of the 19th and 20th centuries in Europe found job opportunities. This group of architects consisted of a number of Iranian and several foreign architects who were the pioneers of such changes. Finally, in 1940, they established the first architecture college in Iran.
- Establishment of the said college coincided with the zenith of the Modernistic architecture all around the world. Consequently, graduates of the Architecture College were in concert with the universal Modernist movement that was anti-history and had tendencies toward globalization. Accordingly, Modern architecture overshadowed all constructions in Iran and within three decades (from 1940 to 1970) Modernist architecture as an international architectural style prevailed all over Iran...
- **Criterion (ii):** Impression of the Modern International architectural style on the Iranian architecture constitutes a period of sixty years (1920-1980) that is gradually blended with the Iranian architects' ideas and accordingly, this architectural tradition became widespread in the capital, Tehran, and later it developed in other cities of Iran. It led in a new school in the Iranian architecture.
- **Criterion (iii):** Employment of new materials with modern technology that were accompanied by ingenuity in architecture for construction of new spaces for new functions which were blended with diverse concepts of the Iranian architecture from 1920 to 1980 prove the accessibility of the Iranian architects to the new. They discarded the past and verged of modern technology and industry instead of re-use of historical forms.
- **Criterion (iv):** A style blend resulted by combination and impressionability that led in a prominent architectural style which resulted in a mixture of the Iranian architecture with the Modern International Style that incorporated a cultural approach and insisted on the continuity of the Iranian. This style encircles four distinct periods:
 1. Pre-Modern Style (A modern plan and facades with the Iranian classical architecture);
 2. Early Modern Style (Art Deco in Iran);
 3. Modern Style (in concert with the Modern International Style);
 4. Late Modern Style (within the frame of Modern style along with signs of vernacular culture and background).

Appendix 4.

RKIF: Comparative Analysis Tables

✓	≈	
OK - Good	Adequate - Can be improved	Similarity with RKIF

WH List	Property	Criterion i	Criterion ii	Criterion iii	Criterion iv	Criterion v	Criterion vi	Authenticity
Lebanon	Rachid Karami International Fair- Tripoli		✓		✓			✓

Similar Sites on the World Heritage List

Venezuela	Ciudad Universitaria de Caracas	✓			✓			✓
Multi	The Architectural Work of Le Corbusier	✓	✓				✓	✓
Brazil	Brasilia	✓			✓			✓
Brazil	Pampulha Modern Ensemble	✓	✓		✓			✓
Australia	Royal Exhibition Building and Carlton Gardens		✓					✓
France	Le Havre ,the City Rebuilt by Auguste Perret		✓		✓			✓
Germany	Fagus Factory in Alfeld		✓		✓			✓
Netherlands	Van Nellefabriak		✓		✓			✓
Poland	Centennial Hall in Wroclaw	✓	✓		✓			✓
Mexico	Central University City Campus of the Universidad Autónoma de México(UNAM)		✓		✓			✓
Germany	Berlin Modernism Housing Estates		✓		✓			✓

Integrity	Commerce &Industry	Increased Globalization	Functional Demands	Campus Typology	Exposed Concrete	Mid- Century Modernism	Mid- Century Middle East	National Identity	Technology/ Innovation
≈	√	√	√	√	√	√	√	√	√
√			√	√	√	√			√
√		√	√	√	√	√		√	√
√		√	√	√	√	√		√	√
√		√	√	√	√	√		√	√
√	√	√	√	√				√	
√			√	√	√	√			√
√	√	√	√	√	√				√
√	√	√	√	√					√
√	√	√	√	√	√			√	√
√			√	√	√	√			
√		√	√	√	√				√

Similar Sites on the World Heritage Tentative List

Tentative List	Property	Criterion i	Criterion ii	Criterion iii	Criterion iv	Criterion v	Criterion vi	Authenticity
Finland	The Architectural Works of Alvar Aalto		√					
Portugal	Head Office and Gardens of the Calouste Gulbenkian Foundation	√	√		√		√	√
Portugal	Ensemble of Álvaro Siza's Architecture Works in Portugal	√	√		√			√
Mexico	Los Pozos ,Xilitla	√		√				√
Cuba	National Schools of Art ,Cubanacán	√	√	√	√	√		√
Brazil	Palais de la Culture, ancien siege de Ministere de l'Education et de le Santé ,Rio de Janeiro	√	√		√			√
Colombia	The architectural legacy of Rogelio Salmona :an ethical ,political, social and poetic manifesto		√		√			√
Colombia	University City of Bogotá	√			√			√
Iran	University of Tehran		√			√		√
Iran	Serial Nomination of Tehran's Modern Architectural Heritage		√	√	√			√

Integrity	Commerce &Industry	Increased Globalization	Functional Demands	Campus Typology	Exposed Concrete	Mid- Century Modernism	Mid- Century Middle East	National Identity	Technology/ Innovation
		✓	✓		✓	✓		✓	
≈		✓	✓	✓	✓	✓		✓	✓
✓		✓	✓	✓	✓	✓		✓	
✓			✓	✓	✓	✓			
✓			✓	✓	✓	✓			
✓									
✓		✓	✓	✓	✓	✓		✓	✓
✓			✓	✓	✓	✓			✓
✓			✓	✓	✓	✓		✓	
✓			✓	✓	✓	✓	✓	✓	
✓	✓	✓	✓		✓	✓	✓	✓	

Protected Niemeyer's Buildings on the National List in Brazil

Country	Property	Program	Authenticity	Integrity	Commerce& Industry
Brazil	Centro Tecnológico da Aeronáutica	Housing ,Training Center	✓	✓	✓
Brazil	Museu Oscar Niemeyer	Museum	✓	✓	
Brazil	Museu de Arte Contemporânea de Niterói	Museum	✓	✓	
Brazil	Praça do Caminho Niemeyer	Park ,Museums, Exhibition Spaces	✓	✓	✓
Brazil	Parque do Ibirapuera	Park ,Museums, Exhibition Spaces	✓	✓	✓
Brazil	Memorial da América Latina	Park ,Museums, Exhibition Spaces	✓	✓	✓
Brazil	Passarela do Samba	Public School, Event Space	✓	✓	✓
Brazil	Casa das Canoas	Single Family House	✓	✓	
Brazil	Primeira residência do arquiteto Oscar Niemeyer	Single Family House	✓	✓	

Similar Niemeyer Complexes in the MENA Region

Country	Property	Program	Authenticity	Integrity	Commerce& Industry
Algeria	University of Algiers Faculty of Science and Technology Houari Boumediene and Faculty of Human Sciences	Education	✓		
UAE	Leisure Island in Abu Dhabi	Mixed Use	✓		

Increased Globalization	Functional Demands	Campus Typology	Exposed Concrete	Mid-Century Modernism	Mid-Century Middle East	National Identity	Technology/ Innovation
✓	✓	✓	✓				✓
	✓		✓	✓			✓
	✓		✓	✓		✓	✓
✓	✓	✓	✓			✓	✓
✓	✓	✓	✓	✓		✓	✓
✓	✓	✓	✓			✓	✓
✓	✓		✓			✓	✓
✓	✓		✓	✓			✓
	✓		✓	✓			✓

Increased Globalization	Functional Demands	Campus Typology	Exposed Concrete	Mid-Century Modernism	Mid-Century Middle East	National Identity	Technology/ Innovation
✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓

Similar Modernist Complexes in the MENA Region

MENA Region	Property	Program	Authenticity	Integrity	Commerce & Industry
Iraq	University of Baghdad	Education	✓	✓	
Lebanon	Collège Protestant Français de Jeunes Filles	Education	✓	✓	
Saudi Arabia	King Saud University Al Gassim Campus	Government	✓	✓	
Saudi Arabia	Royal Palace for H.R.M .the King	Government	✓	✓	
Iraq	Monument to the Unknown Soldier	Monument	✓	✓	
Lebanon	Starco Center	Mixed Use	✓	✓	✓
Lebanon	Gefinor Center	Mixed Use	✓	✓	✓
Lebanon	Ministry of Defense	Government	✓	✓	
Lebanon	Beirut City Center	Mixed Use	✓		

Similar International Fairs in the MENA Region

International Fairs - MENA	Property	Program	Authenticity	Integrity	Commerce & Industry
Syria	Damascus International Fair	Exhibition	✓		✓
Iran	Tehran International Permanent Fairground	Exhibition			✓
Turkey	Izmir International Fair	Exhibition			✓
Iraq	Baghdad International Exhibition	Exhibition			✓

Increased Globalization	Functional Demands	Campus Typology	Exposed Concrete	Mid-Century Modernism	Mid-Century Middle East	National Identity	Technology/ Innovation
√	√	√	√	√	√	√	√
√	√	√	√	√	√	√	√
√	√	√	√			√	√
√	√	√	√			√	√
√	√		√			√	√
√	√	√		√	√	√	√
√	√	√		√	√	√	√
√	√	√	√	√	√	√	√
√	√	√		√	√	√	√

Increased Globalization	Functional Demands	Campus Typology	Exposed Concrete	Mid-Century Modernism	Mid-Century Middle East	National Identity	Technology/ Innovation
√	√	√		√	√	√	√
√	√	√				√	√
√	√	√				√	√
√	√	√				√	√

Appendix 5.

Biographies of Main CMP Contributors

Farès el-Dahdah is the Mamdouha El-Sayed Bobst Dean of the Faculty of Arts and Sciences at the American University of Beirut. He previously held professorships in art history and architecture at Rice University where he also led the Humanities Research Center and was the recipient of grants from such philanthropic agencies as the Mellon Foundation, the National Endowment for the Humanities, the American Council of Learned Societies, and Getty. In recent years, data science and digital art history have increasingly become central to his research and so has the creation of online geospatial platforms in the areas of cultural heritage, public health, social justice, disaster response, and climate change. He has lectured and written extensively on Brazil's modern architecture and has collaborated on several projects with the Oscar Niemeyer Foundation, on the Board of which he serves.

Mazen Haidar holds an MPhil in Architectural Conservation from the University of Rome Sapienza and a PhD in Architecture from Université Paris 1 Pantheon-Sorbonne with "The reception and appropriation practices of Modern Architecture in Beirut" as a subject. As a practicing architect, he led and participated in different conservation projects in the MENA Region and Sub-Saharan Africa. He has taught since 2011 at various Lebanese and French academic institutions such as the American University of Beirut and the École nationale supérieure d'architecture de Paris Belleville. He is currently Associate Professor at the École nationale supérieure d'architecture de Paris Malaquais. Included among his publications are *Città e memoria*, Beirut, Berlino, Sarajevo (Bruno Mondadori, 2006) and *La ferronnerie architecturale à Beyrouth au XX^e siècle* (Éditions Geuthner, 2021).

Paul Gaudette, FACI, FAPT is a Principal with Wiss, Janney, Elstner Associates, Inc., an international architectural, engineering, and materials science firm based in the US. He has been with the firm for more than 40 years, specializing in investigation, repair, and preservation of archaic and modern concrete heritage structures in the US and Europe. He is former Chair of ACI 546 Repair of Concrete, Co-Chair of the APT Technical Committee on Materials, and an expert member of the ICOMOS International Scientific Committee on 20th-Century Heritage (ISC20C).

Maya Hmeidan is a cultural heritage consultant with over 12 years of experience in heritage site management. She holds a master's degree in archaeology from the Lebanese University and another master's degree in heritage management from Leicester University in the UK. She has worked extensively with the Lebanese Ministry of Culture, reporting on the State of Conservation of Tyre World Heritage Site to UNESCO's World Heritage Centre, and coordinated the development of a Heritage Management Plan Framework for Tyre on its behalf. Maya has also coordinated and contributed to several heritage projects initiated by UNESCO's Beirut Office. She also organized several capacity-building workshops and heritage awareness activities. She is a member of ICOMOS Lebanon.

Pamela Jerome, FAIA, LEED AP, FAPT, F.ICOMOS-USA is a preservation architect with 43 years of experience. She is President of Architectural Preservation Studio, DPC, a New York City-based architecture and preservation firm. She was an Adjunct Associate Professor of Historic Preservation at Columbia University's GSAPP where she taught from 1995-2017. Pamela is an expert member of the ICOMOS

International Scientific Committee on 20th-Century Heritage (ISC20C). She was an elected officer of the ICOMOS Scientific Council from 2006-2015 and served on the international Board from 2014-2023, her last three-year term as Treasurer. She is ICOMOS-USA's liaison to the APT (Association for Preservation Technology International) Board and a Fellow of APT, ICOMOS-USA, and the American Institute of Architects. Her expertise is in masonry conservation and waterproofing. She has consulted on cultural property conservation in the US, Mediterranean, Black Sea, Middle East, and Far East.

Jala Makhzoumi is co-founder of UNIT44 Consultancies, acting president of the International Federation of Landscape Architects (IFLA) - Middle East Region, and adjunct professor of landscape architecture at the American University of Beirut. Jala pioneers holistic ecological design and planning that mediates community well-being, environmental health, and heritage conservation. Her practice spans 40 years, where she contributed to master plans for Damascus, Baghdad, and Al-Ain, urban greening projects in Saida, Erbil, and Basra, as well as heritage conservation projects in Beirut and Mosul. Jala is recipient of the European Council of Landscape Architecture Schools, Lifetime Achievement Award - 2019, and the IFLA Sir Geoffrey Jellicoe Award, 2021, for her outstanding contribution to landscape architecture, education, and practice.

Kyle Normandin, FAIC, FAPT is a Principal at Wiss, Janney, Elstner Associates, Inc. in New York City where he has over 25 years of experience in historic preservation. He is also an Adjunct Associate Professor at Columbia GSAPP where he also received his MSc in Historic Preservation. He holds a Bachelor of Arts in

Architecture from the College of Environmental Design at the University of California at Berkeley. Kyle was formerly a Senior Project Specialist at the Getty Conservation Institute where he worked under the Conserving Modern Architecture Initiative. Kyle is on the bureau of the ICOMOS International Scientific Committee on 20th-Century Heritage (ISC20C). He is also a member of the Association for Preservation Technology College of Fellows and a Fellow of the American Institute of Conservation.

Mousbah Rajab is an architect, urban planner, and consultant on urban development projects. He is also a lecturer at the Lebanese Academy of Fine Arts – University of Balamand. Mousbah was a professor of architecture and urban planning at the Lebanese University between 1993 and 2023. He worked with the Municipality of Tripoli through cooperation projects with Mediterranean cities on conservation of the Historic City of Tripoli, and other cultural heritage issues. He had many other professional experiences in Lebanon related to cultural heritage, local development, strategic planning and sustainable development for the World Bank, AFD, UNESCO, UN-Habitat, and Union of Municipalities. Mousbah has written and published several scientific contributions based on his professional experiences related to urban cultural heritage, development, and governance in Tripoli in particular.

Appendix 6.

RACHID KARAMI INTERNATIONAL FAIR (RKIF)

Landscape Vegetation Survey, Mapping, and Analysis

Final Narrative Report, 15 May 2023



Hana Itani
Landscape Architect

existing site vegetation (RKIF's softscape)
and recommendations for the RKIF's

The landscape survey aimed to gather information and insights about the softscape cover of RKIF. The landscape survey provides valuable information about the historical understanding of the land, the numbers and age of plants, the varieties of plants present, and the overall condition of the vegetation. There were several challenges and limitations when conducting the landscape survey, and some of these include:

1. **Absence of a proper accurate AutoCAD map:** This made it difficult to accurately record and map the location and distribution of different vegetation types, which made the results prone to error.

2. **The absence of tools:** Without tools, equipment, and personnel, it was necessary to rely on manual measurements and estimates, which were time-consuming and prone to error.

3. **Weather:** Heavy rain shortened the days of the survey. Surveying cold weather made it hard to identify some dormant tree species.

4. **Limited time and site complexity:** The site is large and complex, with more than 90 plant species, the landscape survey was time-consuming, and it was challenging to gather all the necessary data within the limited timeframe.



1. BACKGROUND

The first attempt to introduce plants, the softscape, was in 1997.

“Currently, the flat site is covered by low scrub and indigenous ground cover. The flatness of the site and the poor quality and permeability of the soil have come to reflect on the scale and variety of vegetation generated after years of abandonment. On the southwest corner of the site, there are two stands of palm trees. These palms are mature and in relatively good condition; therefore, they can be successfully incorporated in future site developments.”¹

At the time, RKIF’s landscape was limited to the hardscape (walkways and reflecting pools) until the eruption of the Lebanese Civil War in 1975. Archival photographs, however, show some palms on site, that were removed or transplanted

to other locations. In addition to date palms on the western edge of the site that still exist on location till our days. Apart from those date palms, there’s no presence of other woody plants, trees, and shrubs.

BECA, a Tripoli-based consultancy, was commissioned with a softscape design in 1996. The design as executed by Daisy Contracting in 1997 embraced a variety of plants in the Cultural and Recreational zone of RKIF, the Collective Housing, and the Western Parking. At a later stage in 2009, two new gardens were added, a northeastern garden and a southeastern garden.

The Southern Parking was implemented in 1974, but it was not planted before 2012.



- a) 1970: After site clearance for construction few palm trees remained in the western part
- b) 1997: Planting the Cultural and Recreational Sector, the Rest Sector and the Eastern Car Park
- c) 2000: Planting the Quality Inn Garden
- d) 2009: Planting the Northeastern and Southeastern Gardens
- e) 2013: Planting the Southern Car Park

Source: (a) Aerial photo, Lebanese Army Forces - Directorate of Geographic Affairs*; (b-e) Adapted from Google Earth.



Cover of BECA tender documents, 1996.

Courtesy of RKIF Archives.

¹ Dar Al-Handasah Shair and Partners, “The Rachid Karami International Fair Complex,” Tender documents Volume III, (January 1995), 16.

1.1 Methodology

Due to the time limitation of the study, the detailed mapping focused on RKIF's softscape of the core zone – The Cultural and Recreational Sector - as agreed with the project team, in addition to recording the general observations concerning the abandoned landscape at the western and southern side of the site (Seaward Landscape). Consequently, an area of approximately 210,000 m² was surveyed in four days and mapped on an AutoCAD plan shortly after.

It is crucial to mention that the absence of a comprehensive and reliable topographic survey of the site and the existing vegetation posed a challenge. Furthermore, the discrepancy among the several available AutoCAD versions that were provided by UNESCO through the RKIF's Administration posed an additional challenge. Consequently, verification of the most accurate map was necessary, then finding the most appropriate method to survey and document the site's existing vegetation with the best available means, focusing our efforts on responding to the CMP requirements and the provision of needed data to inform the CMP policies and future management of the Landscape.

The final database (Microsoft Excel) for existing vegetation and the spatial configuration (AutoCAD) of this vegetation were prepared through the following documentation and steps:

- Accurate aerial images supplied by UNESCO, which were printed in sections to use on-site.
- Google Earth maps
- On-site observation and verification of species, maturity, and condition
- Photos to verify notes
- Notes and sketches from the on-site survey were collated and added into AutoCAD in layers to facilitate analysis.
- Preparation of an Excel sheet that focused on the vegetation of the core area (Cultural and Recreational Sector) of RKIF.

The site was divided into 5 main character areas. The survey and recording started from the main entrance area (Rest Sector) and ended with the Collective Housing (current Quality Inn hotel area). Using Google Earth maps, the names of the plants were marked, adding any important note about their condition and estimated age. The landscape of the 'Cultural and Recreational Sector' of the Fair, which extends between the eastern edge of the Grand Cover to the eastern boundary fence, the main entrance to the south, and the Quality Inn to the north, is the largest area surveyed with a high concentration of trees and shrubs.

Because of the limited time allocated to the landscape component of the CMP study, the focus was on this core area of the site. Vegetation in the peripheral landscapes, eastern and southern car parks, were generally assessed and included in the Excel Database (available at the end of this report - Annex A).

During the four days of site work, the use of the open spaces was documented, in addition to the recording of the existing plant species, their approximate size, their average age, and their general condition.



RKIF planted
landscape survey,
2023.

1.2 General Findings

Below are the findings mapped on AutoCAD. A soft copy of this AutoCAD drawing was submitted along with this report.

The following are key findings from the analysis of the survey data:

1.2.1 Plants varieties

There are more than 90 different plant species on site.

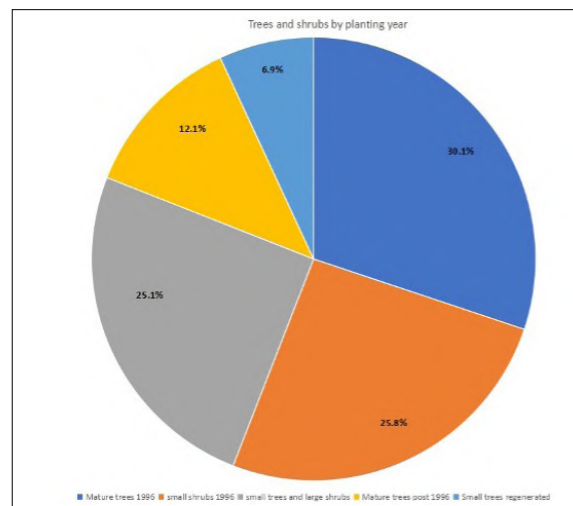
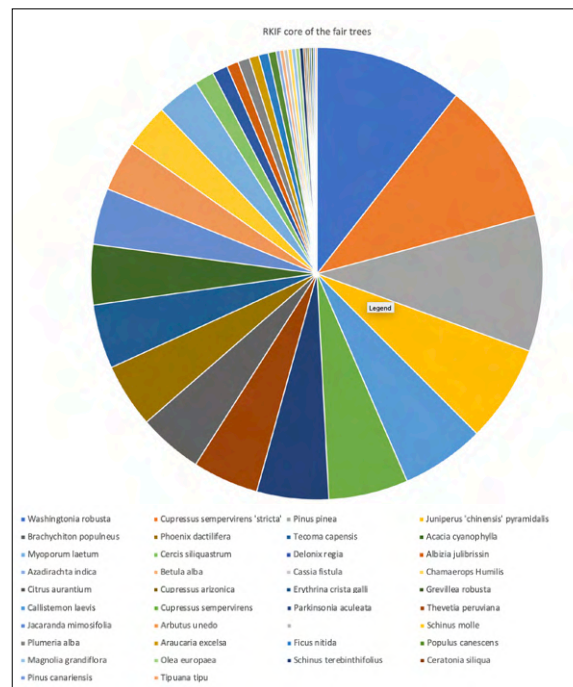
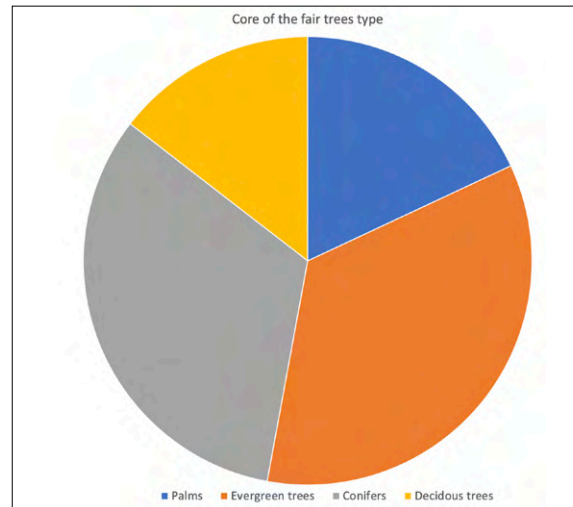
- 1847 woody plant in the core area
- 40% of the plants are trees (38 species) and 60% are shrubs (20 species) in the core area.
- 34.8% of the trees are evergreen (*Acacia cyanophylla*, *Thevetia peruviana*, *Schinus mole*...) 32.5% are conifers (*Pinus pinea*, *Cupressus sempervirens*...), 18.2% are palms (*Phoenix dactylifera*, *Washingtonia robusta*...), 14.5% are deciduous trees (*Jacaranda mimosifolia*, *Parkinsonia aculeata*, *Delonix regia*...)

The plants on site are mixed, evergreen, conifers, deciduous, fruit trees, and palms. There are also cacti, herbaceous, climbers, and ground cover. There are native plants, some exotic, others invasive.

Plants are planted in rows (*Pinus pinea*, *Washingtonia robusta*), in clusters (*Washingtonia robusta*, *Pittosporum tobira*), and randomly (*Schinus mole*, *Acacia cyanophylla*). There are many specimen trees (*Jacaranda mimosifolia*, *Cercis siliquastrum*).

1.2.2 Plants age

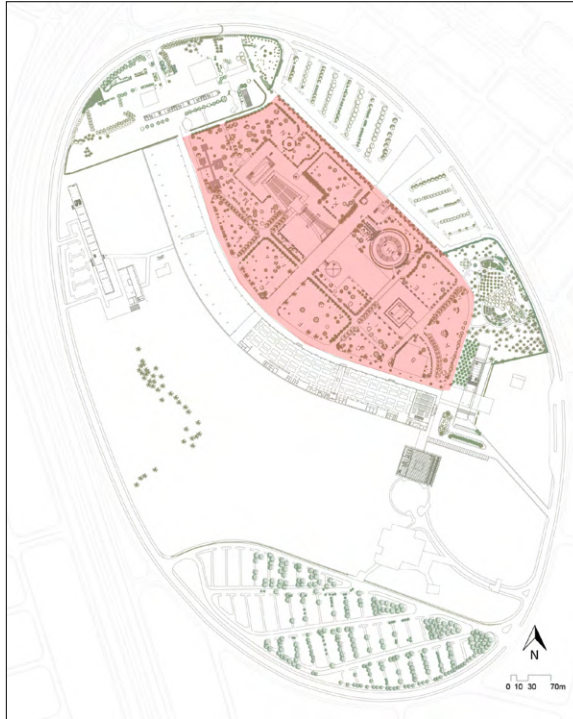
As mentioned above, plants (including trees and shrubs) were introduced to the site in 1996 -1997, and later, many new trees were introduced consecutively, in all RKIF zones. Some were added recently, others regenerated spontaneously.



2. SITE ANALYSIS

The site is divided into 5 landscape character zones, each having its characteristics:

1. Cultural and Recreational Sector



2. Rest Sector



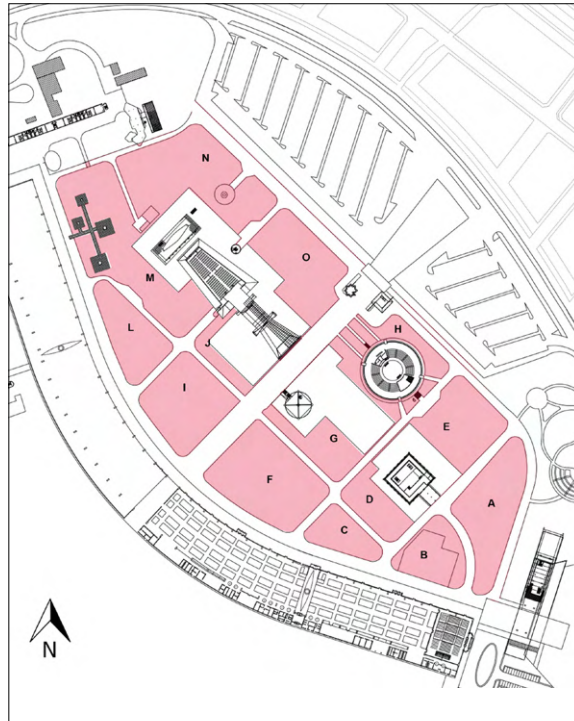
3. Gardens



4. Vegetated Car Parks



5. Seaward Landscape



Zoning of the Cultural and Recreational Sector according to the survey.

2.1 The Cultural and Recreational Sector - RKIF's Core Area

To better understand the space, this area was divided into 14 zones.

Some observations concerning the use of space:

- The space is used by the local community based on prior permission for access to exercise and walk. People walk, talk, run and jog.
- The area is mainly used by upper-class communities, who are allowed to park their cars inside the Fair, near the Grand Cover, or in the Main Entrance Plaza.
- Although dogs are not allowed, walking the dogs is the main activity that takes place inside.
- Some users sit under the trees, *Acacia cyanophylla* is mostly used by users as a shelter tree.
- Some spaces inside are used as open gathering spaces for certain sponsored events.

There's no definite pattern in planting, the peripheries of the spaces are planted with Pine trees, Washingtonia palms, or Cupressus trees, with Nerium or hibiscus as an understory.

The centers of the spaces have scattered trees also varying from big trees to medium shrubs (ex. *Cercis siliquastrum*, *Myoporum laetum*).

The rest of the area is characterized by naturally grown groundcover (such as *Oxalis*) that is green in the cool moist season and turns yellow in the hot dry season.

- **The main tree species:** *Washingtonia robusta*, *Phoenix dactylifera*, *Acia cyanophylla*, *Jacaranda mimosifolia*, *Cercis siliquastrum*, *Parkinsonia aculeata*, *Pinus pinea* ...
- **The main shrub species:** *Hibiscus rosa sinensis*, *Nerium oleander*, *Lanтана camara*, *Juniperus chinensis pfitzeriana*, *Pyracantha conccinea*...

The Cultural and Recreational Sector is characterized by a high variety of trees and shrubs, mainly planted in 1997, some plants were introduced later to the site to replace dead trees.



2023 Cupressus sempervirens stricta trees (above) replace the 2003 Betula alba trees (below).

© Jala Makhzoumi, 2003

Other plant species were added over the years such as *Delonix regia*, *Ficus nitida*, *Myoporum laetum*, *Cupressus sempervirens*...

Plants grew naturally over the years, such as *Acacia cyanophylla*, *Nerium oleander*, *Lantana camara*, *Washingtonia robusta*, *Jacaranda mimosifolia*, *Parkinsonia aculeata*... Some plants are now mature, others are small (less than 2 m long).

Betula alba around the Open-Air Theater was replaced with *Cupressus sempervirens 'stricta'* and *Juniperus 'chinensis' pyramidalis*, replacing deciduous trees with evergreen conifers.



Trees regenerating naturally over the years.



Propagating Roses by inserting Rose sticks into the soil, with drip irrigation for new plants.

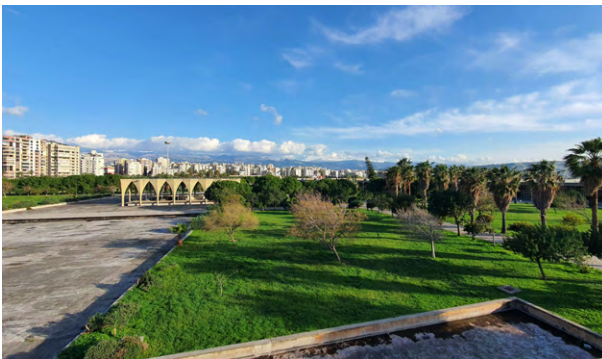
The area is characterized by:

- Specimen trees, tree rows and hedges, some of the site landscape characteristics.
- Random locations of trees.
- Ground cover at corners.
- Ground cover in the open spaces of the Cultural and Recreational Sector, around buildings and pools.

The rest of the site is naturally grown ground cover that is green in the cool moist season and turns yellow in the hot dry season.



Left Specimen trees.
Center Tree rows and hedges.
Right Some of the site landscape characteristics.



Left Random locations of trees.
Right Ground cover at corners.



Ground cover in the open spaces of the Cultural and Recreational Sector, around buildings and pools.

2.2 Rest Sector - Main Entrance

The Main Entrance Plaza is used by the community for festivals (Ramadan, holidays, scouts...) and religious ceremonies such as Eid prayers. It is also used as a car park for people visiting the Fairground.

2.2.1 Cactus garden

Located under the western part of the Entrance Portico, the Cactus garden has a high variety of succulent plants. Although planted in 1997, succulents are still regenerating in this area with time, creating a crowded space with more and more plants.

The main plants in this area are *Euphorbia candelabrum*, *Euphorbia millii*, *Yucca filamentosa*, *Agave americana*, *Agave attenuate*, *Opuntia ficus nitida*, *Portulacaria affra*, *Rosmarinus officinalis prostrates*



Left Cacti garden.
Right Lantana hedge.

2.2.2 Lantana hedge

Located at the Main Entrance Plaza, all along the reflecting pool under the Portico. This hedge creates a visual barrier in front of the pool, which prevents viewing the reflection of the building in the water.

2.2.3 Washingtonian palms cluster

Planted in 1997, alternating at 6 m spacing between palms.

2.2.4 Birds of Paradise garden

A small garden partially under the eastern side of the Main Entrance Portico, with 9 mature Bird of Paradise plants, *Washingtonia robusta* palms, and *Cyperus alternifolius* shrubs.



Left Washingtonia cluster.
Right Bird of Paradise garden.



2.2.5 Pines and Olives oval garden

A typical municipal landscape character garden that serves as a roundabout for cars accessing the Fair. Consists of 7 mature *Pinus pinea* and 2 *Olea europaea*.



Pines and Olives oval garden.

2.2.6 Neem trees

Azadirachta indica trees row, at the western side of the entrance.



Neem trees row.

2.3 Gardenesque style gardens

Gardenesque style is characterized by

- Curved path
- Cluster plants
- Pergolas
- Herb gardens
- Mixed hedge planters
- Climber Trellis

2.3.1 Quality Inn hotel garden

The garden was planted in 1997 with the core of the fair, the main trees are *Jacaranda mimosifolia*, and *Delonix regia*, with *Pinus pinea*, *Eucalyptus camaldulensis*, and *Casuarina cunninghamiana* at the peripheries.

The garden is characterized by a *Nerium oleander* cluster at the southern side, a mixed shrubs planter, a Palms cluster, and a *Bougainvillea* trellis.



Mature specimen Flamboyant trees at Quality Inn hotel.



Jacaranda tree row at Quality Inn hotel.



Mixed shrubs raised planter.



Nerium Cluster a special feature in the garden.



Palms cluster adjacent to the swimming pool.



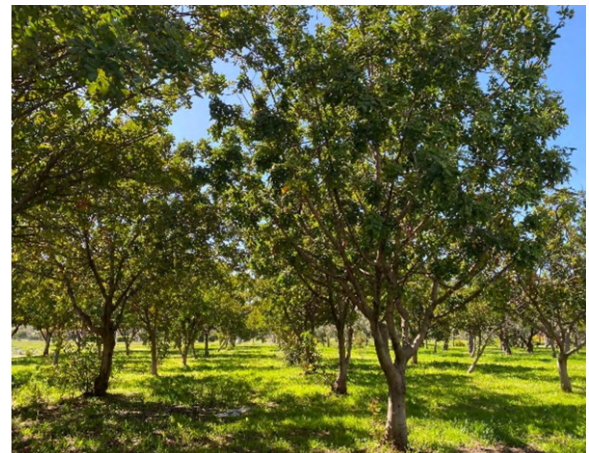
Bougainvillea Trellis alley.

2.3.2 Southeastern garden

The garden was established in 2009, designed in the “gardenesque” ornamental style with flowing curvilinear walkways and plant beddings. The garden includes a mix of different plant types and sizes, as well as features like curved paths and planters, pergolas, and tree groves, that create a sense of flow and movement throughout the space. The garden has a high variety of trees, shrubs, and herbaceous plantings.

The area is used by the visitors of the fair as a walking and seating area since it has two pergolas.

All the periphery is planted with *Bougainvillea glabra*, and partially with *Opuntia ficus indica*. The eastern side of the garden has a high variety of trees, planted randomly, and some spreading over the space (*Acacia cyanophylla*).



Above and Below Southeastern garden landscape.



Southeastern garden landscape features.

2.3.3 Northern garden

The Northern garden curved path and pergola were added in 2009, and a few Olive trees were planted at that time, but the major number of trees are not older than five years (2018). Trees are young, some might need staking, and regular pest control is a must. The area is not maintained, and weeds are taking over

the space, growing between trees and shrubs, making the area susceptible to pest infection. The periphery wall is planted *Bougainvillea* and has scattered *Opuntia indica*. The periphery adjacent to the Quality Inn garden is planted with *Lonicera japonica* climber and *Carissa grandiflora* hedge.



Left Newly planted *Citrus aurantium*.

Right *Bougainvillea* periphery.

2.4 The vegetated car park areas

2.4.1 Southern car park

The car park was built in 1974, but it was not planted before 2013.

Having a UNHCR office, this area is used by Syrian refugees accessing the office, which shaped the usage of the space.

The space is also used for driving lessons, and a part of it is the karting zone.

Other activities flourished in the place such as taxi cars to pick people from the place to other places, small movable kiosks (arabas) that sell nuts and crackers, and other movable kiosks that sell coffee, tea, and water.

Locals also use the space on the weekend as outdoor space (picnic).



Left UNHCR office.
Right Street vendors inside the southern car park.



Left Driving lessons.
Right Karting Zone.



The biggest car park with the highest variety of shelterbelt trees, and spontaneous vegetation, native and invasive. Some are naturally propagated by birds, insects, animals, and human beings.

The main plant species are:

Acacia cyanophylla, *Schinus molle*, *Pinus pinea*, *Casuarina cunninghamiana*, and *Nerium oleander*.

2.4.2 Western car park

This parking is completely neglected, and nature is taking over. Full of *Castor* plant, *Bramble* Berries, *Lantana*, and *Arundu* grass.



Above & Below Naturally grown weeds in the western abandoned car park.

2.4.3 Northeastern car park

The space is used by locals for renting and riding bicycles, and seating areas under the trees. Some kiosks sell random goods (chips, chocolate, water, coffee...) the space is used also for festivals for kids such as the Ramadan festival.



People gathered welcoming the month of Ramadan.



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Bike riding.



Kiosks.



People sitting under the trees.

This car park was planted in 1997 in an attempt to make a new secondary entrance to the Fair from the eastern side. It is planted with shelterbelt

trees, *Acacia cyanophylla*, and *Casuarina cunninghamiana*, in addition to *Brachychyton populneus*.



Left & Right Shelterbelt trees, *Acacia cyanophylla* and *Casuarina cunninghamiana*.



2.5 Seaward Landscape

The western side is completely neglected, where nature is taking over, full of *Castor* plants, *Arundo* grass, and *Bramble* berries.

It also has a cluster of *Phoenix dactylifera* (35 date palms), that are almost 50 years old.



Existing Date palms (*Phoenix dactylifera*) in the abandoned western side of the site.

2.6 Condition

The landscape at the Cultural and Recreational Sector and the Quality Inn garden is well maintained.

Trees and shrubs are regularly pruned, mature plants don't need irrigation, and newly added plants are irrigated through drip irrigation.

Some plants in the Cultural and Recreational Sector have reached their average life age. Other plants already died and were replaced by new plants such as *Thevetia peruviana*, *Betula alba*, and *Brachycton populneous*.

The workers frequently clip the grass growing between the tiles at the entrance.

Some trees and shrubs need pruning and removal of dead branches.

All the periphery needs maintenance. Plants grew over each other, including new Washingtonia palms, Lantana, and Opuntia.

Pruning and thinning out shrubs help improve air circulation and sunlight penetration, which can reduce the risk of pest infestations. It can also help to remove any weak or damaged branches, which can help to make the shrubs stronger and more resistant to pests and diseases. Regular maintenance of trees, shrubs, and climbers is a must.



Left Newly planted rose with drip irrigation.

Right Pruned Pine trees.



Left Dead branches in Pfitzeriana shrub in the Cultural and Recreational Sector.

Right Fallen branch in Southwestern Garden.



Periphery mixed plants: Acacia, Bougainvillea, Lanatana, Washingtonia.

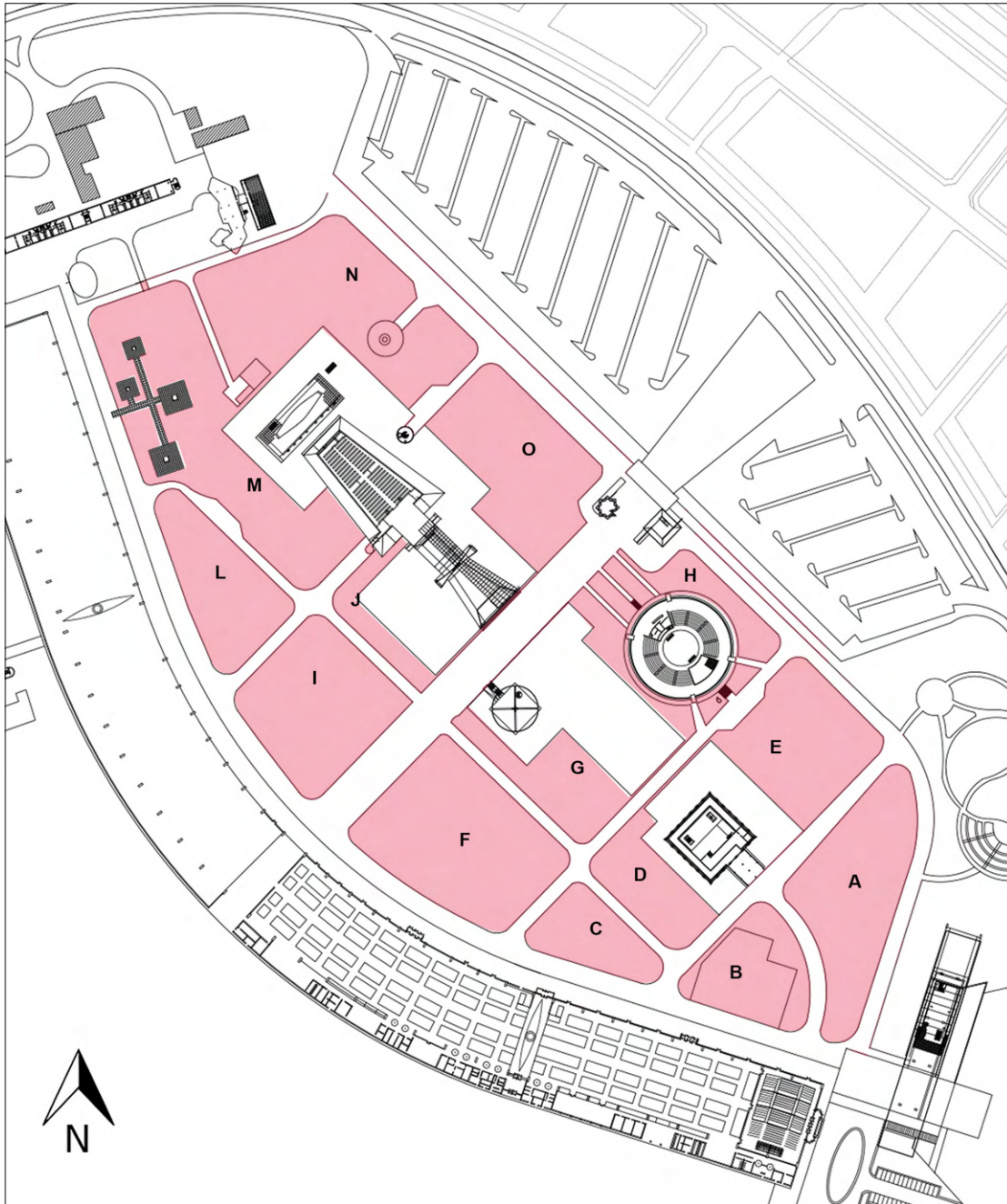
All the periphery needs maintenance:

Different tasks need to be undertaken to maintain the periphery of RKIF.

- Tree pruning: Overcrowded trees can be a hazard, as they may be more prone to disease or damage from high winds. It's important to prune trees regularly to remove dead or diseased branches, thin out branches that are too close together, and shape the tree to promote healthy growth.
- Dead trees and fallen branches: Dead trees should be removed. Fallen branches should also be cleared away promptly to prevent tripping hazards and to keep the garden looking tidy.
- It is recommended to stake young trees to promote straight growth and prevent bending or leaning as they mature. Staking provides support for the tree and helps it establish a strong root system while growing.
- Weeds are taking over a part of the garden. Weed control is highly needed.
- *Opuntia indica* is taking over several parts of the periphery wall, adding no value to the space, and having bad shape.
- *Washingtonia* palms, *Neem* trees, and *Lantana* shrubs are regenerating within the *Bougainvillea* climbers on the periphery wall. Removing the regenerated trees and shrubs will open the area, add aesthetic value, and help reduce pests.
- *Bougainvillea* on the periphery wall requires regular pruning to keep it under control.

Annex A: Landscape Vegetation Survey (Excel database)

As mentioned in the present report, the site was divided into 5 character zones: The Culture and Recreational Sector, the Rest Sector, etc. Due to its size, the Cultural and Recreational Sector was divided into 14 zones as shown in the below plan.



Zoning of the Cultural and Recreational Sector according to the survey.

Annex B: Cultural and Recreational Sector

	Plant type	Common name	Arabic common name
ZONE A	Trees		
	Callistemon laevis	Bottlebrush	فرشاة الزجاج
	Cupressus sempervirens	Italian cypress	سرو البحر الأبيض المتوسط
	Delonix regia	Flamboyant or royal poinciana	بونسيانا او المتوهجة
	Magnolia grandiflora	Southern magnolia	ماغنوليا
	Parkinsonia aculeata	Jerusalem thorn	السنط الشوكي
	Phoenix dactilifera	Date palm	نخلة البلح
	Pinus pinea	Stone pine	صنوبر مثمر
	Populus canescens	Gray poplar	الحوار الأبيض
	Thevetia peruviana	Yellow oleander	الثعلبية الصفراء
	Washingtonia robusta	Fan palm	نخلة المروج المكسيكية
	Shrubs		
	Feijoa sellowiana	Pineapple guava	فايجوا
	Hibiscus rosa sinensis	Chinese hibiscus	خطمي وردي صيني
	Pittosporum tobira	Japanese pittosporum	شجرة الياسمين اليابانية
	Yucca aloifolia	Spanish bayonet	يوكا
ZONE B	Trees		
	Callistemon laevis	Bottlebrush	فرشاة الزجاج
	Cassia fistula	Golden shower tree	شجرة الأمطار
	Washingtonia robusta	Fan palm	نخلة المروج المكسيكية
	Myoporum laetum	Mousehole tree	شجرة ميوبوروم
	Parkinsonia aculeata	Jerusalem thorn	السنط الشوكي
	Phoenix dactilifera	Date palm	نخلة البلح
	Plumeria alba	White frangipani	فتنة

Plants Number	Average Height	Average Age	Conditions	Notes
				Note: in general, all plants are in good condition, some trees might need pruning and removal of dead branches, new small trees need staking.
3	4 m	15 years	good	
1	8 m	27 years	good	
2	3 m	10 years	good	
2	2.5 m	27 Years	good	
5	varies	varies	good	regenerating naturally over the years
1	12 m	27 years	good	
27	8 m	27 years	good	
1	3 m	15 years	good	
16	2.5 m	27 years	medium	have reached average age
7	1.5 m	5-10 years	good	regenerating naturally over the years
1	1 m	5 Years	good	
14	1.8 m	27 years	medium	
22	1.2 m	27 years	good	
5	1.5 m	27 years	good	
1	5 m	27 years	good	
2	1 m	2 years	good	
2	1 m	5-10 years	good	regenerating naturally over the years
1	6 m	15-20 years	good	
3	6 m	15 years	good	
2	12 m	27 years	good	
1	4 m	27 years	good	

	Plant type	Common name	Arabic common name
ZONE B	Shrubs		
	Bougainvillea glabra	Paperflower	الجهنمية
	Hibiscus rosa sinensis	Chinese hibiscus	خطمي وردي صيني
	Juniperus chinensis 'pfitzeriana'	Pfitzer Juniper	صنوبر بفتزر
	Pittosporum tobira	Japanese pittosporum	شجرة الياسمين اليابانية
	Westringia fruticosa	Coastal Rosemary	الإكليل الساحلي
	Yucca aloifolia	Spanish bayonet	يوكا
ZONE C	Trees		
	Acacia cyanophylla	Orange Wattle	سنط عربي
	Callistemon laevis	Bottlebrush	فرشة الزجاج
	Cupressus sempervirens	Italian cypress	سرو البحر الأبيض المتوسط
	Cupressus sempervirens	Italian cypress	سرو البحر الأبيض المتوسط
	Jacaranda mimosifolia	Jacaranda	جاكاراندا
	Phoenix dactilifera	Date palm	نخلة البلح
	Plumeria alba	White frangipani	ياسمين هندي أبيض
	Thuja orientalis	Oriental Thuja	شجرة الحياة أو العفص
	Washingtonia robusta	Fan palm	نخلة المروج المكسيكية
	Shrubs		
	Juniperus chinensis 'pfitzeriana'	Pfitzer Juniper	صنوبر بفتزر
	Nerium oleander	Oleander	الدَفْلَى
	Pittosporum tobira	Japanese pittosporum	شجرة الياسمين اليابانية
	Rosmarinus officinalis	Rosemary	إكليل الجبل
	Rosmarinus officinalis prostratus	Rosemary	إكليل الجبل الزاحف

Plants Number	Average Height	Average Age	Conditions	Notes
3	1.5 m	27 years	good	
24	1.8 m	27 years	medium	
50	1.5 m	27 years	good	
1	50 cm	2 years	good	newly planted
1	50 cm	2 years	good	
10	50 cm	27 years	good	
1	5 m	10-15 years	good	regenerate naturally
1	5 m	10-15 years	good	
5	10 m	27 years	good	
1	1 m	10-15 years	good	
2	8 m	27 years	good	
4	12 m	27 years	good	
3	5 m	27 years	good	
2		10-15 years	good	
2	1.5 m	5-10 years	good	regenerating naturally over the years
9	1.5 m	27 years	good	
7	1.8 m	27 years	good	
1	1.5 m	10-15 years	good	
12	50 cm	10-15 years	good	
5	50 cm	10-15 years	good	

	Plant type	Common name	Arabic common name
ZONE D	Trees		
	Albizia julibrissin	Persian silk tree	شجرة الحرير
	Araucaria excelsa	House Pine	أروكاريا متغايرة الأوراق
	Cupressus arizonica	Arizona cypress	سرو أريزونا
	Cupressus sempervirens	Italian cypress	سرو البحر الأبيض المتوسط
	Delonix regia	Flamboyant or royal poinciana	بونسيانا أو المتوهجة
	Jacaranda mimosifolia	Jacaranda	جاكاراندا
	Parkinsonia aculeata	Jerusalem thorn	السنط الشوكي
	Pinus pinea	Stone pine	صنوبر مثمر
	Schinus molle	Peruvian pepper	شجرة الفلفل البيروفي
	Washingtonia robusta	Fan palm	نخلة المروج المكسيكية
	Shrubs		
	Agave americana	Century plant	أغاف أو الصبار الأمريكي
	Hibiscus rosa sinensis	Chinese hibiscus	خطمي وردي صيني
	Juniperus chinensis 'pfitzeriana'	Pfitzer Juniper	صنوبر بفتزر
	Pittosporum tobira	Japanese pittosporum	شجرة الياسمين اليابانية
	Rosmarinus officinalis prostratus	Rosemary	إكليل الجبل الزاحف
ZONE E	Trees		
	Callistemon laevis	Bottlebrush	فرشاة الزجاج
	Cupressus sempervirens	Italian cypress	سرو البحر الأبيض المتوسط
	Jacaranda mimosifolia	Jacaranda	جاكاراندا
	Myoporum laetum	Mousehole tree	شجرة ميوبوروم
	Parkinsonia aculeata	Jerusalem thorn	السنط الشوكي
	Plumeria alba	White frangipani	فتنة
	Populus canescens	Gray poplar	حور رمادي
	Thuja orientalis	Oriental Thuja	شجرة الثويا
	Washingtonia robusta	Fan palm	نخلة المروج المكسيكية

Plants Number	Average Height	Average Age	Conditions	Notes
2	5 m	27 years	good	
1	15 m	27 years	good	
1	15 m	27 years	good	
1	1 m	10-15 years	good	
1	2 m	5 years	good	
1	6 m	27 years	good	
1	6 m	27 years	good	regenerating naturally over the years
7	8 m	27 years	good	
1	4 m	27 years	good	
1	1.5 m	5 years	good	regenerating naturally over the years
11	1.5 m	27 years	good	
7	1.8 m	27 years	good	
13	1.5 m	27 years	good	
1	1 m	10-15 years	good	
2	50 cm	10-15 years	good	
6	5 m	27 years	good	
11	8 m	27 years	good	
6	8 m	varies	good	
1	5 m	15-20 years	good	
3	1.5 m	5-10 years	good	
2	2.5 m	27 years	good	
1	6 m	27 years	good	
1	75 cm	27 years	good	
1	1.5 m	5-10 years	good	regenerating naturally over the years

	Plant type	Common name	Arabic common name
ZONE E	Shrubs		
	Juniperus chinensis 'pfitzeriana'	Pfitzer Juniper	صنوبر بفتزر
	Nerium oleander	Oleander	الدِّفْلَى
	Rosmarinus officinalis prostratus	Creeping rosemary	إكليل الجبل الزاحف
	Gazania rigens	Treasure flower	زهرة الكنز غزانيا
ZONE F	Trees		
	Acacia cyanophylla	Orange Wattle	سنط عربي
	Cupressus sempervirens	Italian cypress	سرو البحر الأبيض المتوسط
	Grevillea robusta	Silky Oak	بلوط حريري
	Jacaranda mimosifolia	Jacaranda	جاكاراندا
	Myoporum laetum	Mousehole tree	شجرة ميوبوروم
	Olea europaea	Common olive	زيتون
	Parkinsonia aculeata	Jerusalem thorn	السنط الشوكي
	Phoenix dactilifera	Date palm	نخلة البلح
	Schinus molle	Peruvian pepper	شجرة الفلفل البيروفي
	Schinus terebinthifolius	Brazilian pepper tree	فلفل كاذب
	Washingtonia robusta	Fan palm	نخلة المروج المكسيكية
	Washingtonia robusta	Fan palm	نخلة المروج المكسيكية
	Shrubs		
	Hibiscus rosa sinensis	Chinese hibiscus	خطمي وردي صيني
	Pittosporum tobira nana	Japanese pittosporum	شجرة الياسمين اليابانية
	Pyracantha coccinea	Scarlet firethorn	شوك النار القرمزي
	Rosmarinus officinalis prostratus	Creeping rosemary	إكليل الجبل الزاحف
	Gazania rigens	Treasure flower	زهرة الكنز غزانيا

Plants Number	Average Height	Average Age	Conditions	Notes
14	1.5 m	27 years	good	
29	1.8 m	27 years	good	
3	50 cm	10-15 years	good	
groundcover	groundcover	10-15 years	good	
2	6 m	27 years	good	regenerate naturally
4	1.5 m	10-15 years	good	
1	4 m	10-15 years	good	
3	Varies	Varies	good	
1	5 m	15-20 years	good	
1	4 m	15-20 years	good	
4	Varies	Varies	good	
5	12 m	27 years	good	
1	1.5 m	5-10 years	good	
1	6 m	15-20 years	good	
1	1.5 m	5-10 years	good	regenerating naturally over the years
27	12 m	27 years	good	
19	1.8 m	27 years	good	
16	75 cm	10-15 years	good	
32	1 m	27 years	good	
4	50 cm	10-15 years	good	
groundcover	groundcover	10-15 years	good	

	Plant type	Common name	Arabic common name
ZONE G	Trees		
	Brachychiton populneus	The kurrajong	شجرة استركوليا
	Cupressus sempervirens	Italian cypress	سرو البحر الأبيض المتوسط
	Delonix regia	Flamboyant or royal poinciana	بونسيانا او المُنَوَّهَجَة
	Jacaranda mimosifolia	Jacaranda	جاكاراندا
	Myoporum laetum	Mousehole tree	شجرة ميوبوروم
	Olea europaea	Common olive	زيتون
	Parkinsonia aculeata	Jerusalem thorn	السنط الشوكي
	Phoenix dactilifera	Date palm	نخلة البلح
	Populus canescens	Gray poplar	حور رمادي
	Schinus molle	Peruvian pepper	شجرة الفلفل البيروفي
	Schinus terebinthifolius	Brazilian pepper tree	فلفل كاذب
	Washingtonia robusta	Fan palm	نخلة المروج المكسيكية
	Shrubs		
	Lantana camara	Lantana	كَمَارَة شائعة
	Hibiscus rosa sinensis	Chinese hibiscus	خطمي وردي صيني
	Juniperus chinensis 'pfitzeriana'	Pfitzer Juniper	صنوبر بفتزر
	Rosmarinus officinalis prostratus	Creeping rosemary	إكليل الجبل الزاحف
ZONE H	Trees		
	Callistemon laevis	Bottlebrush	فرشاة الزجاج
	Brachychiton populneus	The kurrajong	شجرة استركوليا
	Chamaerops Humilis	European Fan Palm	النخيل المروحي
	Cupressus sempervirens	Italian cypress	سرو البحر الأبيض المتوسط
	Delonix regia	Flamboyant or royal poinciana	بونسيانا او المُنَوَّهَجَة
	Myoporum laetum	Mousehole tree	شجرة ميوبوروم
	Phoenix dactilifera	Date palm	نخلة البلح
	Schinus molle	Peruvian pepper	شجرة الفلفل البيروفي
	Shrubs		
	Agave americana	Century plant	أغاف أو الصبار الأمريكي
	Bougainvillea glabra	Paperflower	الجهنمية

Plants Number	Average Height	Average Age	Conditions	Notes
17	8 m	27 years	good	
1	1.5 m	10-15 years	good	
1	6 m	10-15 years	good	
2	8 m	27 years	good	
1	6 m	15-20 years	good	
1	6 m	15-20 years	good	
5	varies	varies	good	
1	12 m	27 years	good	
1	6 m	15-20 years	good	
2	8 m	27 years	good	
1	6 m	15-20 years	good	
1	1.5 m	10-15 years	good	regenerating naturally over the years
1	50 cm	—	good	Invasive
20	1.8 m	27 years	good	
16	1.5 m	27 years	good	
10	50 cm	10-15 years	good	
7	6 m	27 years	good	
3	8 m	27 years	good	
2	2.5 m	27 years	good	
2	1.5 m	10-15 years	good	
2	varies	varies	good	
1	4 m	10-15 years	good	
9	12 m	27 years	good	
1	8 m	27 years	good	
4	1.5 m	27 years	good	
22	3 m	27 years	good	

	Plant type	Common name	Arabic common name
ZONE H	Euphorbia millii	Crown of thorns	شوكة المسيح
	Gradenia grandiflora	Gardenia	غاردينيا
	Juniperus chinensis 'pfitzeriana'	Pfitzer Juniper	صنوبر بفتزر
	Lantana camara	Lantana	كَمَارَة شائعة
	Nerium oleander	Oleander	الدَّفْلَى
	Pittosporum tobira	Japanese pittosporum	شجرة الياسمين اليابانية
	Pittosporum tobira nana	Japanese pittosporum	شجرة الياسمين اليابانية
	Thuja orientalis	Oriental Thuja	شجرة الثويا
	Yucca aloifolia	Spanish bayonet	يوكا
ZONE I	Trees		
	Acacia cyanophylla	Orange Wattle	سنط عربي
	Araucaria excelsa	House Pine	أروكاريا متغايرة الأوراق
	Azadirachta indica	Neem tree	النيم الشائع, زنزلخت
	Cupressus sempervirens	Italian cypress	سرو البحر الأبيض المتوسط
	Erythrina crista galli	Coral tree	البهبهانة
	Ficus nitida	Cuban Laurel	فيكس نيتدا
	Jacaranda mimosifolia	Jacaranda	جاكاراندا
	Juniperus 'chinensis' pyramidalis	Chinese juniper	عرعر صيني
	Myoporum laetum	Mousehole tree	شجرة ميوبوروم
	Parkinsonia aculeata	Jerusalem thorn	السنط الشوكي
	Phoenix dactilifera	Date palm	نخلة البلح
	Schinus molle	Peruvian pepper	شجرة الفلفل البيروفي
	Tecoma capensis	Cape Honeysuckle	تيكومة رأس الرجاء
	Thevetia peruviana	Yellow oleander	الثعلبة الصفراء
	Washingtonia robusta	Fan palm	نخلة المروج المكسيكية
	Washingtonia robusta	Fan palm	نخلة المروج المكسيكية
	Shrubs		
	Cyperus alternifolius	Umbrella Sedge	قصب المظلة أو السعد المظلي
	Nerium oleander	Oleander	الدَّفْلَى
	Pyracantha coccinea	Scarlet firethorn	شوك النار القرمزي

Plants Number	Average Height	Average Age	Conditions	Notes
7	25 cm	27 years	good	
12	1.3 m	27 years	good	
28	1.5 m	27 years	medium	some shrubs are dying
94	50 cm	27 years	good	
8	1.8 m	27 years	good	
1	80 cm	27 years	good	
99	1.5 m	27 years	good	
2	2.5 m	27 years	good	
8	1.5 m	27 years	good	
1	5 m	27 years	good	regenerate naturally
1	12 m	27 years	good	
1	8 m	15-20 years	good	
7	varies	varies	good	
1	6 m	27 years	good	
1	6 m	15-20 years	good	
3	4 m	10-15 years	good	
1	8 m	27 years	good	
1	6 m	15-20 years	good	
3	1.5 m	5-10 years	good	regenerating naturally over the years
4	12 m	27 years	good	
3	8 m	27 years	good	
1	3 m	27 years	good	
1	3 m	27 years	good	
3	1.5 m	5-10 years	good	regenerating naturally over the years
19	12 m	27 years	good	
3	2 m	27 years	good	
26	1.8	27 years	medium	
40	1 m	27 years	good	

	Plant type	Common name	Arabic common name
ZONE J	Trees		
	Acacia cyanophylla	Orange Wattle	سنط عربي
	Brachychiton populneus	The kurrajong	شجرة استركوليا
	Ficus nitida	Cuban Laurel	فيكس نيتدا
	Pinus pinea	Stone pine	صنوبر مثمر
	Thevetia peruviana	Yellow oleander	الثعلبة الصفراء
	Thuja orientalis	Oriental Thuja	شجرة الحياة أو العفص
	Shrubs		
	Pyracantha coccinea	Scarlet firethorn	شوك النار القرمزي
	Juniperus chinensis 'pfitzeriana'	Pfitzer Juniper	صنوبر بفتزر
ZONE K	Nerium oleander	Oleander	الدَّفْلَى
	Trees		
	Arbutus unedo	Strawberry tree	قطلب أونيدو
	Callistemon laevis	Bottlebrush	فرشاة الزجاج
	Ceratonia siliqua	Carob	خروب
	Cupressus sempervirens stricta	Columnar Italian Cypress	سرو اخضر افقي
	Jacaranda mimosifolia	Jacaranda	جاكاراندا
	Juniperus 'chinensis' pyramidalis	Chinese juniper	عرعر صيني
	Myoporum laetum	Mousehole tree	شجرة ميوبوروم
	Parkinsonia aculeata	Jerusalem thorn	السنط الشوكي
	Populus canescens	Gray poplar	حور رمادي
	Schinus molle	Peruvian pepper	شجرة الفلفل البيروفي
	Tecoma capensis	Cape Honeysuckle	تيكومة رأس الرجاء
	Thevetia peruviana	Yellow oleander	الثعلبة الصفراء
	Washingtonia robusta	Fan palm	نخلة المروج المكسيكية
	Shrubs		
	Hibiscus rosa sinensis	Chinese hibiscus	خطمي وردي صيني
	Juniperus chinensis 'pfitzeriana'	Pfitzer Juniper	صنوبر بفتزر
	Lantana camara	Lantana	كَمَارَة شائعة

Plants Number	Average Height	Average Age	Conditions	Notes
2	5 m	varies	good	regenerate naturally
12	8 m	27 years	good	
1	6 m	15-20 years	good	
6	8 m	27 years	good	
1	2.5 m	10-15 years	good	
1	2.5 m	27 years	good	
10	1 m	27 years	good	
32	1.8 m	27 years	good	
17	1.8 m	27 years	good	
8	2.5 m	27 years	good	
7	6 m	27 years	good	need pruning
1	2.5 m	5-10 years	good	
24	8 m	27 years	good	
3	8 m	27 years	good	
30	8 m	27 years	good	
4	varies	varies	good	
2	varies	varies	good	regenerating naturally over the years
1	6 m	27 years	good	
3	varies	varies	good	
6	2 m	27 years	good	
10	2.5 m	27 years	good	
1	1.5 m	5-10 years	good	regenerating naturally over the years
6	1.8 m	27 years	good	
12	1.5 m	27 years	good	
8	50 cm	27 years	good	invasive

	Plant type	Common name	Arabic common name
ZONE K	Myrtus communis	Myrtle	الآس الشائع أو الحمبلاس
	Nerium oleander	Oleander	الدِّفْلَى
	Pittosporum tobira nana	Japanese pittosporum	شجرة الياسمين اليابانية
	Gazania regens	Treasure flower	زهرة الكنز غزانبا
	Pelargonium graveolens	Aromatic geranium	عطرة
ZONE L	Trees		
	Araucaria excelsa	House Pine	أروكاريا متغايرة الأوراق
	Cupressus sempervirens	Italian cypress	سرو البحر الأبيض المتوسط
	Jacaranda mimosifolia	Jacaranda	جاكاراندا
	Juniperus 'chinensis' pyramidalis	Chinese juniper	عرعر صيني
	Myoporum laetum	Mousehole tree	شجرة ميوبوروم
	Parkinsonia aculeata	Jerusalem thorn	السنط الشوكي
	Phoenix dactilifera	Date palm	نخلة البلح
	Pinus pinea	Stone pine	صنوبر مثمر
	Schinus molle	Peruvian pepper	شجرة الفلفل البيروفي
	Thuja orientalis	Oriental Thuja	شجرة الثويا
	Washingtonia robusta	Fan palm	نخلة المروج المكسيكية
	Shrubs		
	Cyperus alternifolius	Umbrella Sedge	قصب المظلة أو السعد المظلي
	Nerium oleander	Oleander	الدِّفْلَى
	Yucca aloifolia	Spanish bayonet	يوكا
	Santolina decumbens	Lavender-cotton	قيصوم جبلي
ZONE M	Trees		
	Acacia cyanophylla	Orange Wattle	سنط عربي
	Albizia julibrissen	Persian silk tree	شجرة الحرير
	Araucaria excelsa	House Pine	أروكاريا متغايرة الأوراق
	Betula alba	White birch	
	Cercis siliquastrum	Judas tree	شجر الأرجوان
	Cupressus sempervirens	Italian cypress	سرو البحر الأبيض المتوسط
	Cupressus sempervirens 'stricta'	Italian cypress	سرو البحر الأبيض المتوسط

Plants Number	Average Height	Average Age	Conditions	Notes
16	1.3 m	27 years	good	
15	1.8m	27 years	medium	
26	1 m	27 years	good	
groundcover	groundcover	—	good	
groundcover	groundcover	—	good	
1	10 m	27 years	good	
1	1 m	5-10 years	good	
1	1.5 m	5-10 years	good	
1	6 m	27 years	good	
3	4 m	10-15 years	good	
4	6 m	27 years	good	
5	12 m	27 years	good	
23	8 m	27 years	good	
3	5 m	10-15 years	good	
2	2 m	10-15 years	good	
1	1.5 m	5-10 years	good	regenerating naturally over the years
3	1.4 m	27 years	good	
35	1.8 m	27 years	medium	
5	1.5 m	27 years	good	
groundcover	groundcover	—	good	
13	varies	varies	good	regenerate naturally
3	3 m	10-15 years	good	
1	12 m	27 years	good	
2	8 m	27 years	good	reached average age
5	8 m	27 years	good	
6	6 m	15-20 years	good	
38	8 m	15-20 years	good	

	Plant type	Common name	Arabic common name
ZONE M	Ficus nitida	Cuban Laurel	فيكس نيتدا
	Jacaranda mimosifolia	Jacaranda	جاكاراندا
	Juniperus 'chinensis' pyramidalis	Chinese juniper	عرعر صيني
	Myoporum laetum	Mousehole tree	شجرة ميوبوروم
	Parkinsonia aculeata	Jerusalem thorn	السنط الشوكي
	Phoenix dactilifera	Date palm	نخلة البلح
	Pinus canariensis	Canary Island Pine	صنوبر كناري
	Pinus pinea	Stone pine	صنوبر مثمر
	Schinus molle	Peruvian pepper	شجرة الفلفل البيروفي
	Thevetia peruviana	Yellow oleander	الثعلبة الصفراء
	Washingtonia robusta	Fan palm	نخلة المروج المكسيكية
	Shrubs		
	Agave americana	Century plant	أغاف أو الصبار الأمريكي
	Hibiscus rosa sinensis	Chinese hibiscus	خطمي وردي صيني
	Lantana camara	Lantana	كمارة شائعة
	Nerium oleander	Oleander	الدقلى
ZONE N	Trees		
	Acacia cyanophylla	Orange Wattle	سنط عربي
	Albizia julibrissen	Persian silk tree	شجرة الحرير
	Araucaria excelsa	House Pine	أروكاريا متغايرة الأوراق
	Callistemon laevis	Bottlebrush	فرشاة الزجاج
	Cercis siliquastrum	Judas tree	شجر الأرجوان
	Cupressus sempervirens	Italian cypress	سرو البحر الأبيض المتوسط
	Cupressus sempervirens 'stricta'	Italian cypress	سرو البحر الأبيض المتوسط
	Tipuana tipu	Yellow Jacaranda	
	Jacaranda mimosifolia	Jacaranda	جاكاراندا
	Juniperus 'chinensis' pyramidalis	Chinese juniper	عرعر صيني
	Myoporum laetum	Mousehole tree	شجرة ميوبوروم
	Parkinsonia aculeata	Jerusalem thorn	السنط الشوكي

Plants Number	Average Height	Average Age	Conditions	Notes
3	6 m	15-20 years	good	
5	8 m	27 years	good	
1	8 m	15-20 years	good	
6	5 m	15-20 years	good	
7	8 m	27 years	good	
2	12 m	27 years	good	
1	8 m	27 years	good	
7	8 m	27 years	good	
4	varies	varies	good	
4	2.5 m	27 years	good	
9	12 m	27 years	good	
63	1.5 m	27 years	good	
2	1.8 m	27 years	medium	
28	50 cm	27 years	good	regenerate naturally
23	1.8 m	27 years	medium	
12	6 m	varies	good	regenerate naturally
1	4 m	10-15 years	good	
1	12 m	27 years	good	
19	5 m	27 years	good	
5	8 m	27 years	good	
1	6 m	15-20 years	good	
12	8 m	15-20 years	good	
1	4 m	10-15 years	good	
1	6 m	27 years	good	
17	8 m	15-20 years	good	
4	5 m	10-15 years	good	
2	varies	varies	good	

	Plant type	Common name	Arabic common name
ZONE N	Arbutus unedo	Strawberry tree	قطلب أونيدو
	Tecoma capensis	Cape Honeysuckle	تيكومة رأس الرجاء
	Delonix regia	Flamboyant or royal poinciana	بونسيانا او المتوهجة
	Schinus molle	Peruvian pepper	شجرة الفلفل البيروفي
	Thevetia peruviana	Yellow oleander	الثعلبة الصفراء
	Citrus aurantium	Bitter orange	بوصفير
	Washingtonia robusta	Fan palm	نخلة المروج المكسيكية
	Washingtonia robusta	Fan palm	نخلة المروج المكسيكية
	Shrubs		
	Hibiscus rosa sinensis	Chinese hibiscus	خطمي وردي صيني
	Lantana camara	Lantana	كمارة شائعة
	Nerium oleander	Oleander	الدفلى
	Pittosporum tobira	Japanese pittosporum	شجرة الياسمين اليابانية
	Gazania regens	Treasure flower	زهرة الكنز غزانيا
EASTERN PERIPHERY	Trees		
	Citrus aurantium	Bitter orange	بوصفير
	Chamaerops humilis	European Fan Palm	النخيل المروحي
	Thevetia peruviana	Yellow oleander	الثعلبة الصفراء

Plants Number	Average Height	Average Age	Conditions	Notes
18	2.5 m	27 years	good	
26	2.5 m	27 years	good	
1	2.5 m	10-15 years	good	
5	6 m	15-20 years	good	
2	2.5 m	10-15 years	good	
1	3 m	10-15 years	good	
3	1.5 m	5-10 years	good	regenerating naturally over the years
21	12 m	27 years	good	
2	1.8 m	27 years	medium	
25	50 cm	27 years	good	regenerate naturally
28	1.8 m	27 years	medium	
25	1.5 m	10-15 years	good	
groundcover	groundcover	—	good	
66	5 m	27 years	good	
1	2.5 m	27 years	good	
5	3 m	27 years	good	

Rest Sector

	Plant type	Common name	Arabic common name
CACTUS GARDEN	Trees		
	<i>Euphorbia candelabrum</i>	Candelabra tree	
	<i>Cocos plumosa</i>	Queen palm	نخيل كوكس
	Shrubs		
	<i>Agave attenuata</i>	Century plant	أغاف
	<i>Agave americana</i>	Century plant	أغاف أو الصبار الأمريكي
	<i>Euphorbia milii</i>	Crown of thorns	شوكة المسيح
	<i>Yucca filamentosa</i>	Adam's needle	يوكا خيطية
	<i>Aeonium arboreum webb</i>	Irish rose	أيونيوم
	<i>Pilosocereus polygonus</i>	Robin Tree Cactus	
	<i>Opuntia ficus indica</i>	Indian fig opuntia	لصبار الهندي أو التين الشوكي
	<i>Portulacaria afra</i>	Elephant bush	
	<i>Dasyllirion texanum</i>	Texas Sotol	سوتل تكساني
	<i>Rosmarinus officinalis</i>	Rosemary	إكليل الجبل
WASHINGTONIA CLUSTER	Trees		
	<i>Cocos plumosa</i>	Queen palm	نخيل كوكس
	<i>Washingtonia robusta</i>	Fan palm	نخلة المروج المكسيكية
	Shrubs		
	<i>Rosmarinus officinalis prostratus</i>	Rosemary	إكليل الجبل الزاحف
STRELITZIA GARDEN	Trees		
	<i>Washingtonia robusta</i>	Fan palm	نخلة المروج المكسيكية
	Shrubs		
	<i>Cycas revoluta</i>	Sago palm	سيكاد ملتف
	<i>Cyperus alternifolius</i>	Umbrella Sedge	قصب المظلة أو السعد المظلي
STRELITZIA GARDEN	<i>Strelitzia augusta</i>	White bird of paradise	طائر الجنة الأبيض

Plants Number	Average Height	Average Age	Conditions	Notes
40	3 m	27 years	good	
5	9 m	27 years	good	
15	1.3 m	27 years	good	
21	1 m	27 years	good	
22	70 cm	27 years	good	
2	80 cm	27 years	good	
4	1 m	27 years	good	
10	2 m	27 years	good	
30	2 m	27 years	good	
17	1 m	27 years	good	
2	40 cm	27 years	good	
10		27 years	good	
1	6 m	27 years	good	
52	10 m	27 years	good	
6	50 cm	27 years	good	
12	75 cm	27 years	good	
4	1 m to 1.8 m	varies	good	
2	1.3 m	15 years	good	
10	1.5 m	15 years	good	
9	1.5 m	15 years	good	

PINES AND OLIVES	Trees		
	<i>Pinis pinea</i>	Stone pine	صنوبر مثمر
	<i>Olea europeae</i>	Common olive	زيتون
NEEM TREES ROW	Trees		
	<i>Azadirachta indica</i>	Neem tree	النيم الشائع، زنزلخت
	<i>Olea europeae</i>	Common olive	زيتون
	Shrubs		
	<i>Agave americana</i>	Century plant	أغاف أو الصبار الأمريكي
	<i>Agave attenuata</i>	Century plant	أغاف
LANTANA HEDGE	Shrubs		
	<i>Lantana camara</i>	Lantana	كمارة شائعة

7	8 m	27 years	good
2	6 m	27 years	good
12	8 m	15 years	good
2	6 m	15 years	good
23	1.3 m	15 years	good
20	70 cm	15 years	good
45	75 cm	15 years	good

Vegetated Car Parks

	Scientific name	Common name	Arabic name
NORTH EASTERN PARKING	Trees		
	<i>Casuarina cunninghamiana</i>	River she-oak	كزوارينة كانينغهامية
	<i>Acacia cyanophylla</i>	Orange Wattle	سنط عربي
	<i>Brachychiton populneus</i>	Kurrajong	شجرة استركوليا
	<i>Washingtonia robusta</i>	Fan palm	نخلة المروج المكسيكية
	Shrubs		
	<i>Nerium oleander</i>	Oleander	الدِّفْلَى
	Trees		
	<i>Casuarina cunninghamiana</i>	River she-oak	كازاريننا كانينغهامية
	<i>Acacia cyanophylla</i>	Orange Wattle	سنط عربي
SOUTHERN PARKING	<i>Schinus molle</i>	Peruvian pepper	شجرة الفلفل البيروفي
	<i>Pinus pinea</i>	Stone pine	صنوبر مشمر
	<i>Ceratonia siliqua</i>	Carob	خَرْوَب
	<i>Azadirachta indica</i>	Neem tree	النيم الشائع، زنزلخت
	<i>Myoporum laetum</i>	Mousehole tree	شجرة ميوبوروم
	<i>Albizia julibrissin</i>	Persian silk tree	شجرة الحرير
	<i>Citrus aurantium</i>	Bitter orange	بوصفير
	Shrubs		
	<i>Nerium oleander</i>	Oleander	الدِّفْلَى
WESTERN PARKING	Naturally grown plants		
	<i>Arundo donax</i>	Giant reed	قصب
	<i>Rubus fruticosus</i>	Bramble berry	توت عليق
	<i>Ricinus communis</i>	Castor	خروع
	<i>Lantana camara</i>	Lantana	كَمَارَة شائعة
	<i>Acacia cyanophylla</i>	Orange Wattle	سنط عربي

Plants Number	Average Height	Average Age	Notes
			Numbers in this section are approximate, all plants need high maintenance (staking, pruning, pest and weed control)
60	18 m	27 years	1997
50	5m - 9 m	27 years	Acacia is a highly propagated plant that grows naturally in any site 1997
40	8 m	27 years	1997
3	2 m	naturally grown	Washingtonia is a highly propagated plant that grows naturally in any site
3	1.8 m	naturally grown	
Numbers are approximate			
55		planting started in 2012	age varies
50		planting started in 2012	age varies
40		planting started in 2012	age varies
25		planting started in 2012	age varies
20		planting started in 2012	age varies
15		planting started in 2012	age varies
15		planting started in 2012	age varies
20		planting started in 2012	age varies
275		3 years	planted by the municipality
48		planting started in 2012	age varies
–	–	–	
–	–	–	
–	–	–	
–	–	–	
–	–	–	

Gardens

	Scientific name	Common name	Arabic name
SOUTHEASTERN GARDEN	Trees		
	<i>Acia cyanophylla</i>	Orange wattle	سنط عربي
	<i>Araucaria excelsa</i>	Norfolk Island pine	شجرة الأروكاريا
	<i>Azadirachta indica</i>	Neem tree	النيم الشائع، زنزلخت
	<i>Betula alba</i>	Downy birch	قضبنا فضي
	<i>Ceratonia siliqua</i>	Carob	خروب
	<i>Chamaerops excelsa</i>	Fan palm	نخلة المروج المكسيكية
	<i>Cocos plumosa</i>	Queen Palm	جوز الهند المنجدي
	<i>Cupressus sempervirens</i>	Italian cypress	سرو البحر الأبيض المتوسط
	<i>Delonix regia</i>	Flamboyant or royal poinciana	بونسيانا أو المُنوَهَجَة
	<i>Jacaranda mimosifolia</i>	Blue jacaranda	جكراندا
	<i>Myoporum laetum</i>	Mousehole tree	شجرة ميوبوروم
	<i>Olea europaea</i>	Common olive	زيتون
	<i>Phoenix dactilifera</i>	Date palme	نخلة البلح
	<i>Pinus pinea</i>	Stone pine	صنوبر ثمري
	<i>Populus canescens</i>	Grey poplar	الحدور الرمادي
	<i>Quercus suber</i>	Cork oak	شجرة الفلين
	<i>Washingtonia robusta</i>	Fan palm	نخلة المروج المكسيكية
	Shrubs		
	<i>Agave americana</i>	Century plant	لأغاف أو الصبار الأمريكي
	<i>Bougainvillea glabra</i>	Paperflower	جهنمية
	<i>Euonymus japonicus</i>	Japanese euonymus	شجرة الزعرور الياباني
	<i>Jasminum odoratissimum</i>	Yellow jasmine	الياسمين العطري
	<i>Jasminum officinalie</i>	Jasmine	الياسمين الشامي
	<i>Lantana camara</i>	Lantana	كمارة شائعة
	<i>Myrtus communis</i>	Myrtle	الأس الشائع أو الحمبلاس

Plants Number	Average Height	Average Age	Conditions	Notes
				Note: all plants on peripheries of this zone need mainetencae, there are high regeneration of invasive plants (Lantana, Washingtonia, Opuntia)
12	3 to 12 m	15 years	good	regenerate naturally
4	16 m	15 years	good	
2	7 m	15 years	good	
1	7 m	15 years	good	
39	8 m	15 years	good	
20	1 to 1.5 m	varies	good	regenerate naturally
1	5 m	15 years	good	
3	6m & 10 m	8 years & 15 years	good	age and size vary
1	8 m	15 years	good	
1	5 m	8 years	good	
1	5 m	15 years	good	
46	6 m	15 years	good	
77	10 m	15 years	good	
20	10 m	15 years	good	
1	10 m	15 years	good	
9	18 m	15 years	good	
2	16 m	15 years	good	
1	1.4 m	15 years	good	
220	8 m	15 years	good	
7	1 m	15 years	good	
52	1.25 m	5 Years	good	
61	50 cm to 1 m	8 years	good	need maintenance
53	50 cm	varies	good	regenerate naturally
273	1.5 m	15 years	good	

	Scientific name	Common name	Arabic name
SOUTHEASTERN GARDEN	<i>Nerium oleander</i>	Oleander	الدَّقْلَى
	<i>Opuntia ficus-indica</i>	Indian fig opuntia	لصبار الهندي أو التين الشوكي
	<i>Pittosporum tobira</i>	Japanese pittosporum	شجرة الياسمين اليابانية
	<i>Pyracantha coccinea</i>	Scarlet firethorn	شوك النار القرمزي
	<i>Rosmarinus officinalis prostratus</i>	Creeping Rosemary	إكليل الجبل الزاحف
	<i>Senecio maritimus</i>	Beach senecio	الفصيلة النجمية
	<i>Wisteria floribunda</i>	Japanese wisteria	وستارية كثيرة الأزهار
	Groundcovers		
	<i>Gazania rigens</i>	Treasure flower	زهرة الكنز غزانيا
	<i>Santolina decumbens</i>	Lavender-cotton	قيصوم جبلي
HOTEL GARDEN (Quality Inn)	Trees		
	<i>Acacia cyanophylla</i>	Orange Wattle	سنط عربي
	<i>Araucaria excelsa</i>	House Pine	أروكاريا متغايرة الأوراق
	<i>Azadirachta indica</i>	Neem tree	النيم الشائع، زنزلخت
	<i>Casuarina cunninghamiana</i>	River she-oak	كزواريئة كانينغهامية
	<i>Chamaecyparis obtusa</i>	Japanese cypress	
	<i>Citrus aurantium</i>	Bitter orange	بوصفير
	<i>Delonix regia</i>	Flamboyant or royal poinciana	بونسيانا أو المُمَوَّهَجَة
	<i>Erythrina Caffra</i>	African coral tree	
	<i>Eucalyptus camaldulensis</i>	River red gum	كيننا
	<i>Ficus benjamina</i>	Weeping fig	
	<i>Ficus nitida</i>	Cuban Laurel	فيكس نيتدا
	<i>Ficus stenophylla</i>		
	<i>Jacaranda mimosifolia</i>	Jacaranda	جاكاراندا
	<i>Mangifera indica</i>	Mango	منجا

Plants Number	Average Height	Average Age	Conditions	Notes
13	varies	15 years	good	regenerate naturally
61	2.5 m	15 years	good	
1	1.5 m	15 years	good	
1	1 m	15 years	good	
5	1.2 cm	15 years	good	
32	75 cm	15 years	good	
6	Climber	15 years	good	
groundcover	—	15 years	good	some areas need to be planted more with groundcover
groundcover	—	15 years	good	some areas need to be planted more with groundcover
				Note: the Quality Inn Garden is generally well maintained.
14	5m - 9 m	23 years	good	Acacia is a highly propagated plant that grows naturally in any site
1	8 m	23 years	good	very nice trees
4	7 m	23 years	good	
7	18 m	23 years	good	
6	2 m	23 years	good	
5	3 m	10-15 years	good	
3	8 m	23 years	good	
2	6 m	23 years	good	
33	12 m	23 years	good	
1	5 m	23 years	good	
8	6 m	10-15 years	good	
2	2.5 m	23 years	good	
46	8 m	23 years	good	
2	3 m	10-15 years	good	

	Scientific name	Common name	Arabic name
HOTEL GARDEN (Quality Inn)	Morus rubra	Red mulberry	توت أحمر
	Parkinsonia aculeata	Jerusalem thorn	السنت الشوكي
	Phoenix dactylifera	Date palm	نخلة البلح
	Phoenix dactylifera	Date palm	نخلة البلح
	Pinus canariensis	Canary Island pine	صنوبر كناري
	Pinus pinea	Stone pine	صنوبر مثمر
	Schinus molle	Peruvian pepper	شجرة الفلفل البيروفي
	Thevetia peruviana	Yellow oleander	الثعلبة الصفراء
	Thuja plicata	Western red cedar	عفصية مروحية الطي
	Shrubs		
	Nerium oleander	Oleander	الدَّفْلَى
	Laurus nobilis	Laurel	غار
	Bougainvillea glabra	Paperflower	الجهنمية
	Washingtonia robusta	Fan palm	نخلة المروج المكسيكية
	Pelargonium zonale	Geranium	
	Buxus sempervirens	Boxwood	
	Hibiscus rosa sinensis	Chinese hibiscus	خطمي وردي صيني
NORTH EASTERN GARDEN	Trees		
	Citrus aurantium	Bitter orange	بوصفير
	Olea europaea	Common olive	زيتون
	Olea europaea	Common olive	زيتون
	Morus rubra	Red mulberry	توت أحمر
	Ceratonia siliqua	Carob	خروب
	Shrubs		
	Myrtus communis	Myrtle	الأس الشائع أو الحمبلاس
	Lonicera japonica	Japanese honeysuckle	
	Bougainvillea glabra	Paperflower	الجهنمية
	Opuntia ficus indica	Indian fig opuntia	لصبار الهندي أو التين الشوكي
	Carissa grandiflora	Natal plum	
	Rosmarinus officinalis prostratus	Creeping rosemary	إكليل الجبل الزاحف

Plants Number	Average Height	Average Age	Conditions	Notes
1	4 m	23 years	good	big tree in Collectinve Housing backyard
8	6 m	23 years	good	
25	8 m	23 years	good	
5	12 m	23 years	good	
15	12 m	23 years	good	
66	8 m	23 years	good	
1	4 m	10-15 years	good	
6	2.5 m	23 years	good	
2	3 m	23 years	good	
89	2.5 m	23 years	good	
25	2 m	23 years	good	
7	4 m	23 years	good	
2	1.5 m	10-15 years	good	
18	50 cm	10-15 years	good	
161	30 cm	10-15 years	good	
54	1.2 m	23 years	good	
33	1.2 m	5 years	good	
13	2 m	5 years	good	
7	3.5 m	15 years	good	
2	3 m	15 years	good	
4	2.5 m	15 years	good	
35	1 m	15 years	good	
Climber	–	15 years	good	
74	–	23 years	good	
82	–	23 years	good	
Groundcover	–	15 years	good	
14	50 cm	15 years	good	

	Scientific name	Common name	Arabic name
PERIPHERIES	Trees		
	Casuarina cunninghamiana	River she-oak	كزوارينة كانينغهامية
MODEL RESIDENCE	Trees		
	Erythrina Caffra	African coral tree	
	Azadirachta indica	Neem tree	النيم الشائع، زنزلخت
	Ficus carica	Common fig	تين

Seaward Landscape

	Scientific name	Common name	Arabic name
SEAWARD LANDSCAPE	Trees		
	Phoenix dactylifera	Date palms	نخلة البلح
	Naturally grown plants		
	Arundo donax	Giant reed	قصب
	Rubus fruticosus	Bramble berry	توت عليق
	Ricinus communis	Castor	خروع
	Lantana camara	Lantana	كَمَارَة شائعة
	Acacia cyanophylla	Orange Wattle	سنط عربي

Plants Number	Average Height	Average Age	Conditions	Notes
432	18 m	23 years	good	
1	4 m	–	good	
2	6 m	–	good	
1	4 m	–	good	

Plants Number	Average Height	Average Age	Conditions	Notes
36	12 m	50 years	good	
–	–	–	–	
–	–	–	–	
–	–	–	–	
–	–	–	–	
–	–	–	–	

Appendix 7.

Open-Air Theater:

Assessment of the Arch and Collapsed Soffit

Paul Gaudette and Peter Tarara, May 22, 2023



RKIF Grand Arch and Open-Air Theatre

Tripoli, Lebanon



FINAL REPORT

May 22, 2023

WJE No. 2022.4235.1

PREPARED FOR:

UNESCO Beirut, Lebanon

10 South LaSalle Street, Suite 2600
Chicago, Illinois 60603
312.372.0555 tel



RKIF Grand Arch and Open-Air Theatre

Tripoli, Lebanon

A handwritten signature in black ink, reading 'Paul Gaudette'.

Paul Gaudette
Principal

A handwritten signature in black ink, reading 'Peter Tarara'.

Peter Tarara
Associate Principal

FINAL REPORT

May 22, 2023

WJE No. 2022.4235.1

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APPENDIX A. Grand Arch Analysis Report

APPENDIX B. Fact Report (material testing) report by Advanced Construction Technology Services (ACTS)

APPENDIX C. Petrographic Examination of Two Concrete Cores

APPENDIX D. Survey Sheets

INTRODUCTION

At the request of UNESCO Beirut, Lebanon (UNESCO), Paul Gaudette and Peter Tarara performed a preliminary assessment of the Grand Arch (Arch) and the collapsed area of the Open Air Theatre (OAT) at the Rachid Karami International Fairgrounds (RKIF) in Tripoli, Lebanon (Figure 1 and Figure 2). We understand that this study will form part of the RKIF Conservation Management Plan (CMP) project implemented by UNESCO and made possible with support from Getty through its Keeping It Modern Initiative.

Mahmoud Hachem and Bashar Abdo from Tripoli, Lebanon assisted in the investigation of the Arch and OAT and their analysis of the Arch is summarized in their report attached in Appendix A. Advanced Construction Technology Services (ACTS) in Beirut, Lebanon provided assistance in the investigation, field testing, and laboratory testing of samples, as summarized in their report in Appendix B. WJE performed petrographic examination of concrete samples and summarized the findings in the report provided in Appendix C. Survey sheets from the condition survey are included in Appendix D.

The preliminary assessment of the Arch and collapsed area of the OAT included review of relevant documents provided to the project team, a visual survey, close-up survey of representative areas of the structures, non-destructive evaluation (NDE), laboratory testing, and structural analysis of the Grand Arch. The close-up survey of the Arch was performed from a crane and the collapsed area of the OAT was observed from a ground supported scaffolding.

BACKGROUND AND DESCRIPTION

Constructed in the late 1960s, the OAT generally consists of five major components, which include the seating area, bridge, stage, and Arch, and the surrounding reflecting pool. The seating area for the theatre is the top level of the three-level structure. Based on the original drawings, the middle level was to include bowling lanes, and the lower level was to house bathrooms and mechanical equipment. The collapsed area of the OAT is located on the underside of the top-level seating area.

The Arch spans over a portion of the OAT bridge, into the reflecting pools, and is supported by a reinforced concrete spread footing. The Arch is approximately 33 meters (109 feet) in height. The legs for the Arch are rectangular in plan and reduce in size as they extend upward, meeting at the top to form the Arch. The Arch is a conventionally reinforced cast-in-place concrete structure.

Deterioration of the Arch concrete has resulted in concrete spalls becoming dislodged and falling onto the OAT bridge and reflecting pool. Deterioration at the underside of the OAT has resulted in a collapse of the soffit from the upper-level concrete beams. The Arch and OAT are currently barricaded to prevent access by the public.



Figure 1. Grand Arch and Open-Air Theatre bridge and seating area



Figure 2. Stage of Open-Air Theatre

DOCUMENT REVIEW

UNESCO provided original drawings for the OAT and Arch, with revisions dated 1965 through 1971, for review by the project team. Oscar Niemeyer served as Architect and Dar Al-Handasah was the Consulting Engineer. The drawings provided include Sheets A101-A106, A108-A112, M601, M602, M616, M617, M619, C301, C303-C305, C307-C309, C311-C315, C317-C319, C319A (cancelled), C319B (cancelled), and C320-C324.

Archival photographs taken during construction of the RKIF complex were also provided by UNESCO (Figure 3 through Figure 6).

The original plans and elevations for the OAT, which includes the Arch, illustrates the five major areas of the OAT: the three-level main seating area, bridge, two-level stage, Arch, and the surrounding reflecting pool. The focus of the preliminary assessment was the Arch and collapsed area below the upper level of the OAT shown in Figure 7. An elevation and plan drawing of the Arch and bridge from the original drawings are shown in Figure 8 and Figure 9.



Figure 3. Archival photo of the RKIF construction in progress (Ferdinand Dagher Collection, photo not dated, probably late 1960s)



Figure 4. Archival photo of the OAT and Arch construction in progress (Ferdinand Dagher Collection, photo not dated, probably late 1960s)



Figure 5. Archival photo of the OAT and Arch construction in progress (Ferdinand Dagher Collection, not dated, probably late 1960s)

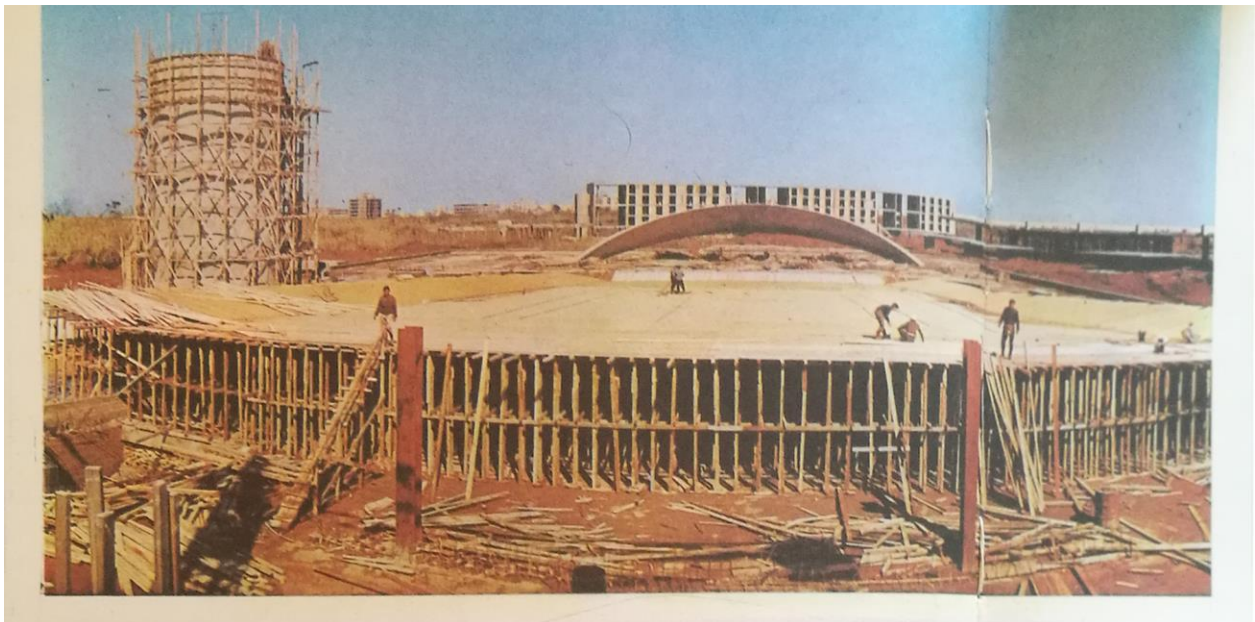
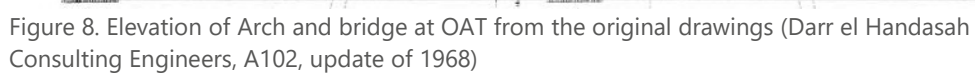
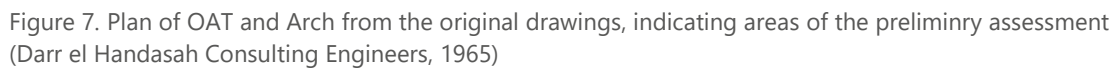


Figure 6. Archival photo of the OAT and Arch construction in progress (Image source: Monde Liaban, mid 1960)



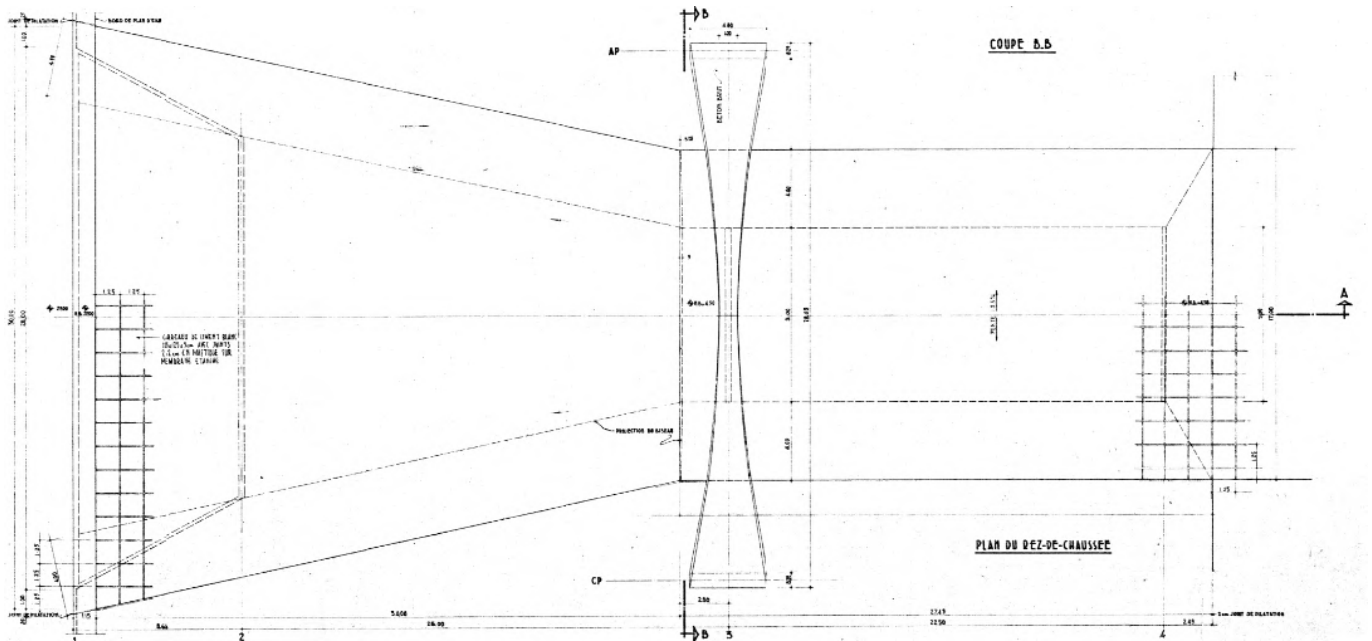


Figure 9. Plan of Arch and bridge at OAT from the original drawings (Darr el Handasah Consulting Engineers, A102, update of 1968)

Arch

Based on review of the historic drawings and photographs, the following is a summary of pertinent information for the Arch:

- The Arch is a conventionally reinforced cast-in-place concrete structure that spans over a portion of the OAT bridge into the reflecting pools and is supported by a reinforced concrete spread footing foundation.
- The height is approximately 33 meters (108 feet) with a base section of 400 centimeters (13.1 feet) by 82.5 centimeters (2.7 feet). The legs for the Arch are rectangular in plan and reduce in size as they extend upward, meeting at the top to form the Arch. The cross section of the Arch narrows to 100 centimeters (3.3 feet) by 40 centimeters (1.3 feet) at the apex of the Arch.
- The compressive strength of the concrete (f'_c) at 28 days was specified to be 210 kg/cm² (3,000 psi) for the Arch footings and 280 kg/cm² (4,000 psi) for the Arch itself.
- The base of the Arch is specified to include No. 10 (32 mm diameter; 1.27 inch diameter) longitudinal reinforcing bars along the perimeter and a second row of No. 10 bars along the short faces as shown in Figure 10. In addition, No. 3 stirrups enclose and tie the No. 10 bars in the long face section at 30 centimeters (12 inches) on center. No. 10 bars along the short face of the section are not enclosed by ties.
- The number of longitudinal bars decreases with the decrease in Arch size as the Arch extends upward, but the layout of bars is similar. A section of the Arch at the top is shown in Figure 11.

OAT Collapsed Area

Based on review of the historic drawings and photographs, following is a summary of pertinent information for the OAT at the collapsed area:

- The OAT upper-level seating area is a conventionally reinforced concrete structure that consists of a reinforced concrete top (seating) slab spanning between beams that vary in depth from south to north. The concrete beams span between concrete girders that are supported by reinforced concrete and steel columns (Figure 12).
- The top (seating) slab and bottom soffit slab enclose the regularly spaced beams, creating voided or box sections (Figure 13 and Figure 14).
- The soffit slab for the upper level, which forms the ceiling of the middle level, is specified to be a 6 cm thick slab (2.4 inch) reinforced with 6 mm (0.2 inch) diameter reinforcing bars spaced at 20 cm (8 inch) on center in both directions and a welded wire reinforcing mesh (Figure 15) The soffit slab spans between the bottom of the concrete beams.
- The compressive strength of the concrete (f'_c) at 28 days was specified to be 280 kg/cm² (4,000 psi).

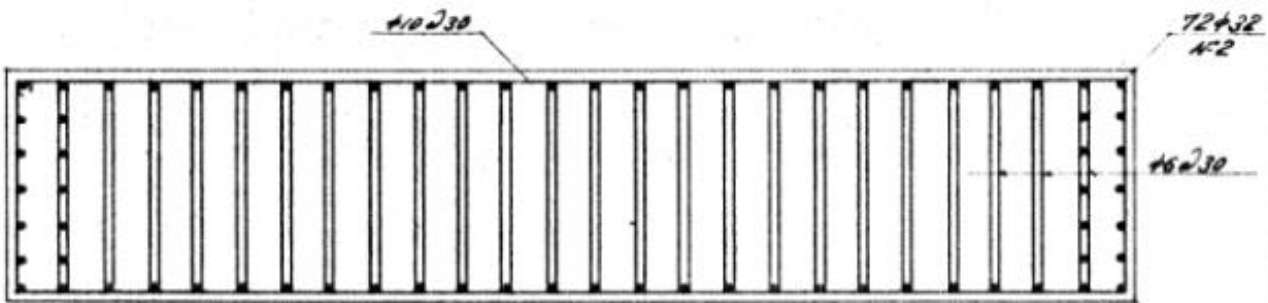


Figure 10. Reinforcing steel specified at the base of the Arch from the original drawings (Darr el Handasah Consulting Engineers, C317, Revision 2, 1969)

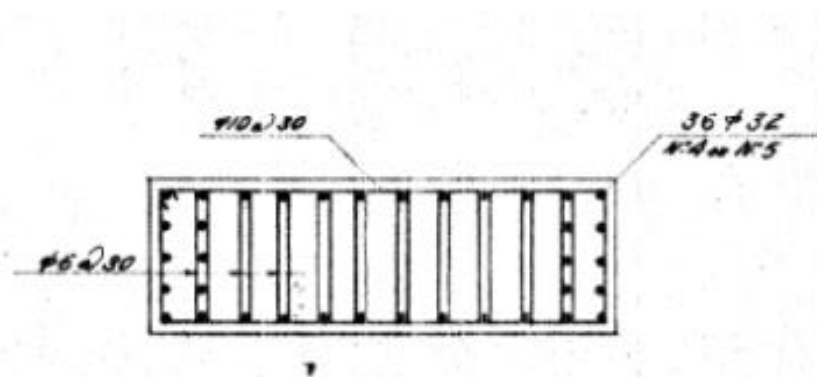


Figure 11. Reinforcing steel specified at the apex of the Arch from the original drawings (Darr el Handasah Consulting Engineers, C317, Revision 2, 1969)

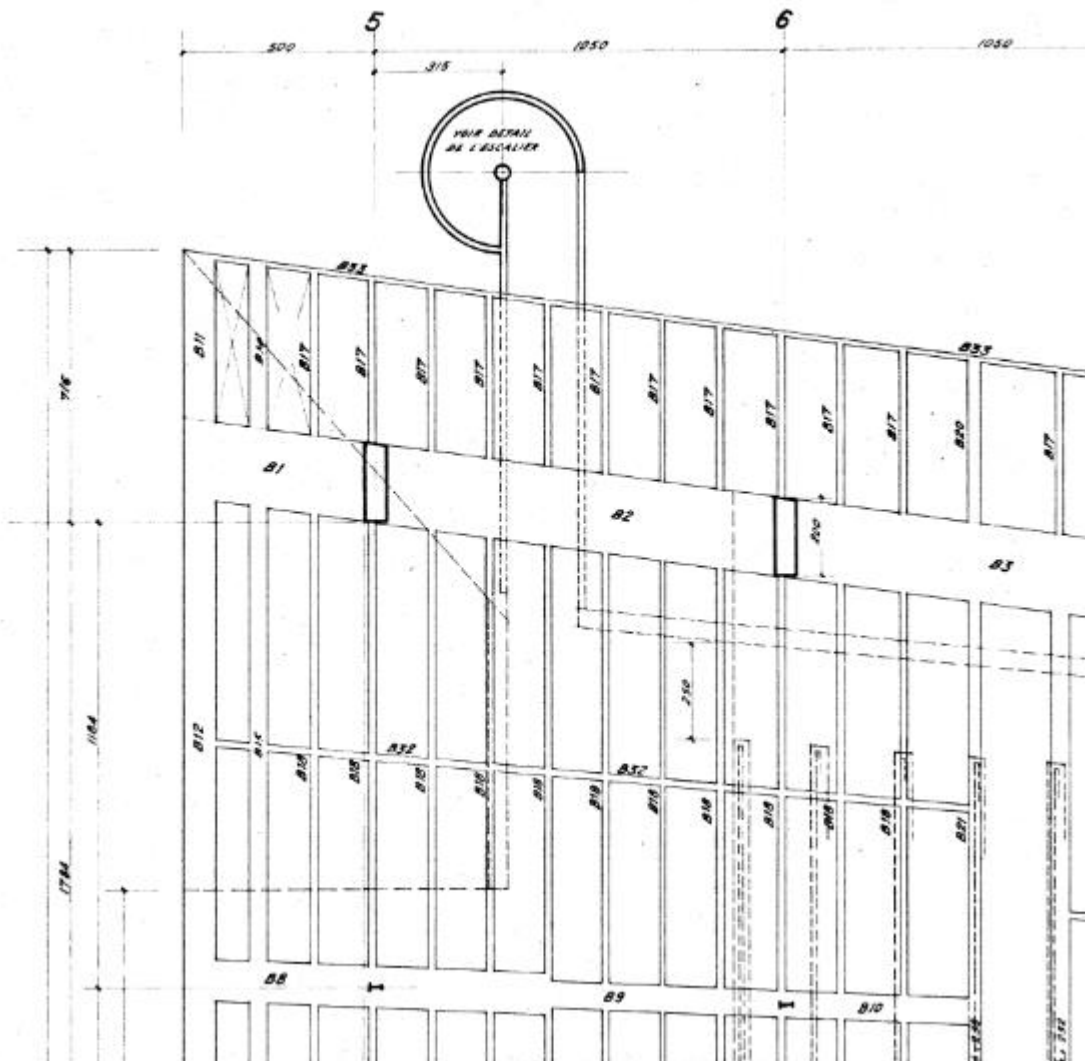


Figure 12. OAT upper-level concrete framing plan from the original drawings in area of collapsed soffit (Darr el Handasah Consulting Engineers, C308, Revision 4, 1969)

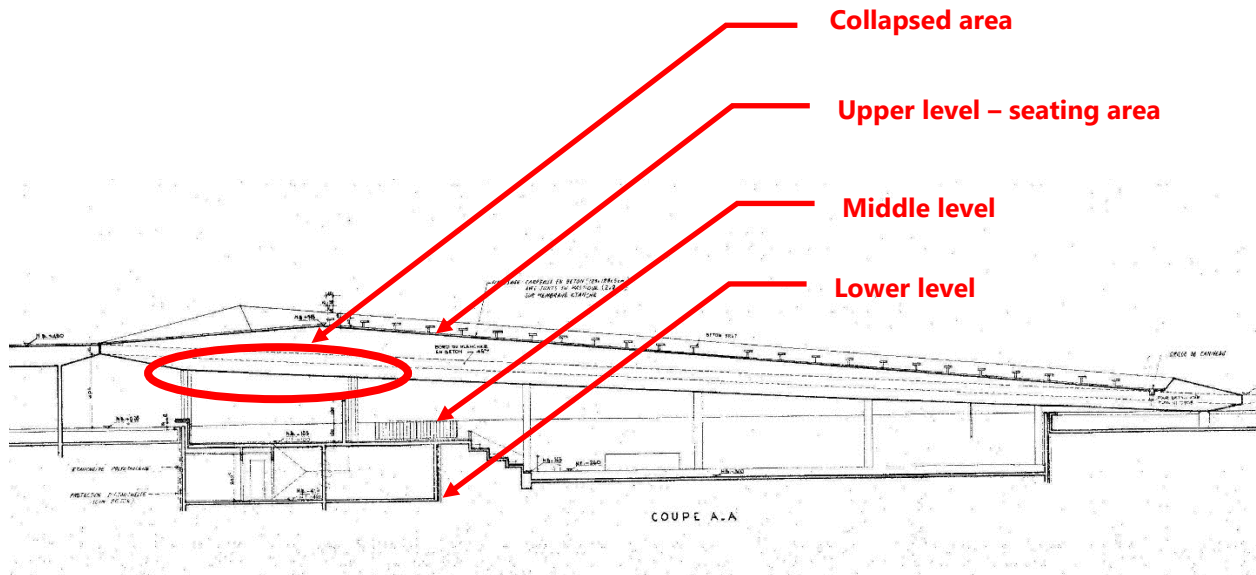


Figure 13. Section through OAT showing area where soffit has fallen circled in red (Darr el Handasah Consulting Engineers, A106, Revision 1968)

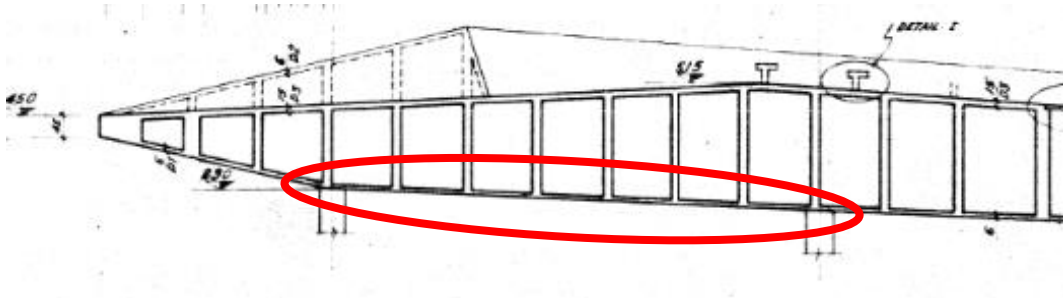


Figure 14. Partial section through OAT showing top and bottom slab with regularly spaced beams (Darr el Handasah Consulting Engineers, C308, Revision 4, June 1969)

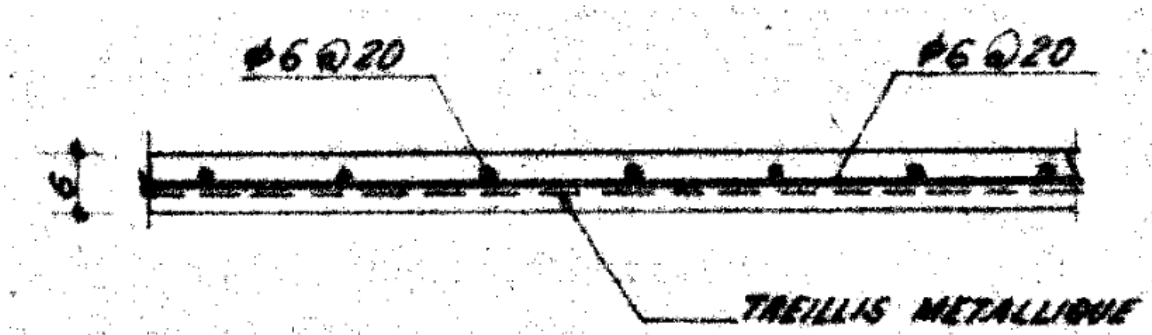


Figure 15. Reinforcing steel specified in the soffit slab from the original drawings. Note that treillis metallique is welded wire reinforcing mesh (Darr el Handasah Consulting Engineers, C308, 1965)

CONDITION SURVEY

The condition survey of the Arch and OAT collapsed area was performed at the RKIF site on June 26 through 28, 2022 (Figure 16 and Figure 17). The survey included a close-up assessment of select areas of the Arch by crane and the OAT collapse area from ground supported scaffold. Inspection openings, concrete core removal and NDE (sound testing, ground penetrating radar - GPR) were performed by ACTS. ACTS also coordinated the crane access to the Arch and the scaffold access to the underside of the OAT seating area.



Figure 16. Arch and OAT condition survey in progress, June 2022



Figure 17. Arch condition survey using crane, June 2022

Arch

Close-up access to the Arch was provided and operated by a crane contractor retained by ACTS. Due to the geometry of the Arch and use of a crane, access was primarily restricted to the outside surfaces and sides of the Arch. The close-up access was utilized to sound test the concrete surfaces, perform GPR work, create inspection openings, and remove concrete core samples from the Arch. The field notes from the condition survey are included on elevation drawings in Appendix D.

During the close-up work from the crane, several areas of spalled and loose concrete became dislodged and fell from the Arch during sounding. We understand the area is presently and will remain barricaded to restrict access.

We noted the following conditions on the Arch during our field observations.

- The Arch was cast in sections or lifts that correspond to construction joints indicated on the original drawings (Figure 18). Observations in the field indicated that more placement lifts (construction joints) were utilized than shown on the original drawings. The original drawings show 7 placement lifts, but approximately 18 lifts were observed.
- Concrete delaminations and spalling were observed at numerous locations on the exterior surfaces of the Arch. These conditions were more severe adjacent to construction joints (Figure 19), at corners often near construction joints (Figure 20), and at reinforcing bar splice locations (Figure 21). Deterioration is more prevalent at splice locations for the reinforcing steel that are coincident with construction joints. Quantity of concrete delaminations and spalls were estimated, as shown on our field sheets (see Appendix D).
- The layout of the embedded reinforcing steel in the inspection openings and where located using GPR appears consistent with the design specified in the original drawings provided for review. Findings from the GRP survey are presented in more detail within the ACTS report in Appendix B.
- Inspection openings at spalled areas reveals:
 - Concrete cover was measured to range from 16 mm (5/8 inch) to 19 mm (3/4 inch) clear distance to stirrups in the Arch and 32 mm (1-1/4 inch) to longitudinal bars. The shallow cover observed was more prevalent in areas of laps for reinforcing steel.
 - Consolidation of the concrete at some construction joints was poor, with honeycombs and void spaces to the level of the reinforcing steel.
 - The embedded reinforcement was conventional deformed steel reinforcing bars. The size and spacing of the No. 10 longitudinal bars and No. 3 stirrups (see Appendix C, ACTS report) were measured and generally found to be consistent with the original construction drawings.
 - Corrosion of embedded steel was observed at areas of deteriorated concrete and poor consolidation. Some moderate section loss was observed on some of the reinforcing bars (Figure 22).
 - Delaminations and spalling of the concrete appear to be primarily related to corrosion of embedded reinforcing steel.
- Previous patches installed on the Arch surfaces primarily consist of a thin layer of mortar that was trowel-applied over an area of honeycombed concrete or concrete deterioration.
- All of the accessible previous patches that were sound tested were determined to be debonded from the original concrete. The previous patches were thin and only extended to the level of the corroded reinforcing steel. Surface preparation of the previous repair did not include removal of concrete material behind the reinforcing steel. The debonded repair material was easily removed by hand or with hand tools.

- An Architectural coating was applied to the exterior surfaces of the Arch. The coating was peeling, blistering, and thin or missing at areas that were more exposed to weather (Figure 23). The coating on the interior, less exposed side of the Arch was in slightly better condition.
- Paste erosion (dissolution of the paste) was observed at the exterior surfaces of the Arch, especially at the top skyward facing surfaces, which resulted in more exposure of some of the coarse aggregate at the surface (Figure 24).



Construction Joint

Figure 18. View of placement lift or construction joint in Arch



Figure 19. Spalled concrete near a construction joint



Construction Joint

Figure 20. Spalled concrete with corroded reinforcing steel at corner of Arch near construction joint



Figure 21. Spalled and delaminated concrete near rebar splice location in Arch



Figure 22. Corrosion of reinforcing bars resulting in section loss, at inspection opening near base of the Arch



Figure 23. Peeling, blistering, and thin or missing areas of coating



Figure 24. Paste erosion at the top of the Arch

OAT Collapsed Area

A large area of the soffit slab has fallen away from the upper-level structure (Figure 25). We understand that the collapsed areas below the upper level are being presently barricaded to restrict access. The restricted access should include all areas below the upper level.

Close-up access to the underside of the OAT seating area was provided by a ground supported scaffold provided by ACTS. The close-up access was utilized to observe existing conditions, perform sound testing of the concrete, and provide access for removal of concrete core and steel reinforcing bar samples. At a few locations surrounding the collapsed area, observations were made above the slab soffit from existing access hole panels in the slab.



Figure 25. Collapsed area of OAT below upper-level with fallen soffit

We noted the following conditions at the OAT collapsed area during our field observations:

- The soffit slab in the area of the collapse was separated from the beams and dropped from the upper-level framing. Adjacent areas of soffit slab are partially collapsed and pulling away from the beams (Figure 26 and Figure 27).
- At the collapsed area, severe honeycombing was observed along the bottom and sides of the beams (above the joint between the soffit slab and beams). At the sides and bottom of the exposed beams, corrosion was observed on the bottom bars and stirrups (Figure 28).
- The construction sequence at the collapsed areas appears to have placed the soffit slab first, followed by placing the beams and upper slab. The sequence created a cold joint between the soffit slab and beams (Figure 28).
- No reinforcing steel between the soffit slab and concrete beams was observed except for some small gauge wire. The bottom of the beam stirrups was at the elevation of the cold joint and did not extend into the soffit slab.

- Spalled concrete was observed at the bottom of beams at several locations (Figure 29 and Figure 30).
- Overpour concrete, likely from placement of the beams, was observed on the top of the soffit slab at many locations, including the location that has fallen (Figure 31).
- Sounding of the soffit slab below the beams for delaminated areas adjacent to the collapsed area and areas away from the collapsed area provided inconsistent results when compared to visual observation.
- Near the shored area of the slab that has not collapsed, east of the collapsed area, separation was observed at the cold joint between the soffit slab and beams. The area was previously shored by others. Observations made above the soffit slab through an access hole panel indicated the slab has displaced downward, leaving a separation of approximately 6 mm (1/4 inch), as shown in Figure 32.



Figure 26. Soffit slab debonded and pulling away from beams



Figure 27. Soffit slab partially collapsed and pulling away from beams



**Location of previous
cold joint between
beam and soffit slab**

Figure 28. Honeycombing and corrosion of reinforcing in beams. Note the beam side of the cold joint between the soffit slab and beams, and stirrups at the bottom of beams.



Figure 29. Spalled bottom of concrete beam and corrosion of reinforcing in beams. Note original formwork that remained in place.



Figure 30. Spalled bottom of concrete beam and corrosion of reinforcing in beams



Overpour concrete

Slab soffit

Figure 31. Overpour concrete, likely from placement of the beams, on the top of the soffit slab



Figure 32. Separation at cold joint between the soffit slab and beam near shored area of slab

STRUCTURAL ANALYSIS BY MAHMOUD HACHEM AND BASHAR ABDO

Structural analysis of the Arch was performed based on the original drawings and laboratory testing. Mahmoud Hachem and Bashar Abdo created a 3D model of the Arch using CSI ETABS V20 and completed a linear analysis in general accordance with ASCE 7-16 considering dead, wind and seismic loads. The analysis did not consider the effects of deterioration on structural performance and the analysis assumed the Arch structure will be repaired and restored to its original condition. We have summarized the analysis report which is included in Appendix C as follows:

- The design check of the Arch was governed by seismic demands.
- The analysis showed that the Arch structure has adequate capacity to meet the required load demands of ASCE 7-16. However, the Arch structure does not meet all detailing requirements in ACI 318-14 for reinforcing bars.
- A detailed analysis of the Arch foundation was not performed. A preliminary check indicates that the Arch structure has an adequate factor of safety against overturning under seismic loads, which is greater than 2.5. However, the overturning check did not consider soil bearing failure.
- A detailed investigation of the Arch foundation was recommended, which may include a field soil investigation and additional analysis to assess the strength of the foundation.

NONDESTRUCTIVE EVALUATION AND LABORATORY TESTING BY ACTS

ACTS performed the following work on the Arch and OAT collapsed area:

- Nondestructive evaluation (NDE) using ground penetrating radar (GPR) at several locations on the Arch to verify as-built conditions and performed half-cell potential measurement to estimate corrosion potential of reinforcing steel (Figure 33 and Figure 34).
- Inspection openings to expose existing conditions and to correlate their results from the NDE studies.
- Coring for concrete sample removal and removal a steel reinforcing bar (Figure 35). ACTS removed ten concrete core samples from the Arch and OAT collapse area during the site work. From the ten cores, eight were retained by ACTS for laboratory studies and two were selected for petrographic analysis by WJE. Seven cores were removed from the Arch (AR-1 to AR-7) and three cores were removed from the OAT (OAT-1 to OAT-3).
- Laboratory testing on concrete samples to determine compressive strength, depth of carbonation, sulfate and chloride content and cement content.
- Laboratory testing of steel sample to determine tensile strength.

ACTS summarized their work in a report included in Appendix C. Core locations are shown on the elevation drawings in Appendix D. We have summarized ACTS report as follows:

- Four concrete sample from the Arch and one concrete sample from the OAT were tested to determine the compressive strength of the concrete. The compressive strength of the Arch cores ranged from 39.1 to 60.5 MPa (5770 to 8780 psi). The compressive strength of the OAT core was 30.7 MPa (4450 psi).

- The rebar sample from the OAT met the requirement of a Grade 40 reinforcing bar in accordance with ASTM A615. The rebar sample met the yield strength requirements of Grade 60 bar, but not the ultimate strength requirements to be considered a Grade 60 bar.
- The chloride content in the Arch concrete samples tested ranged from 0.01% to 0.08% by weight of concrete and from 0.05 percent to 0.40 percent by weight of cement determined by acid soluble testing. According to ACI 222, for reinforced concrete “dry in service,” the maximum chloride limit is 0.20 percent by weight of cement. The chloride content in three Arch samples (AR-1, AR-4, and AR-7) exceeded the limitations of ACI 222. ACTS reported that the chloride content in the concrete will increase the potential for corrosion of the reinforcing steel.
- The sulfate content in the three Arch samples tested is normal, assuming 20 percent cement content is in concrete.
- The pH in the two Arch samples tested was 9.2 and 11.5. Carbonation of concrete reduces the pH. According to ACI 364, the pH in concrete should be in the approximate range between 12 and 13. Therefore, the pH results of the tested samples are lower than the range provided in ACI 364. We interpret this finding to indicate that the pH is likely lower due to carbonation of the concrete.
- The depth of carbonation was measured to range from 16 to 25 mm (0.63 to 0.98 inch) in the two OAT samples and from 7 to 22 mm (0.27 to 0.86 inch) in the Arch samples.
- Half-cell potential measurements were taken to assess the corrosion risk of embedded reinforcing steel in the concrete. The half-cell potential measurements by ACTS indicate a high probability of corrosion occurring at embedded reinforcing steel in the Arch and OAT slab.
- GPR scanning was performed at four locations on the Arch. The spacing of reinforcing bars and layout appeared to be consistent with the original drawings based on our review of the GPR scanning and the inspection opening created.



Figure 33. Nondestructive testing by Ground Penetration Radar (GPR) performed by ACTS on the Arch



Figure 34. GPR scanning by ACTS on the Arch indicated the location of reinforcing steel in the concrete leg

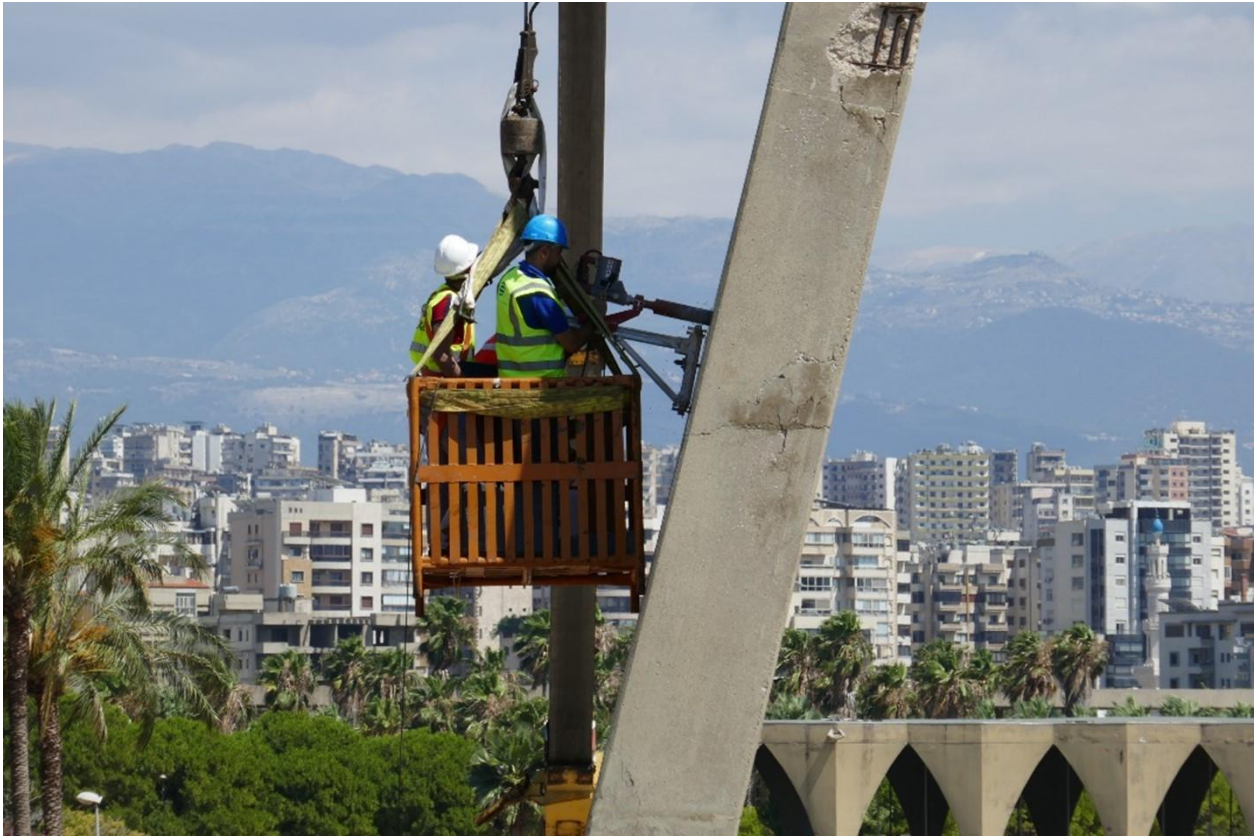


Figure 35. Coring for concrete sample removal at the Arch by ACTS

PETROGRAPHIC EXAMINATION

WJE performed petrographic examination on two concrete core samples, one removed from the Arch and one from the OAT collapse area. The core samples were removed by ACTS during the site work. WJE's laboratory report on the petrographic examination is provided in Appendix C and summarized below.

Arch Concrete (Core AR-2)

The concrete core was extracted from the Arch at a construction joint. The concrete represents one mix that contains crushed limestone coarse aggregate with maximum nominal size of 1.3 cm (1/2 inch) and siliceous and calcareous fine aggregate in a portland cement paste. The concrete has differences in paste color on each side of the construction joint and by dark gray paste stringers. This variability of the hardened concrete in the core sample (primarily differences in the paste color and hardness and aggregate and void distribution) is related to incomplete initial mixing and likely differences in batching between pours.

Despite these variations and the presence of the construction joint, the core remains intact except for one crack that is oriented horizontally and that passes through aggregates, paste-rich regions, and dark gray paste stringers along the interface/construction joint. Carbonation was measured to a depth of 13 mm (1/2 inch) from the exterior surface.

Soffit Slab Concrete (Core OAT-3)

The concrete core was extracted from the collapsed portion of the soffit slab of the OAT and contains two concrete placements. The topping layer concrete is bonded to a 50 mm (1-7/8-inch) thick concrete placement comprising the soffit slab. Textural features along the interface suggest that the soffit concrete was placed prior to the topping concrete (and is consistent with the topping representing overpour material from the beams). The soffit concrete contains compositionally similar constituents to the topping concrete and Core AR-2 concrete, although the aggregate size, aggregate gradation, and portland cement fineness varies. The coarse aggregate is a crushed limestone with lesser amounts of chert with a maximum size of 0.95 cm (3/8 inch) with typical finer particles ranging from 3.2 mm to 4.8 mm (1/8 to 3/16 inch).

The soffit slab is reinforced with 6.4 mm (1/4-inch) diameter reinforcement and smaller diameter welded wire mesh. The depth of paste carbonation from the bottom formed surface has reached the depth of two of the smaller diameter smooth bars. Minor corrosion scale and incomplete paste encasement was observed for the reinforcement intersected by the core. One crack was intersected by Core OAT-3 that passes adjacent to the embedded reinforcement.

The concrete topping layer above the soffit slab is 67 mm (2-5/8-inches) thick and contains similar-sized aggregate and concrete constituents to the Arch concrete represented by Core AR-2. The topping layer concrete consists of crushed limestone coarse aggregate and siliceous and calcareous fine aggregate in a portland cement paste. While some mottling of the paste was observed consistent with incomplete initial mixing, the overall paste color and the aggregate distribution is more uniform in the topping layer compared to the compositionally similar concrete in Core AR-2.

DISCUSSION AND CONCLUSIONS

Arch

The Arch is a conventionally reinforced concrete structure that spans over the bridge entrance to the seating area of the OAT. The original OAT drawings and field observations of the Arch indicate a challenging sequence of construction that included placing concrete for each leg in lifts that meet at the top of the Arch. In addition, the density of reinforcing steel, and changing geometry and orientation of the Arch with height, created another degree of difficulty regarding placement and consolidation of the concrete. The congestion of the reinforcing steel, especially at lap areas, and the changing dimensions of the Arch created areas of low cover.

The cracked, delaminated and spalled areas of concrete observed close-up during the investigation are the result of corrosion of the embedded reinforcing steel. Some of the areas were loose and were removed from the Arch during the survey work. ACTS and WJE's laboratory studies were performed to ascertain whether material conditions conducive to corrosion of this embedded reinforcing were present and whether material components are contributing to the deterioration of the concrete. The WJE petrographic studies did not identify any deleterious components in the concrete materials that are contributing to the concrete deterioration.

Carbonation is a chemical change that reduces the naturally high pH (alkalinity) of concrete over time due to exposure to carbon dioxide in the atmosphere. The pH of concrete is typically around 13. This high pH causes a passivating oxidation layer to form at the embedded reinforcing steel, which protects the steel

from corrosion. Once the depth of carbonation reaches the reinforcement, the steel loses its passivity and will begin to corrode with exposure to sufficient moisture and oxygen. The carbonation depths on the Arch were measured to be greater than the level of the stirrups and longitudinal bars at some locations.

Chlorides in sufficient concentration can break down the passive oxide layer protecting the embedded steel from corrosion. The source of the chlorides in the concrete can be introduced with aggregates, admixtures, cleaning, and proximity to salt water such as the RKIF site adjacent to the Mediterranean Sea. The chloride levels in the Arch concrete at some locations tested were high and likely contributing to the corrosion of reinforcing steel observed.

Carbonation and chloride contamination exhibit a synergistic effect. When both occur in concrete, corrosion frequently occurs at levels beyond what would be expected by one mechanism alone. Appreciably lower levels of chlorides will promote corrosion of embedded reinforcement in carbonated concrete.

As the embedded reinforcing steel corrodes, expansive forces that are created cause the surrounding concrete to crack and delaminate which eventually spalls off the concrete. The majority of the deterioration occurred adjacent to construction joints on the Arch where moisture can more easily penetrate the exterior concrete surface to the level of the embedded reinforcing steel. This moisture penetration into the joints has contributed to the corrosion of the embedded reinforcing steel and concrete deterioration.

In the past, mortar repairs were performed at some areas on the Arch surfaces, most often adjacent to construction joints. Previous patches that were accessible were sound tested which indicated the patches were debonded. The patches were typically thin and placed with using a mortar without coarse aggregate. The patches did not extend beyond the embedded reinforcing steel to achieve mechanically attached repair and relied on bond to the substrate concrete alone.

An Architectural coating was previously applied to the exterior surfaces of the Arch concrete, likely after original construction. The coating has failed in many locations and is past its service life. The coating has worn away over time, and in some cases is not present anymore. We assume that the intent of the concrete coating was to possibly provide a more consistent appearance, cover previous patching, provide water resistance, or all three.

Based on the analysis performed by Mahmoud Hachem and Bashar Abdo, the Arch has adequate capacity to meet current wind and seismic load demands. Additional analysis on the Arch foundations was recommended. We did not see any evidence of settling or foundation movement during our survey.

Based on the investigation and deterioration observed, conservation of the Arch will require repair of the concrete at joints and delaminated and spalled areas. Previous patches should be removed and replaced, as they are debonded. The goal of the repair should be to match the color, finish and texture of the original concrete utilizing similar materials that are compatible with the existing Arch concrete.

OAT Collapsed Area

The collapsed area of the OAT occurred where portions of the upper-level soffit slab had fallen onto the top surface of the middle-level slab. In the collapsed area, some of the soffit had completely fallen away from the beams, while other areas were partially collapsed and hanging. Shoring had been installed

previously by others at various locations in and around the collapsed area, and the area was barricaded with caution tape. We understand the middle level is also barricaded and closed to public access.

The collapsed area revealed the sequence of construction that was used for the upper-level seating framing. The soffit slab was reinforced with steel bars and welded wire mesh and was placed first, with an Architectural board formed finish that was the ceiling of the middle level. Next, formwork was installed for the upper-level beams and slab, and concrete was placed for the slab and beams. The exposed areas in the collapsed area did not reveal reinforcing steel passing between the soffit slab and the upper-level beams, only remnants of formwork ties. The stirrups for the beams did not extend into the soffit slab. The connection between the soffit slab and beams therefore relies exclusively on bond at the cold joint. In some areas, the placement of the beams and upper-level slab resulted in overpour and spillage that added even more dead load to the soffit slab.

The collapsed area also revealed poor consolidation at the bottom of the beams, resulting in severe honeycombing and voids that have left the bottom reinforcement fully exposed in some areas. In addition, the voids would result in less bond area between the bottom of the beams and slab. The condition is probably due to the combination of the large height and narrow width of the beams, and the congestions of the reinforcing steel at the bottom of the beams.

RECOMMENDATIONS

The Arch is an important part of the heritage and cultural significance of the iconic RKIF complex. The approach for the conservation of the Arch should therefore follow international conservation guidelines regarding the repair of historic structures. Conservation approaches should be identified for the overall complex, and repairs developed for the Arch that are consistent with this overall approach. Design implementation of repairs should follow best practices for work on historic concrete. Repair work should first be performed in trials and mock-ups to provide an opportunity for evaluation of the repair process and completed appearance. Repairs should also be tested as appropriate to ensure long term performance.

Immediate Repairs

The Arch and OAT should continue to be barricaded to prevent access by the public. In addition, we recommend removal of loose concrete from the Arch as soon as possible.

For the OAT, we recommend the soffit slab be further evaluated for debonded and loose areas, and shoring be designed and installed to support the soffit slab surrounding the currently collapsed area. Removal of partially displaced, loose and debonded concrete soffit slabs and loose concrete should be performed as soon as possible after shoring is installed. To prevent additional areas of the OAT soffit from collapsing, shoring of the entire upper-level soffit slab should be considered.

Long-term Repairs

A conservation repair program should be developed, designed, and implemented for repair of the Arch and OAT collapsed area. Prior to repairs being performed, a detailed scope of work should be developed, trial and mock-up repairs completed and evaluated, and a set of repair drawings and specifications prepared by a qualified design professional.

The following recommendations are provided as general guidance and are intended for planning purposes only. Prior to repairs being performed on the Arch and OAT collapsed area, a detailed scope of work should be developed, trial and mock-up repairs completed and evaluated, and a set of repair drawings and specifications prepared by a qualified design professional.

Repair recommendations will need to be reviewed with the appropriate government agencies and follow the guidance of:

- ICOMOS ISC20C Approach to Heritage Concrete - https://isc20c.icomos.org/policy_items/complete-innovaconcrete/
- The Getty Institute's Approach to Heritage Concrete - https://www.getty.edu/conservation/publications_resources/pdf_publications/conservation_principles_for_concrete_of_cultural_significance.html

Repairs should follow concrete repair guidelines published by the American Concrete Institute (ACI) - [American Concrete Institute](#).

Arch

As recommended by Mahmoud Hachem, the next step should be to perform an assessment of the foundation for the Arch. Based on the conditions found, then perform a structural analysis.

Prior to implementation of the repair plan, a concrete repair mix should be developed to match the color, finish, and texture of the original concrete. Once a repair concrete has been developed, trial repairs and mock-ups should be performed to evaluate and refine the concrete mix design and repair techniques. Multiple samples of various mixes will be required. Initial small samples should be prepared off-structure and in unobtrusive locations on the RKIF complex, followed by larger mock-ups of selected repair mixes and techniques on the Arch, as needed to achieve a match to the original surface finishing, texture, and color.

During the mock-ups, the constructability of the repairs can be assessed. Performance of the mock-ups is helpful in understanding concealed conditions and provide an opportunity to evaluate the overall appearance and aesthetics of the repairs. The mock-up repairs can also provide information for use in development of the construction documents for the project and assist in establishing estimates of repair costs for overall budgeting purposes. If possible, mock-ups should be performed well in advance of the overall repair project to allow for adequate time for curing, review, and approval of mock-ups.

Arch Concrete Repair Recommendations

Mock-up Phase – perform mock-ups until successful

1. Create a cleaning mock-up on the Arch using the gentlest effective system.
2. Develop a mix design to match the existing concrete in color, finish and texture of the Arch surfaces.
3. Create shop samples of concrete mix, placement and finish techniques in same orientation similar to how actual repair will be performed.
4. Based on shop samples, create field samples to match original concrete color, finish and texture.
5. Develop potential repairs for protection of construction joints, cracks using different repair techniques and colors.

6. Perform trial concrete and construction joint repairs on the Arch to match the original concrete.
7. Perform trial installation of any potential protective treatment being considered for evaluation.

Construction Phase

1. Develop an approach to repair the concrete to match the original concrete as closely as possible.
2. Remove coatings using the gentlest effective system and clean existing concrete surfaces.
3. Based on the mock-up, prepare concrete mix design that is similar in characteristics to the original concrete and will match the color, finish, profile, and texture of the Arch surfaces.
4. Develop repair procedures for the various conditions of concrete deterioration. The procedures should include techniques for careful repair of deteriorated concrete that includes:
 - a. Remove loose concrete.
 - b. Sawcut the perimeter of the repair area.
 - c. Excavate unsound and sound concrete within the repair area beyond the exposed reinforcement.
 - d. Surface preparation of the concrete and exposed reinforcing steel.
 - e. Install formwork to provide a surface that will match the adjacent existing concrete using procedure developed in mock-ups.
 - f. Place repair concrete in formwork and cure.
 - g. Sound test repair areas.
5. Install protective treatment at joints, cracks, or other locations if being used.

OAT Collapse Area

The OAT soffit slabs require further assessment to determine the condition of the OAT soffit that have not collapsed and potential next steps. The as-built conditions of the soffit to beam connections are hidden and therefore difficult to assess. Sound testing was inconclusive as a method to determine the existing condition and bond at the construction joint between the beams and soffit slab. The conditions that resulted in the collapse may exist at other soffit areas of the OAT and possibly at other buildings in the RKIF complex. For the OAT, we recommend that further assessment be performed at areas not collapsed to determine next steps. This can include a series of inspection openings and core removal, as well as NDE techniques to determine the conditions in the soffit slabs. Shoring may be required for some or all of the OAT soffit areas.

Assessment of OAT soffit areas

1. After removal of the loose soffit areas and stabilization of the collapsed area, perform an assessment of the soffit on the underside of the upper-level and other OAT soffit areas to determine existing conditions. The scope of work is anticipated to include a series of inspection openings and core removal, as well as NDE techniques.
2. Based on the findings of the assessment, develop repair options for the OAT soffit repairs.
3. Repairs may include:
 - a. Shoring of some or all of the OAT soffit areas.
 - b. Reconstruction of the soffit slab anchored to the existing beams at the collapsed area and possibly other areas of the OAT soffit.

- c. Repairs to the beams with severe honeycombing or concrete deterioration.
- d. Pinning the existing soffit slab to the beams with dowels.
- e. Removal and replacement of sections or the entire soffit slab.

APPENDIX A. GRAND ARCH ANALYSIS REPORT



Grand Arch Analysis

Rachid Karami International Fair, Tripoli, Lebanon

Final Report

Prepared by: Eng. Mahmoud Hachem, PhD, SE
Eng. Bashar Abdo

1 February 2023

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Introduction

The Grand Arch, located at Rachid Karami International Fair, was designed by Oscar Niemeyer and constructed in the late 1960s. The arch, which measures 33-meters in height, is considered a major part of the Open-Air Theatre (OAT). The arch legs, which are supported at the base by isolated footings consist of rectangular sections measuring 400 cm by 82.5 cm at the level of the reflecting pool, and taper down with height to a size of 100 cm by 40 cm at the top of the arch.

This study was Commissioned by UNESCO Beirut Office on 24 June 2022. The scope of this study consists of:

1. **Site investigation:** Field investigation took place on June 27 and 28, 2022. The team which consisted of Paul Gaudette, Peter Tarara, Mahmoud Hachem and Bashar Abdo, inspected the arch at all elevations using a crane, inspected the collapsed ceiling in the OAT, and oversaw the collection of concrete cores for testing from the Arch and OAT. The field investigation helped the team gain a better understanding of the condition of the arch and OAT. The detailed description and analysis of site observations and testing results are provided in a separate report.
2. **Structural Analysis:** Performed a detailed structural analysis and structural evaluation of the Arch to determine its compliance with existing codes and its expected performance under gravity, wind and earthquake loads. This report documents the results of this study. The current study focuses on the analysis of the Grand Arch, with the purpose of developing a deeper understanding of the arch behavior under wind and seismic loads, that will be valuable in future efforts to preserve and restore the arch.

This report presents the results of the structural analysis and design check study performed for the Grand Arch. A linear analysis was performed per ASCE 7-16, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures*, that considers dead, wind and seismic loads on the structure. The report describes the modeling assumptions, which include the geometry of the arch, material properties, and other modeling details, and presents a summary of the analysis results and the conclusions of the study.

Model Geometry

In order to model the arch geometry, we relied on three data sources:

- Dar Al-Handasah (Shair & Partners) drawing ("OAT0003.dwg") prepared in December 1994
- 3D Arch model prepared by Joe Kallas for UNESCO (Figure 1 & Figure 2) – 2022
- Field measurements and data collection – 2022

The arch thickness and length were measured from the 3D Arch model (Figure 1 & Figure 2) and verified with information available in the drawings prepared by Dar Al-Handasah and from field measurements. The width of the arch was not available in any of the available drawings, so the width was measured from the 3D Arch Model using MeshLab and verified with field measurements.

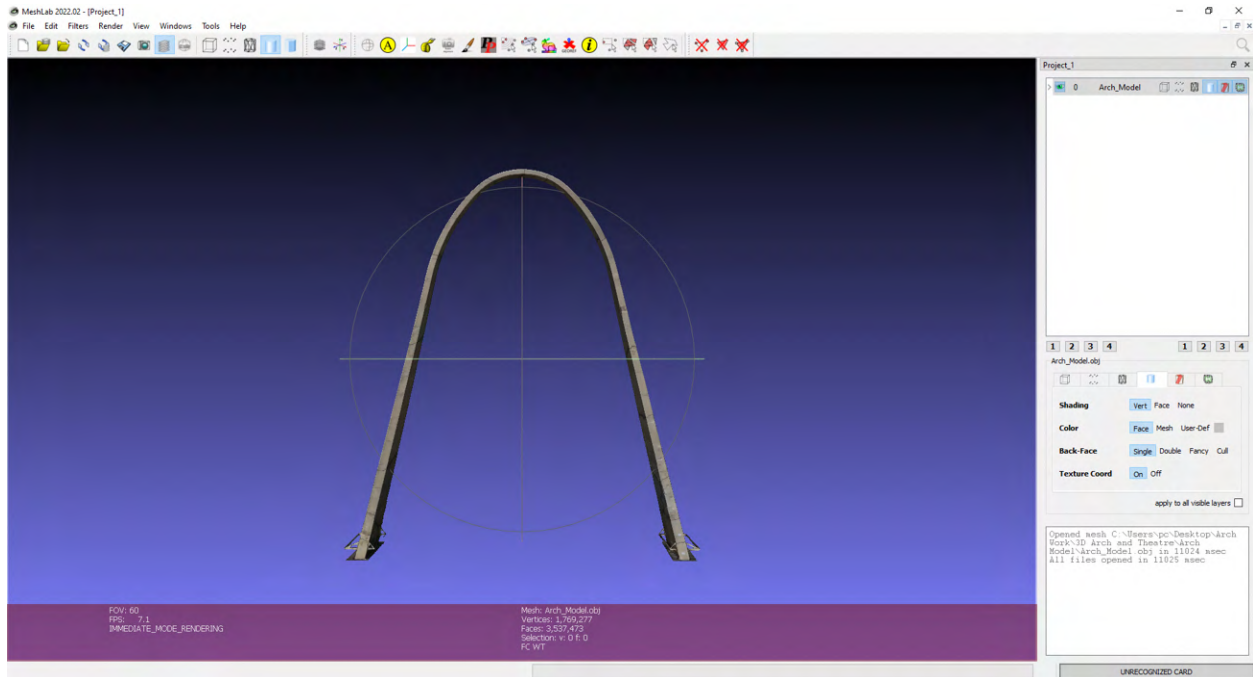


Figure 1: 3D model of Grand Arch

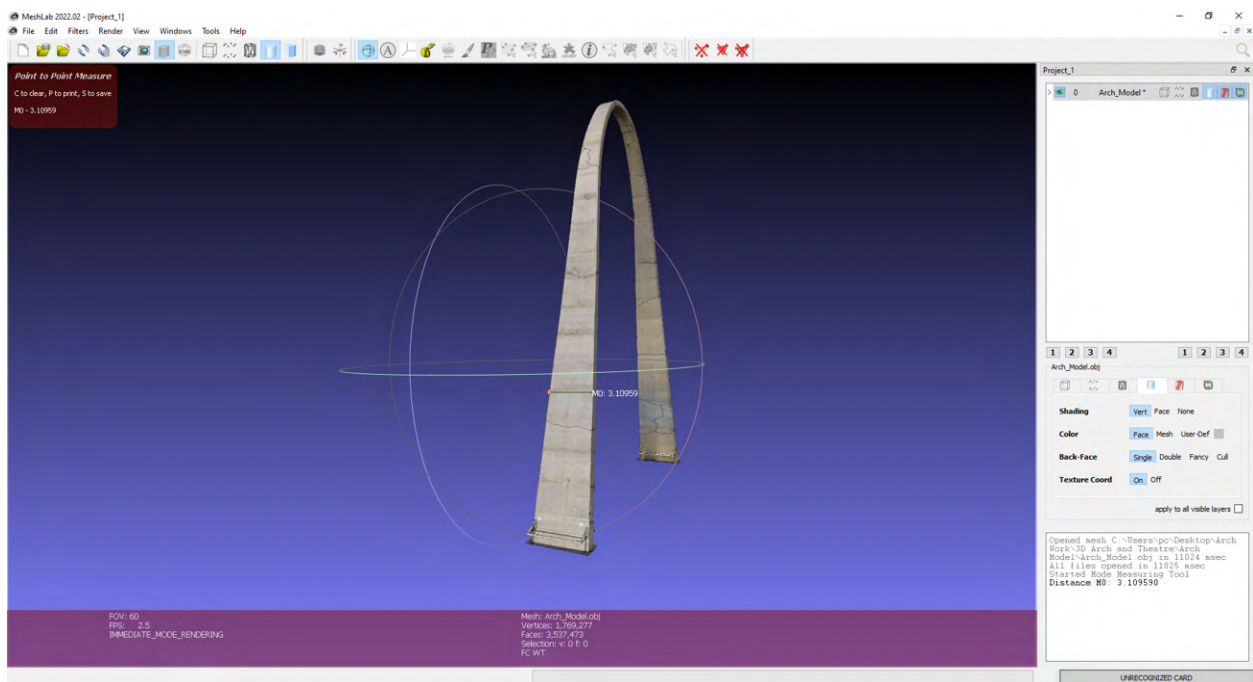


Figure 2: Arch width measurement from the 3D model

Material Properties

During the preliminary assessment and field work that occurred on June 26-28, 2022, concrete core samples were removed from the arch for testing. Also, a rebar sample was removed from the deep beams in the OAT. Strength tests were performed by ACTS, a certified material laboratory in Lebanon. A total of four concrete samples were tested under compression and all resulted in a compressive strength higher than 40 MPa (5.8 ksi), see Appendix A. Per Dar Al-Handasah drawings (L64/4 C316-2), the specified concrete compressive strength was 280 kg/cm^2 , equivalent to 27.5 MPa. Per ASCE 41-17, *Seismic Rehabilitation of Existing Buildings*, the factor to translate lower-bound material properties to expected strength material properties is 1.5. As a result, the expected compressive strength is 41.25 MPa. As a conservative assumption, we used 40 MPa concrete compressive strength in the model. Although the testing report indicated that the measured rebar yield stress was 425 MPa, the measured ultimate strength did not meet the requirements of Grade 60 rebar. So, a rebar yield strength of 275 MPa (40 ksi) was used in this study as recommended in the tensile test report (Appendix B).

Grand Arch Structural System

The reinforced concrete arch structure acts as both the vertical and lateral force resisting system. The seismic force-resisting system assumed for the Grand Arch is a cantilever system conforming to Ordinary Moment Frame (OMF) in both horizontal directions (Longitudinal-X and Transverse-Y). Lateral system parameters, R, Omega, Cd and Importance Factor (Ie) were chosen consistent with ASCE 7-16, Table 12.2-1 as shown in Table 1. Note that under current code, those systems are not allowed for new structures in regions of high-seismicity but are considered the closest representation of the current structural system. We also checked compliance of the structure with the detailing requirement of more ductile systems in order to evaluate the level of seismic detailing and ductility of the existing structure.

Table 1: Seismic Force-Resisting System

Direction	Longitudinal-X	Transverse-Y
Lateral System	Cantilever Column (OMF)	Cantilever Column (OMF)
R	1	1
Omega	1.25	1.25
Cd	1	1
Ie	1	1

Analysis Model

A structural model was constructed in CSI ETABS V20 (Figure 3 and Figure 4) and was used to model the Grand Arch and calculate the structural demands. Figure 3 presents the global and local coordinate systems. The local coordinate system corresponds to the element local axes. The arch geometry consists of two legs with a tapering cross-section over the height, which was modeled using non-prismatic beam-column elements. To properly assign these sections, a total of 13 stories (Figure 29) were defined in which the sections span in between. Note that Arch cold joints were not included in the model.

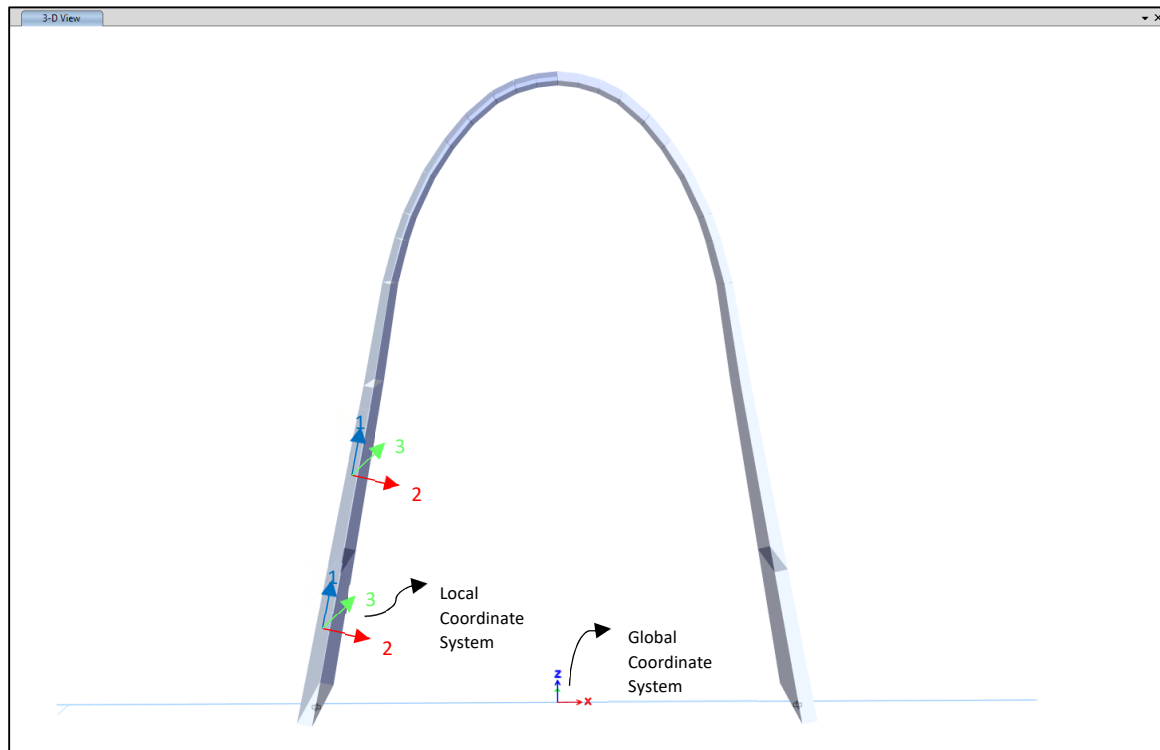


Figure 3: ETABS model – X-Z elevation view 1

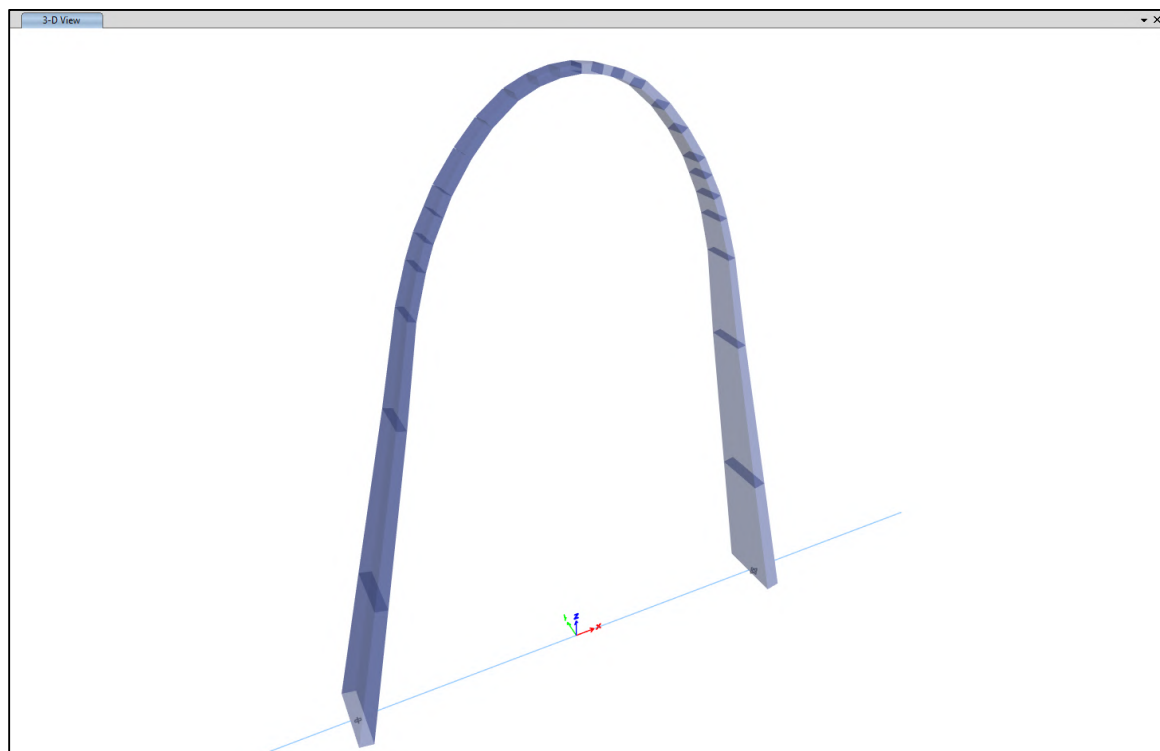


Figure 4: ETABS model – isometric view 2

The arch was modeled assuming cracked conditions where stiffness modifiers were applied to each section thus reducing its stiffness. The axial force levels in the arch legs were generally low (<5%). Moment of inertia in both directions and torsional stiffness modifiers of 0.5 value were assigned to the structural elements. This value was taken as halfway between the ACI recommended values of 0.7 for columns and 0.3 for beams. While a value of 0.3 could have been used because of the low axial loads, the modifier of 0.5 was conservatively selected since it would result in a shorter period and hence larger seismic demands than that obtained with a modifier of 0.3. The structure was analyzed under its weight, wind loads in both directions, and static and dynamic seismic loads in both directions.

Loads

The loads that were considered in the analysis are as follows:

- Dead (Self-weight)
- Wind Load
- Seismic Load (Static and Dynamic)
 - EQX+: Static force in the positive X-direction
 - EQX-: Static force in the negative X-direction
 - EQY+: Static force in the positive Y-direction
 - EQY-: Static force in the negative Y-direction
 - SPECX: Dynamic force in the X-direction
 - SPECY: Dynamic force in the Y-direction
 - SPECXY: Dynamic force in X- and Y- directions simultaneously
- Live load was not considered

Wind Loads

There is no specific wind speed design value in Lebanon. 100-mph (3-s gust wind) is an upper limit (likely very conservative) wind speed that is frequently used in engineering practice. The following wind load parameters were assumed:

- Wind speed: 100 mph
- Exposure: C
- K_d, wind directionality: 1
- K_e, Ground Elevation Factor: 1
- K_z, velocity pressure exposure coefficient: 1.3
- K_{zt}, topographic factor: 1

Seismic Loads

Figure 5 shows the 2% in 50-year probabilistic response spectrum of Tripoli City, which has a return period of 2,475 years (Huijjer et al., *Re-evaluation and updating of the seismic hazard of Lebanon*, 2015).

From the spectrum, S_{M5} and S_{M1} values were graphically estimated in order to build the design response spectrum for use in the model.

Since a seismic soil investigation for the site was not available, this study assumes the default Soil Class D, as allowed by ASCE 7-16, Section 11.4.3.

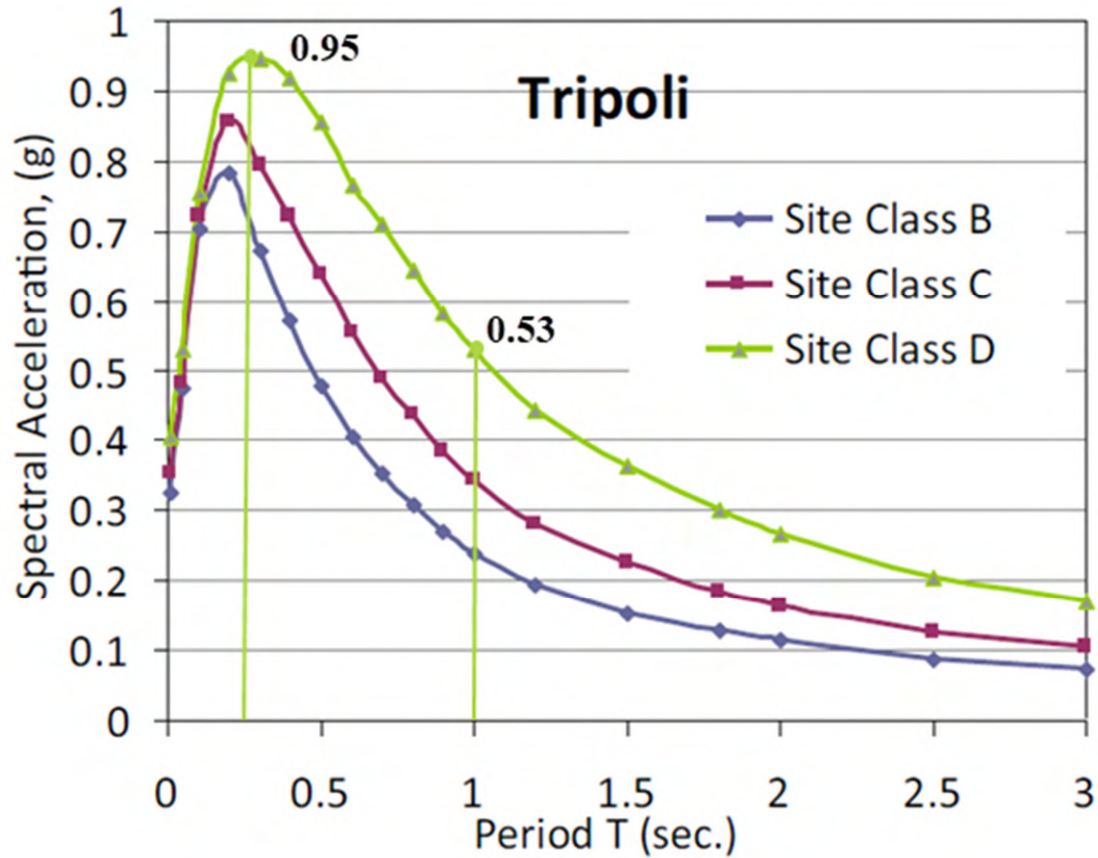


Figure 5: 2% in 50-year probabilistic response spectrum (MCE) for Tripoli

Table 2 shows the characteristics of the response spectrum that was defined in the model:

Table 2: Seismic hazard parameters

S_{M5}	0.95 g
S_{M1}	0.53 g
S_{D5}	0.63 g
S_{D1}	0.35 g

According to ASCE 7-16, the structure is assigned a Seismic Design Category D, which is defined as $S_{D5} > 0.5g$ or $S_{D1} > 0.2g$.

Two response spectrum load cases in X and Y directions were defined in the model, depending on the structural system coefficient. The response spectrum scale factor that was used equals to $(I \times g) \div R$.

Load Combinations

The structure was analyzed under factored loads per chapter 2 of ASCE 7-16. The considered load combinations are as follows:

- ASCE 7-16 Section 2.3.1: 1.4 Dead
- ASCE 7-16 Section 2.3.1: 1.2 Dead \pm Wind Load
- ASCE 7-16 Section 2.3.1: 0.9 Dead \pm Wind Load
- ASCE 7-16 Section 2.3.6: 0.9 Dead $- 0.2S_{DS}$ *Dead \pm Static Seismic Load
- ASCE 7-16 Section 2.3.6: 0.9 Dead $- 0.2S_{DS}$ *Dead + Dynamic Seismic Load
- ASCE 7-16 Section 2.3.6: 1.2 Dead + 0.2 S_{DS} *Dead \pm Static Seismic Load
- ASCE 7-16 Section 2.3.6: 1.2 Dead + 0.2 S_{DS} *Dead + Dynamic Seismic Load

As a result, the following combinations were used in the model:

LC 1.	1.4 Dead
LC 2.	1.2 Dead \pm Wind X_Dir
LC 3.	1.2 Dead \pm Wind Y_Dir
LC 4.	0.9 Dead \pm Wind X_Dir
LC 5.	0.9 Dead \pm Wind Y_Dir
LC 6.	1.326 Dead \pm EQX
LC 7.	1.326 Dead \pm EQY
LC 8.	0.774 Dead \pm EQX
LC 9.	0.774 Dead \pm EQY
LC 10.	1.326 Dead \pm SPECX
LC 11.	0.774 Dead \pm SPECX
LC 12.	1.326 Dead \pm SPECY
LC 13.	0.774 Dead \pm SPECY
LC 14.	1.326 Dead \pm SPECXY
LC 15.	0.774 Dead \pm SPECXY

Where the factor **1.326** is equivalent to “1.2 Dead + 0.2 S_{DS} ” and **0.774** equals “0.9 Dead $- 0.2S_{DS}$ ”.

Analysis Results

Lateral Static Analysis

A linear static analysis was performed per provisions of ASCE 7-16, using the Equivalent Lateral Force (ELF) procedure in section 12.8, to obtain base shear demand, base shear coefficient, drifts and P-Delta applicability. Also, the linear static analysis base shear was calculated and used to amplify the dynamic base shear according to ASCE 7-16, section 12.9.2.5.2. The static base shear was calculated using the dynamic model's predominant (first) period in each direction (see following section). However, ASCE 7-16, section 12.8.2 which caps the period determined analytically, was not applied since this section is

primarily intended to be used for new design. Since this study aims to study the behavior and performance of an existing structure, applying this section is considered unjustified. For example, ASCE 41-17, which is the standard for evaluation of existing buildings does not impose any period upper limits, specifically, Section 7.4.1.2.1 states: “*Contrary to procedures in codes for new buildings, there is no maximum limit on period calculated using Method 1. This omission is intended to encourage the use of more advanced analyses.*”

Dynamic Analysis

The dynamic behavior is the response of the arch under dynamic loading due to earthquakes. Using linear dynamic analysis, we were able to obtain the response spectrum drifts, mode shapes and base shears. The mode shapes show the deformation of the structure when vibrating at a particular natural frequency. A total of 16 modes were required to obtain at least 90% of the modal mass participation ratio in each direction. Selected arch mode shapes and their modal mass contributions are shown in the figures below. Figure 7 and Figure 8 show the 1st and 2nd translational modes in the X-direction, Figure 9 and Figure 10 show the 1st and 2nd translational modes in the Y-direction, and Figure 11 shows the rotational mode. P-Delta effects were not considered in the model since the calculated stability coefficient was less than 10% per ASCE 7-16 section 12.8-16.

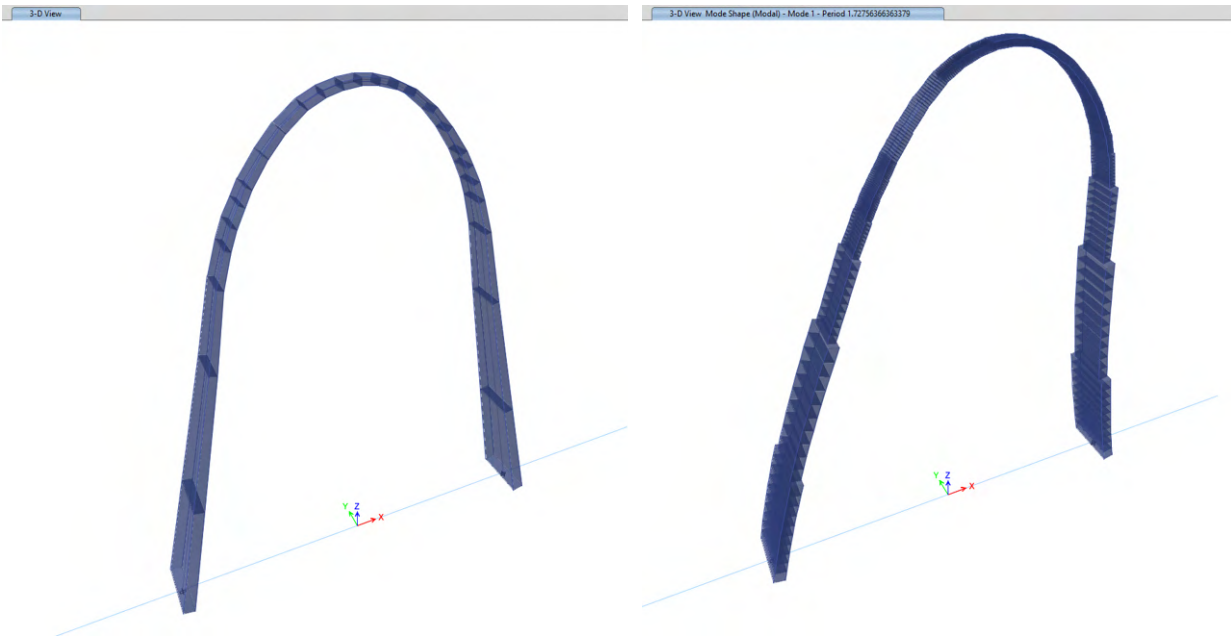


Figure 6: Undeformed shape

Figure 7: Mode 1 ($T=1.73s$, $UX=0.63$)

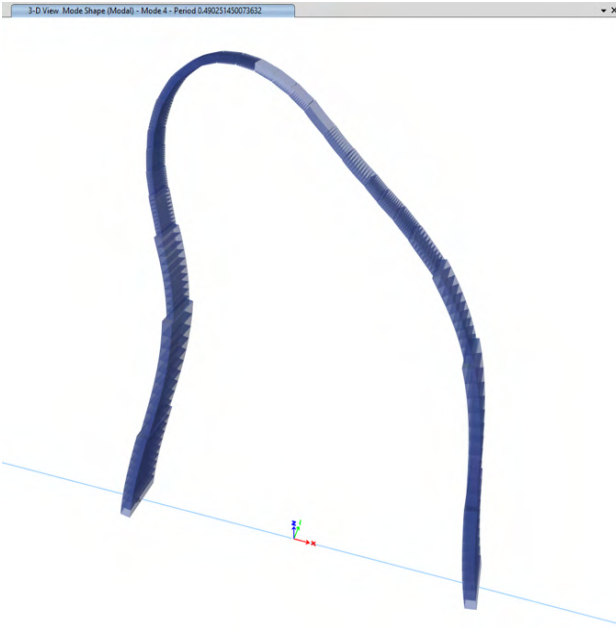


Figure 8: Mode 4 ($T=0.49s$, $UX=0.17$)

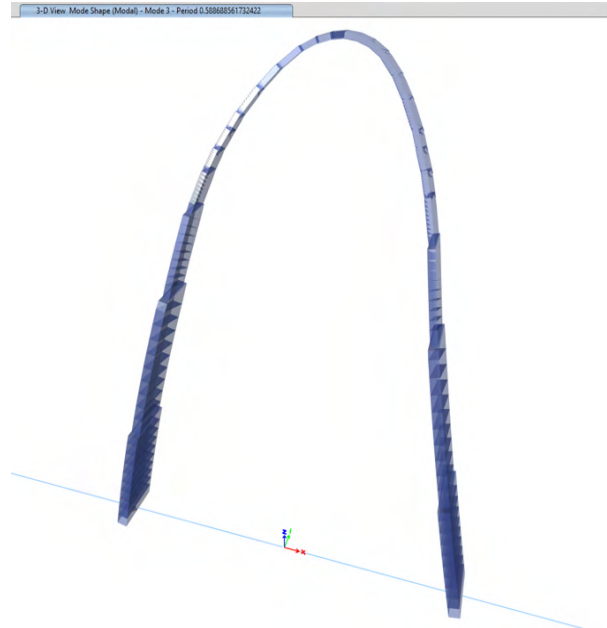


Figure 9: Mode 3 ($T=0.60s$, $UY=0.43$)

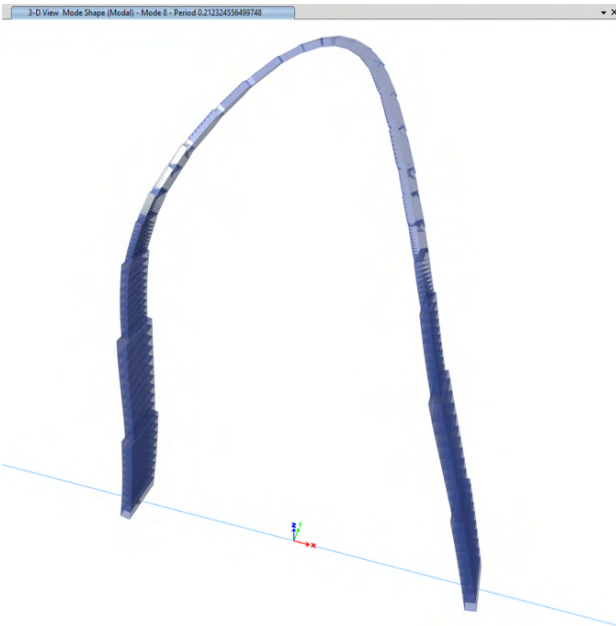


Figure 10: Mode 8 ($T=0.21s$, $UY=0.24$)

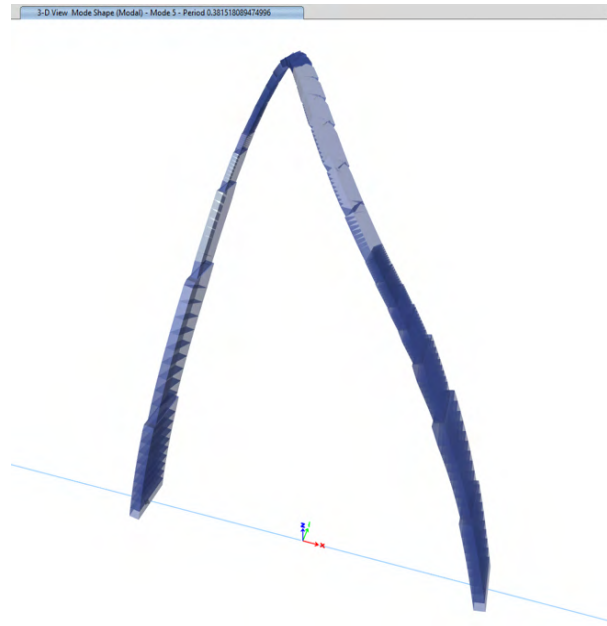


Figure 11: Mode 5 ($T=0.38$, $RZ=0.41$)

Base Shear

The base shear is the total lateral force at the base of the structure. It was computed in both directions to obtain the lateral forces. Both static and dynamic base shear were obtained. The total effective seismic weight was calculated as 1937 kN. As per ASCE 7-16 requirements, the dynamic seismic base shear was amplified to be at least 100% of the static seismic base shear. The dynamic base shears in the

X and Y-directions were amplified by 3% and 46% respectively. As a result, the resulting seismic base shear coefficient is 0.21 for the X-direction and 0.60 for the Y-direction under lateral static and dynamic analysis cases. Table 3 shows the static and dynamic base shears and moments in addition to the effective seismic height ($H_{eff,x}$ and $H_{eff,y}$) for the entire structure.

Table 3: Base shear results

Load Case	Vx	Vy	MX	MY	$H_{eff,x}$	$H_{eff,y}$
	kN	kN	kN-m	kN-m	m	m
EQX	413	0	8,881	0	21.5	
EQY	0	1,162	0	22,775		19.6
SPECX (not amplified)	405	0	5,680		14.0	
SPECY (not amplified)	0	634		12,926		20.4
SPECX	417	0	5,841	0	14.0	
SPECY	0	1,165	0	23,761		20.4
SPECXY (not amplified)	405	634	5,680	12,926	14.0	20.4
SPECXY	417	1,165	5,841	23,761	14.0	20.4
WindX	299	0	3,848	0	12.9	
WindY	0	77	0	1,152		15.0

Leg Base Reactions

Table 4 presents the maximum forces and moment base reactions due to gravity, wind and seismic load cases for a single leg along the global coordinates (x, y, z).

Table 4: Leg Reactions

Load Case	FX	FY	FZ	MX	MY	MZ
	kN	kN	kN	kN-m	kN-m	kN-m
Dead	70	0	1,277	0	1,450	0
EQX	208	0	92	0	3,190	0
EQY	0	581	0	11,388	0	2,717
SPECX	208	0	67	0	2,338	0
SPECY	0	582	0	11,881	0	2,864
SPECXY	208	582	67	11,881	2,338	2,864
WindX	149	0	32	0	1,709	0
WindY	0	38	0	640	0	154

Drifts & Displacements

The arch sections are modeled at different elevations as stories. The story drifts were computed as the difference of deflections at the top and bottom of each story under consideration. Using elastic analysis, the maximum story drifts under the dynamic seismic loads were obtained for both directions (Figure

12). Per ASCE 7-16 Section 12.8.6, the resulting drifts should be amplified by the deflection factor, C_d , and divided by the importance factor I_e . Since the deflection and importance factors are both equal to 1, the drifts were obtained directly and compared to the drift limit. The maximum drifts in both directions did not exceed the allowable drift (2%) per ASCE 7-16 table 12.12-1. The earthquake and wind displacements are shown in Figure 13 and Figure 14, which show that earthquake displacements were significantly higher than the wind displacements.

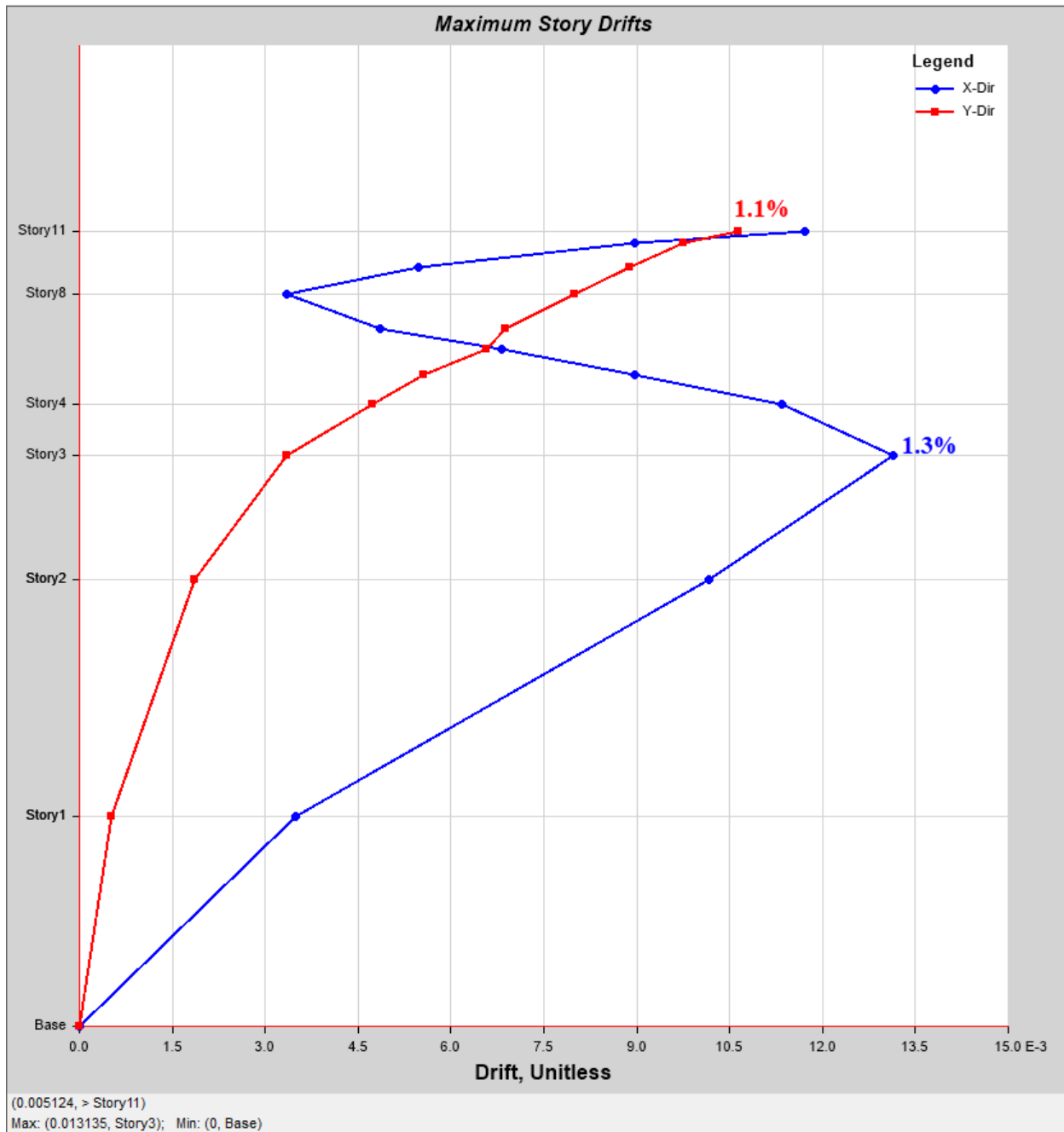


Figure 12: Earthquake interstory drifts in both directions (SPECX and SPECY load cases)

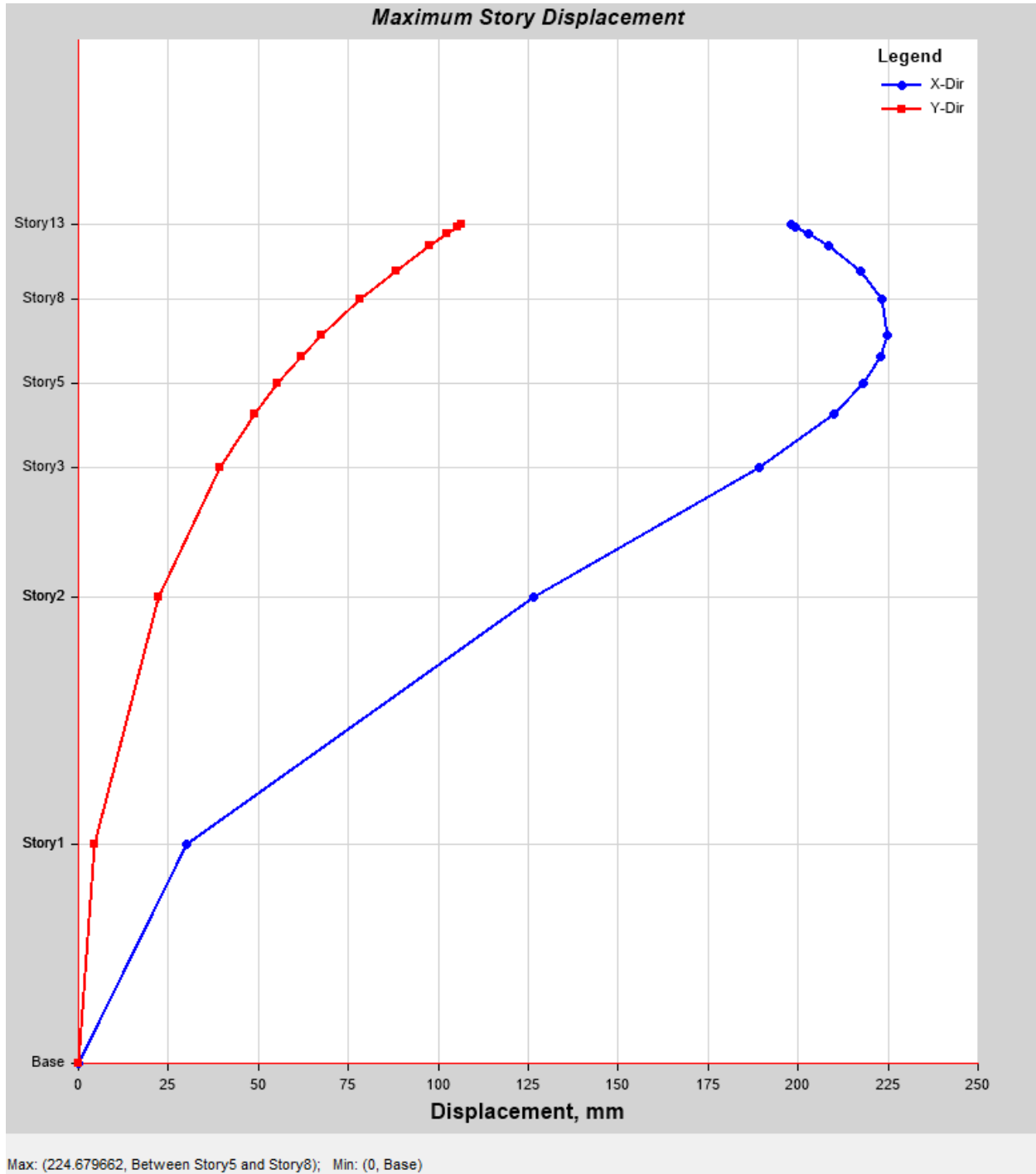


Figure 13: Earthquake displacements in both directions (SPECX and SPECY load cases)

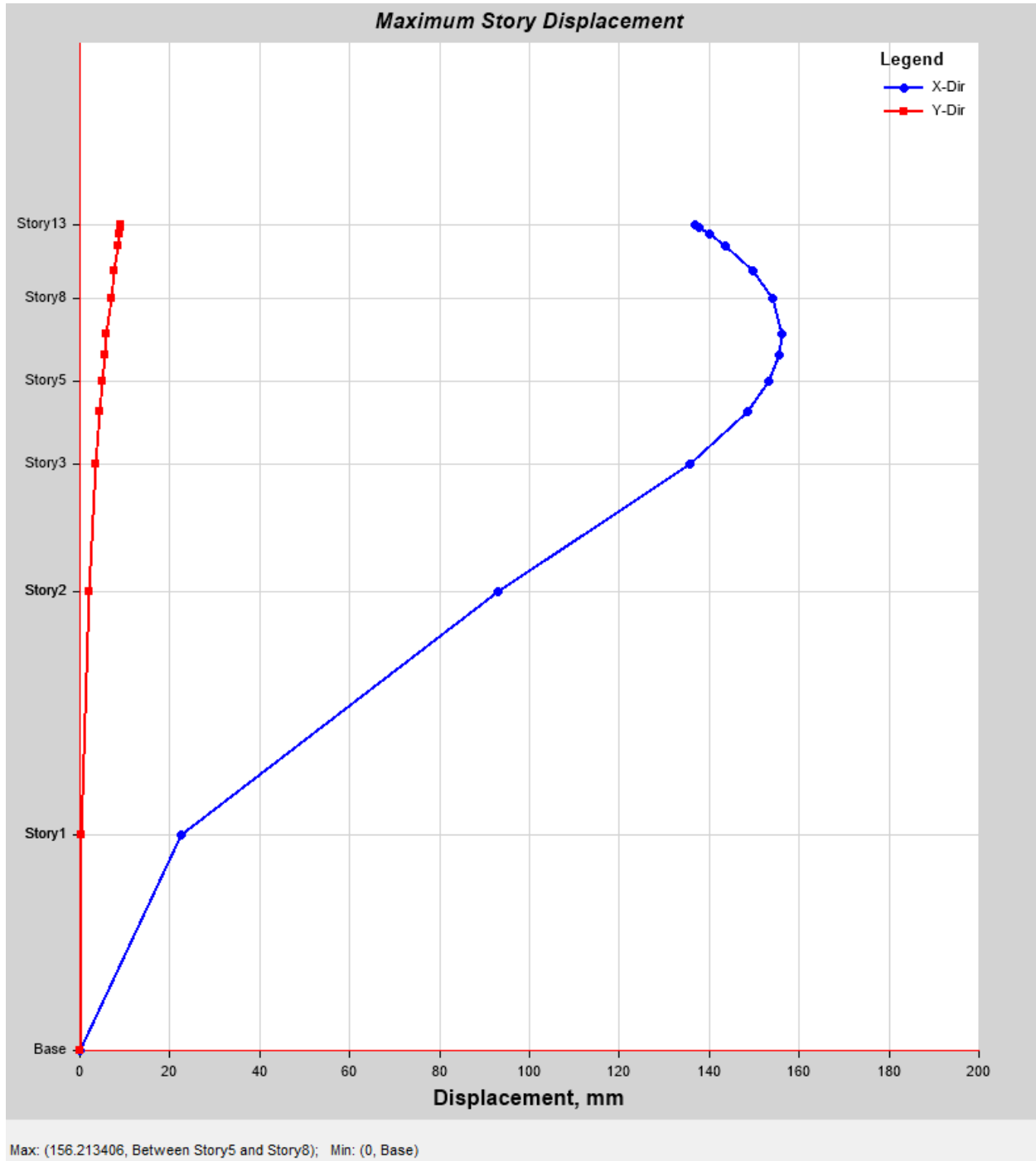


Figure 14: Wind displacements in both directions (WindX and WindY load cases)

Moment and Shear Diagrams

The story moments and shears are presented in Figure 15 to Figure 21. The maximum overturning moments are recorded at the bottom of the arch, and the moment tends to decrease with height reaching a value of zero at the top of the arch. Figure 22 and Figure 23 compare the wind and

earthquake shear and moment demand forces along the element local axes, respectively, and show that seismic forces control in both directions.

The positive and negative moments (and shear forces) are equal due to the symmetry of the arch.

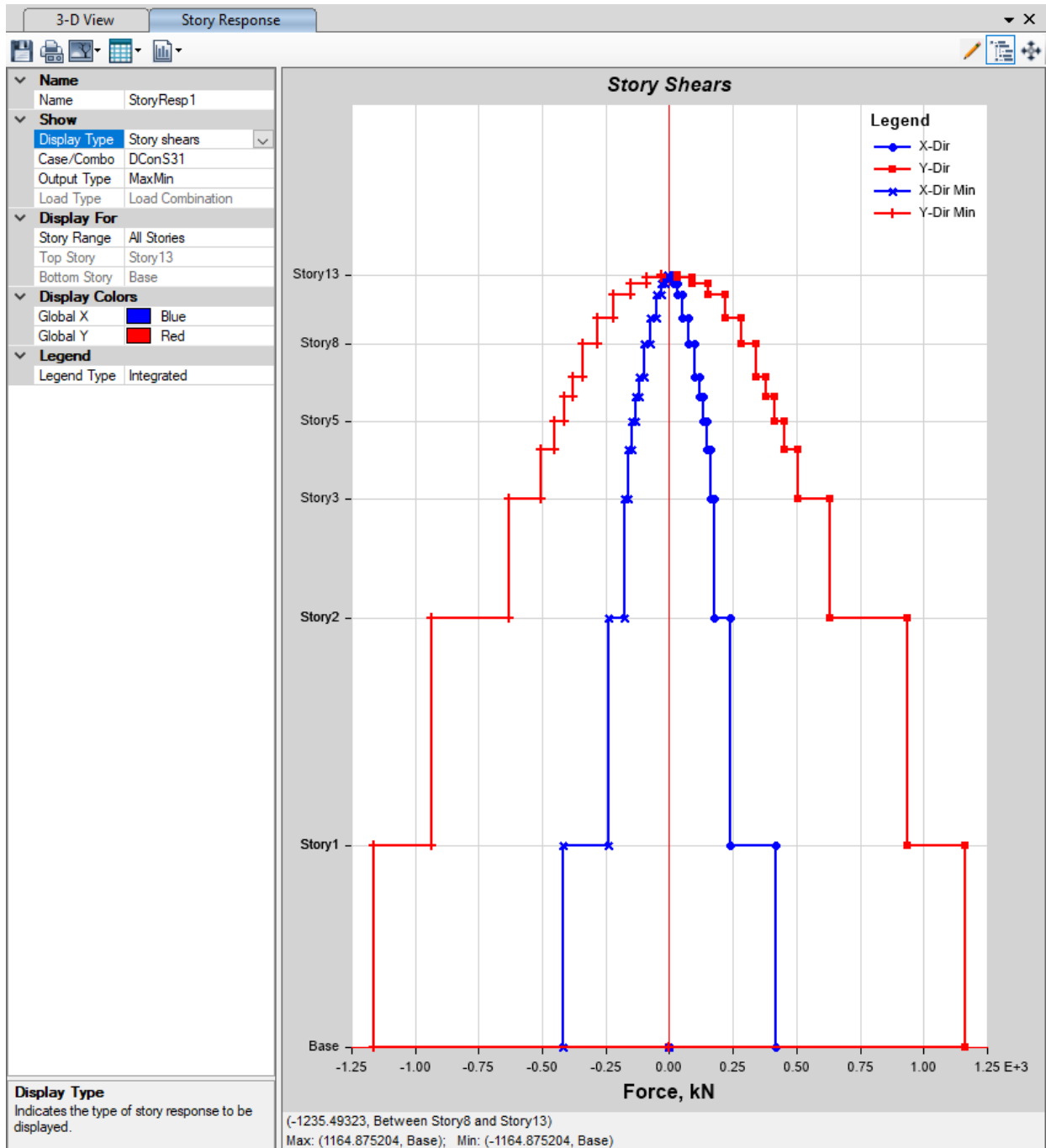


Figure 15: Story shears for dynamic seismic load case in the X-direction (LC 10)

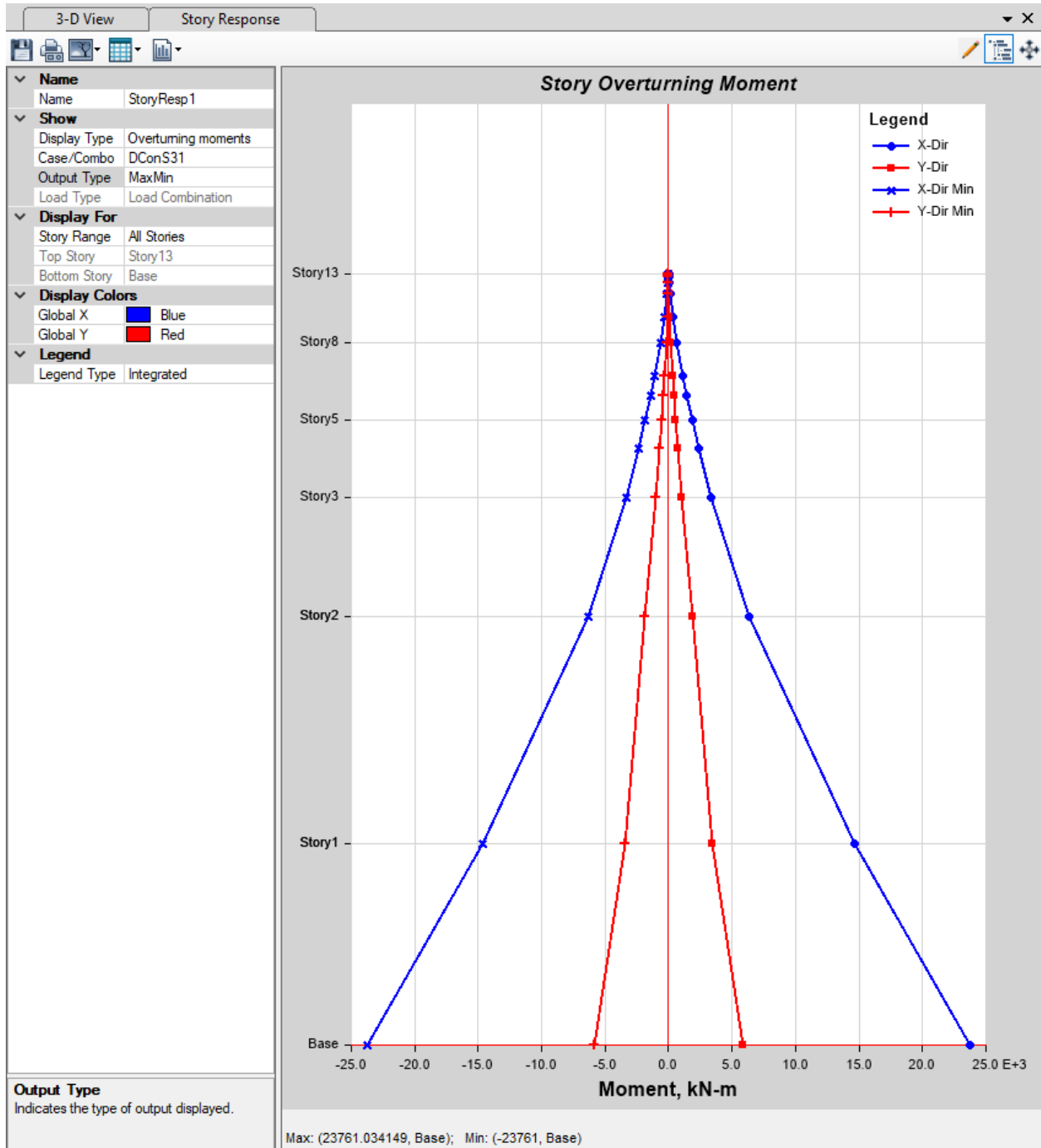


Figure 16: Overturning moments for dynamic seismic load case in the X-direction (LC 10)

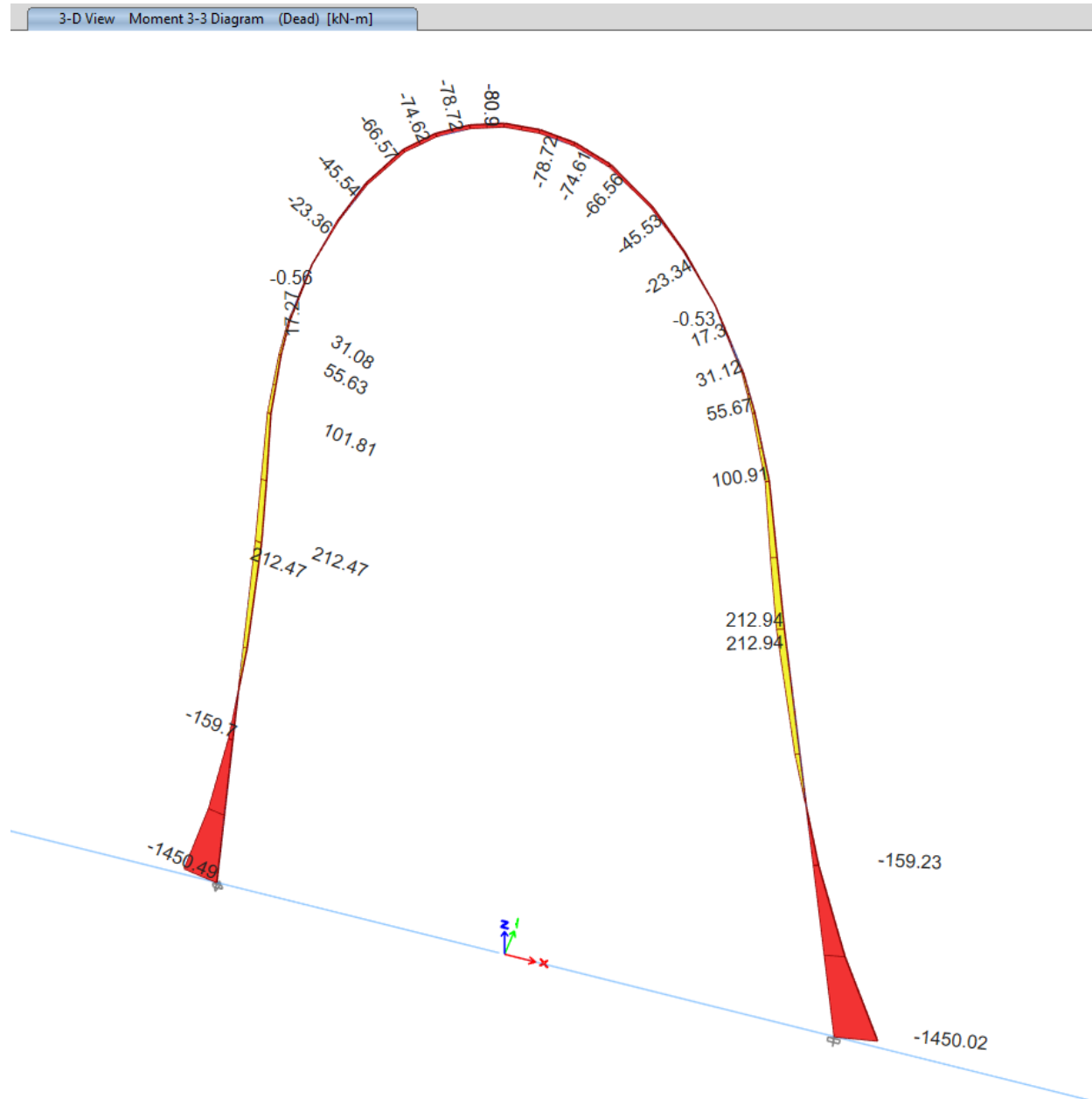


Figure 17: M_{33} moments for Dead load case

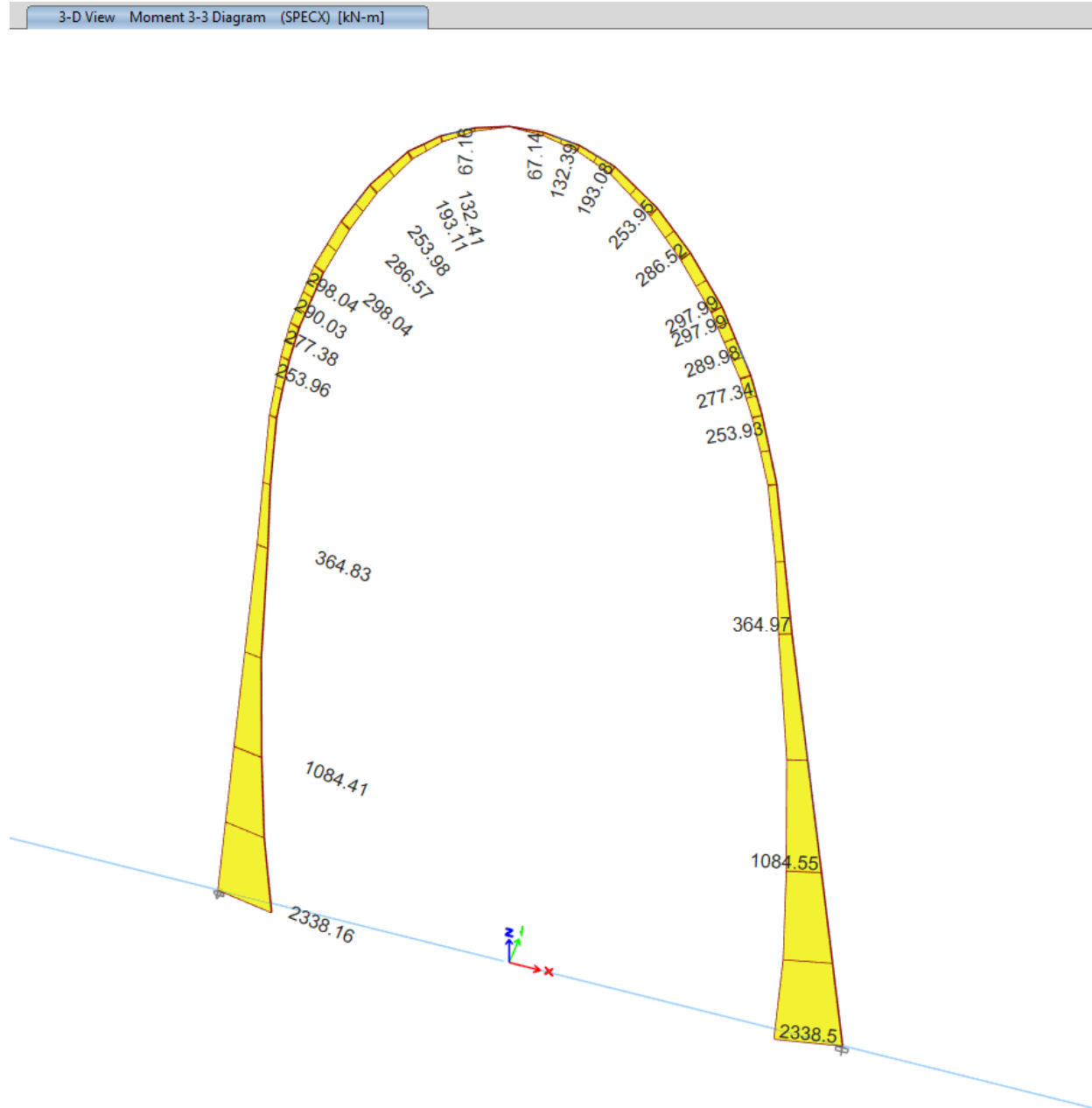


Figure 18: M_{33} moments for dynamic seismic load case (SPECX) in the X-direction

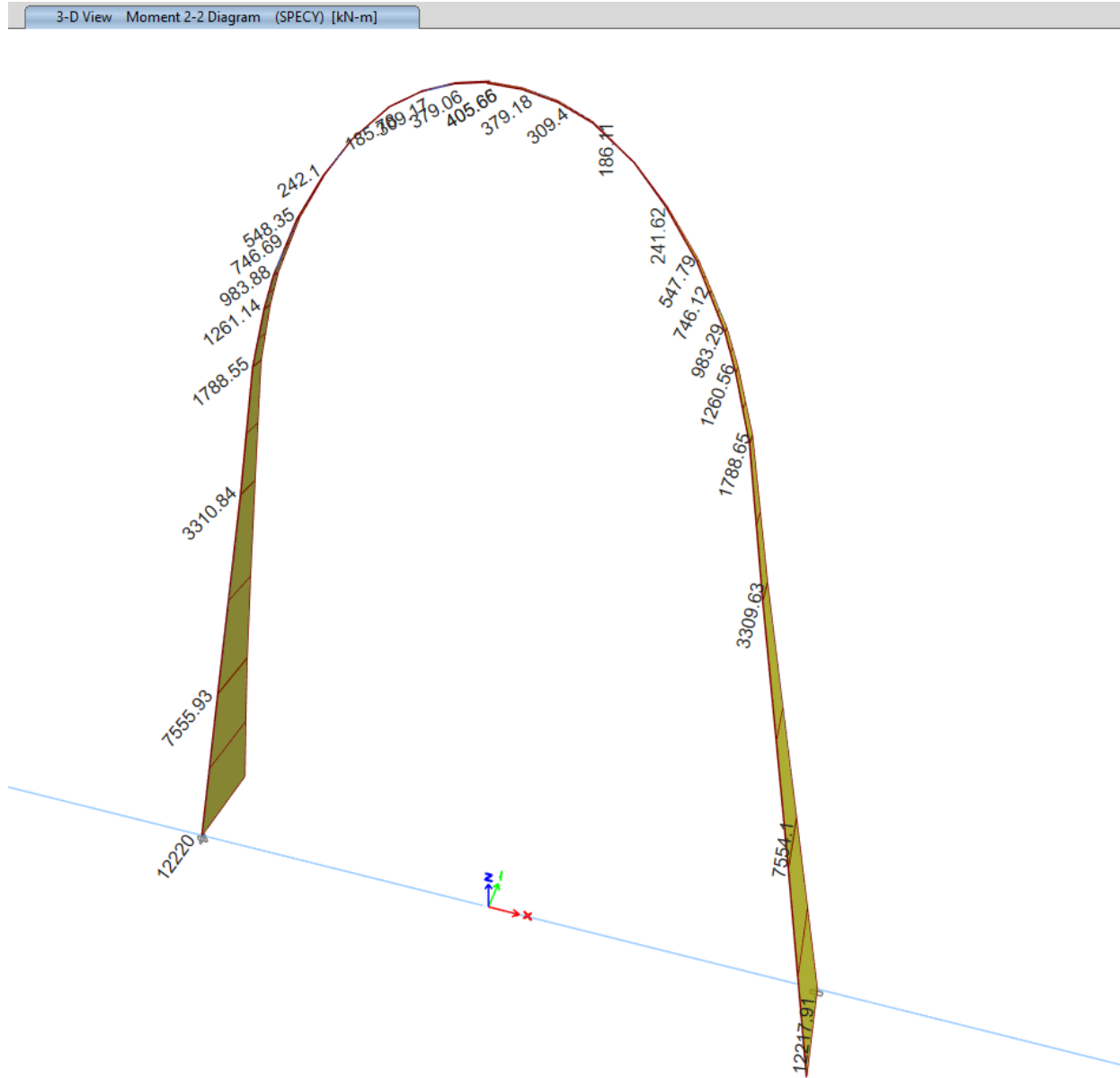
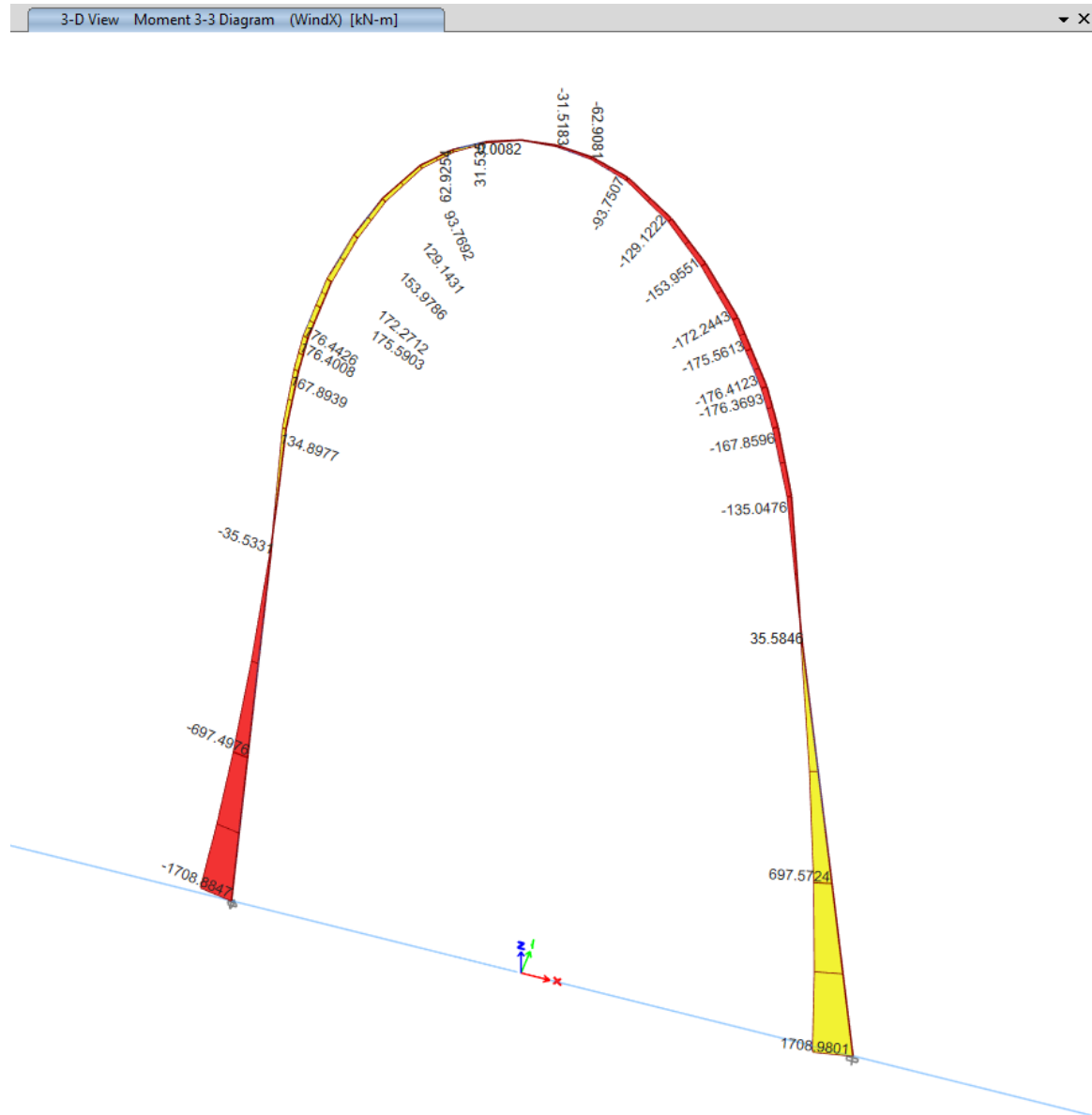


Figure 19: M_{22} moments for dynamic seismic load case (SPECY) in the Y-direction



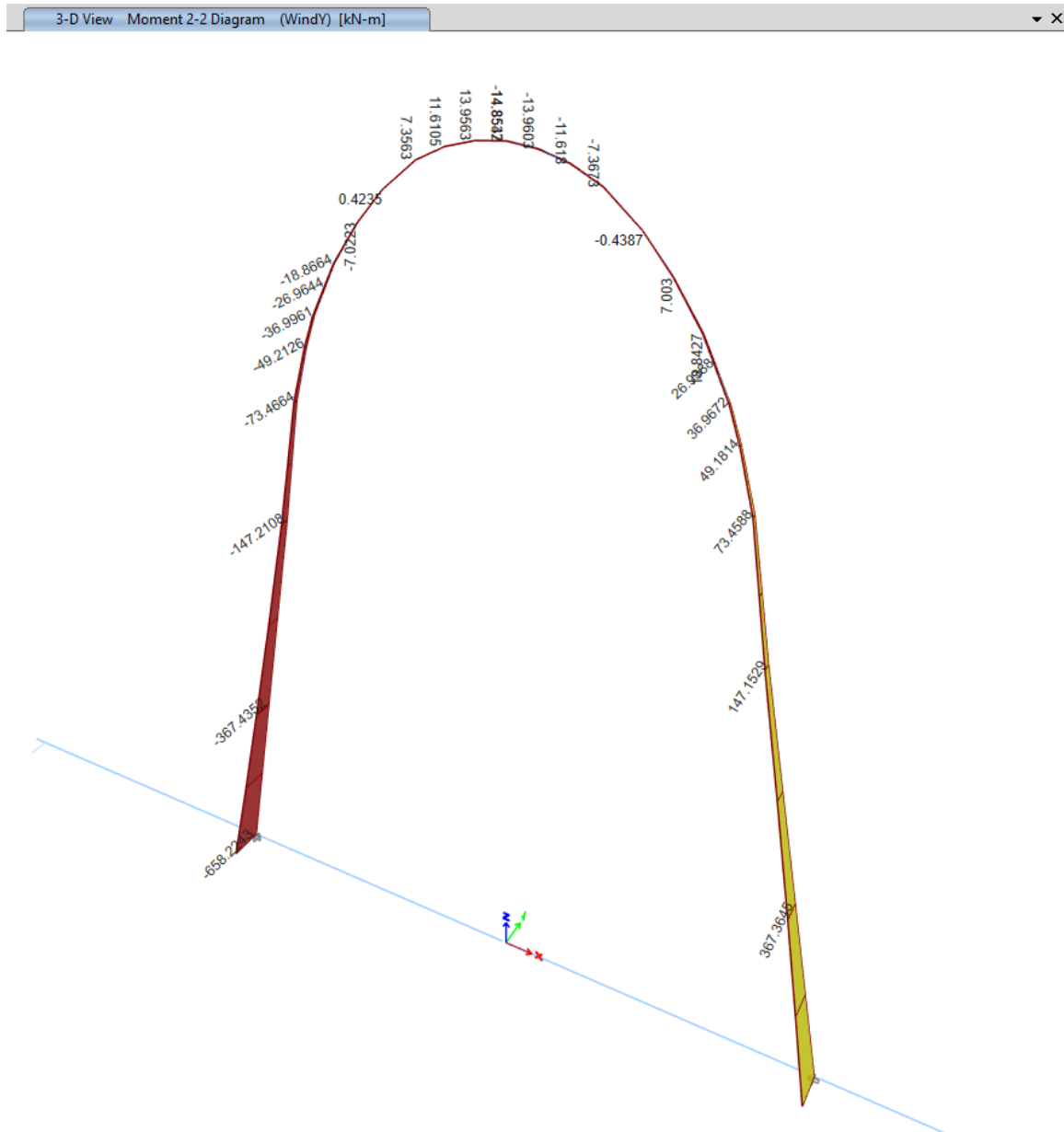


Figure 21: M22 moments for WindY load case

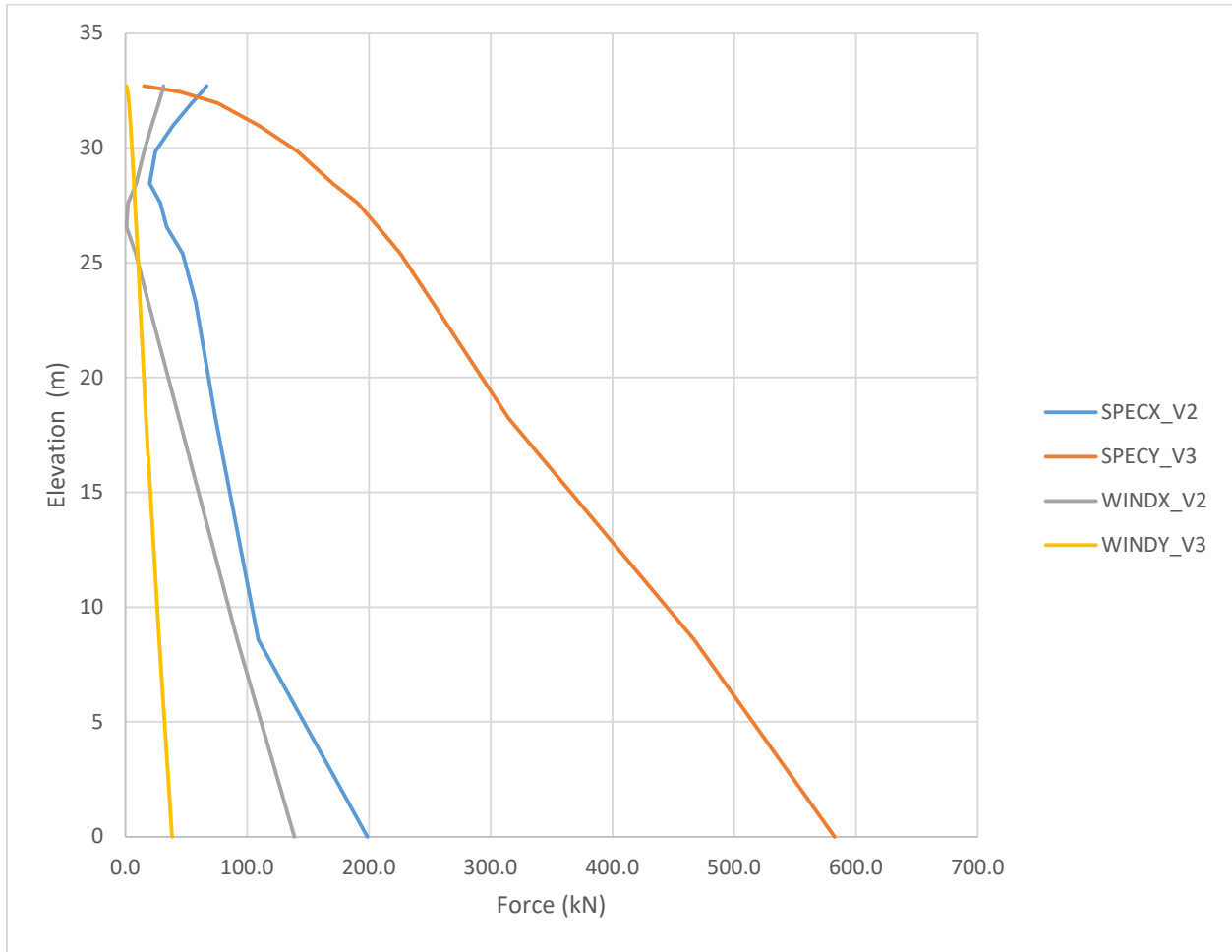


Figure 22: Earthquake and wind shear demands in both direction for each arch leg

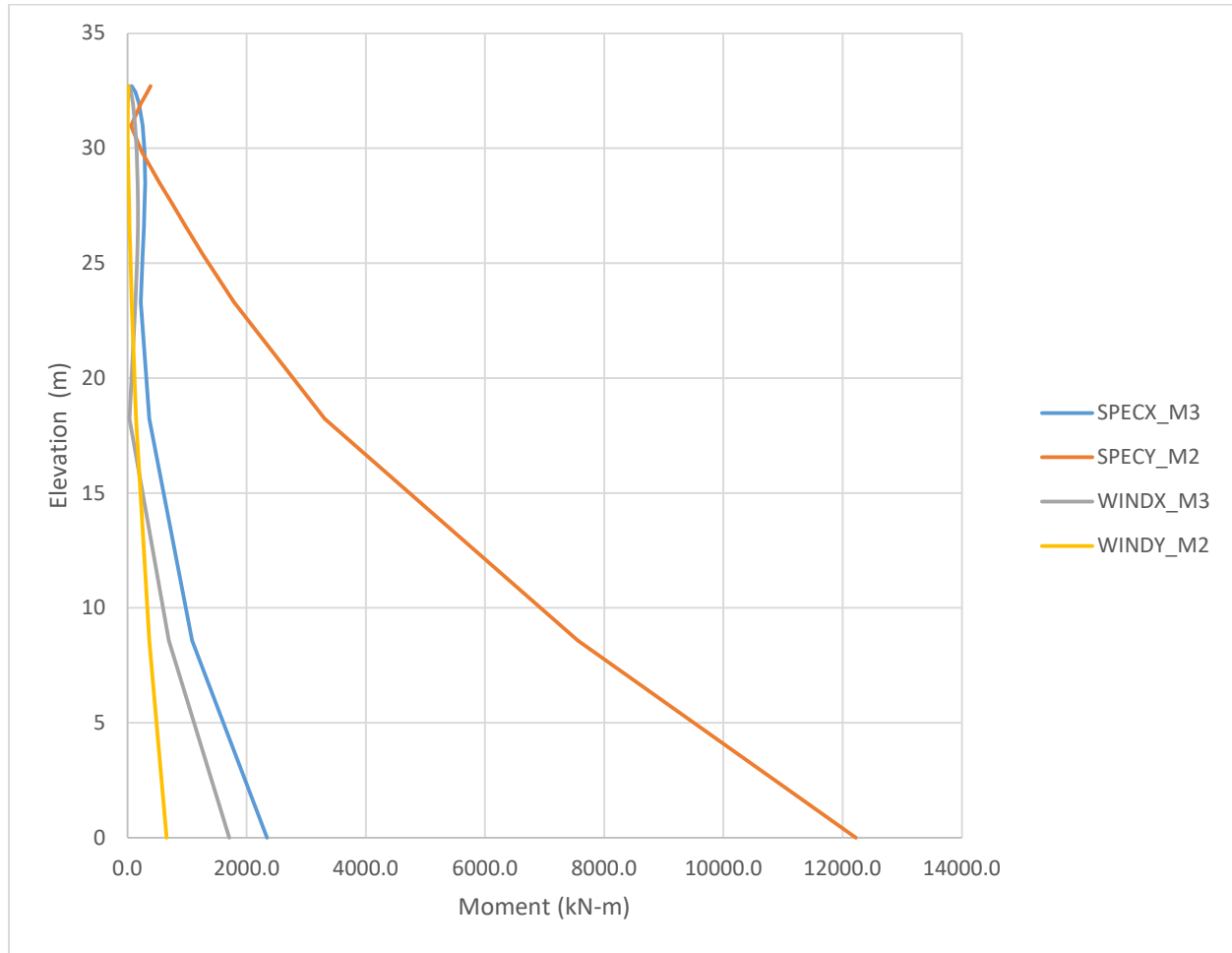


Figure 23: Earthquake and wind moment demands in both direction

Design Check

Seismic Detailing

The development length of longitudinal bars embedded in concrete was checked and compared to the requirements of section 25.4.2.2 in the ACI 318-14 code. The bar sizes are 32 mm (~1.27 in), which are considered #10 bar sizes based on Imperial bar size system. Based on the bar size, the following equation (US Units) was used to calculate the required development length:

$$\ell_d = \frac{f_y \psi_t \psi_e}{20 \lambda \sqrt{f'_c}} d_b = 85 \text{ cm}$$

According to Dar Al-Handasah drawings L6414/C317-2 in “Open Air Theatre.pdf”, the lap splicing of bars is 210 cm (~65 d_b) which is greater than the value required by ACI 318-14.

Also note that the transverse reinforcement provided does not meet the tie reinforcement requirements of ACI 318-14 Chapter 25 for beams, columns, and shear wall boundary elements. ACI 318-14 section 25.7.2.3 requires every corner and alternate longitudinal bar to have a lateral support

provided by a tie, which was not the case in current transverse reinforcement detailing. All bars in the long edge were enclosed by ties, but the short edge bars were generally not enclosed by any transverse ties, except for the corner bars (Figure 24). This could lead to premature buckling of bars and strength deterioration under large seismic loading cycles, but might have less significant consequences if the section remains essentially elastic.

Also, according to section 25.7.2.2, the tie bar diameter enclosing 32 mm (No. 10) or smaller longitudinal bars shall be at least 10 mm (No.3). The current detailing shows that internal tie bars are 6 mm diameter, which is less than specified by ACI 318-14.

In addition to that, the lap splice detailing did not meet the requirements of ACI 318 Section 18.7.4.3 which requires special confinement around the lap splices.

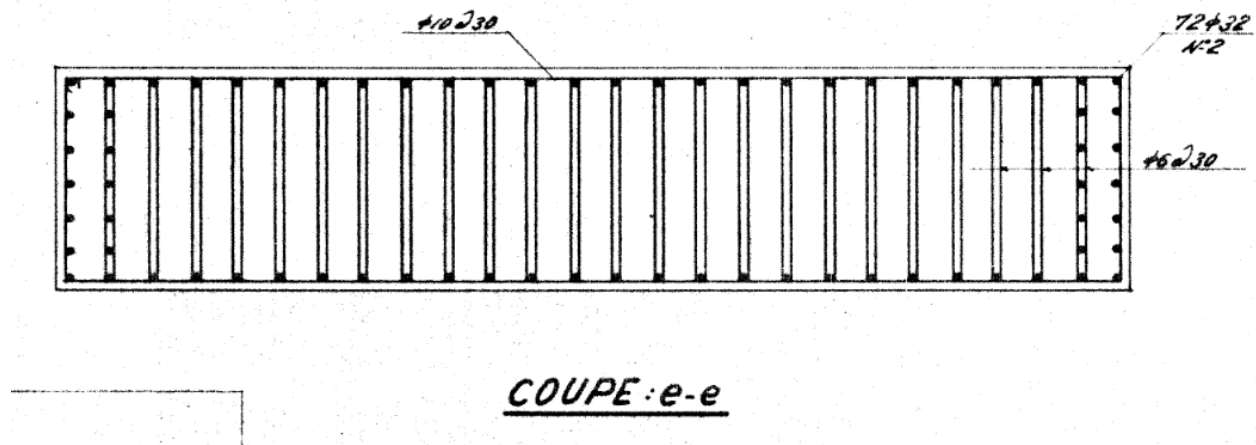


Figure 24: Reinforcement layout of the base section

Shear Capacity

Critical shear forces due to gravity and combined gravity and lateral forces were obtained along the elevation of the arch. Also, shear capacity along the height the arch was calculated per the provisions of ACI 318-14. The majority of the nominal shear capacity of each leg is contributed by the concrete shear strength (V_c), whereas the steel shear resistance was found to be negligible, as the provided shear reinforcement does not meet the minimum required shear reinforcement for concrete members.

The concrete shear capacity, steel shear resistance and minimum shear reinforcement required were calculated using the following equations:

$$V_c = 0.17 \times \lambda \times \sqrt{f'_c} \times b_w \times d$$

$$V_s = \frac{A_v \times f_{yt} \times d}{s}$$

$$A_{v, \min} = \text{greater of} \left\{ \begin{array}{l} \frac{0.062 \times \sqrt{f'_c} \times b_w \times s}{f_{yt}} \\ \frac{0.35 \times b_w \times s}{f_{yt}} \end{array} \right.$$

Figure 25 shows the concrete, steel and nominal shear capacities in both directions along the height of the arch. It is shown that the provided steel reinforcement is less than the minimum specified by the ACI 318-14 code, especially in the long direction of the section (V3).

Figure 26 shows the maximum shear demand due to gravity, and the maximum and minimum shear due to gravity and dynamic seismic forces. Note that “G” represents factored gravity (1.4D) and “G+S” is the shear force due to factored gravity and seismic load combinations.

Figure 27 presents a comparison of maximum shear demands to the nominal shear capacities in both directions. Note that the nominal shear capacity exceeds the demand, and the shear DCR is generally low (<0.3).

Figure 28 shows the axial load ratio (ratio of the axial force to section axial capacity) along the height of arch legs under gravity and seismic load combinations. The axial load ratio is generally very low, and hence the variation of axial load is not expected to significantly affect the calculation of the shear and moment capacities of the leg sections.

It should be noted that the following legend corresponds to:

- Vs2 = shear strength provided by shear reinforcement in the leg short direction (Global X-dir)
- Vs3 = shear strength provided by shear reinforcement in the leg long direction (Global Y-dir)
- Vc2 = shear strength provided by concrete in the leg short direction (Global X-dir)
- Vc3 = shear strength provided by concrete in the leg long direction (Global Y-dir)
- Vn2 = nominal shear strength in the leg short direction (Global X-dir)
- Vn3 = nominal shear strength in the leg long direction (Global Y-dir)
- Vu = shear demand

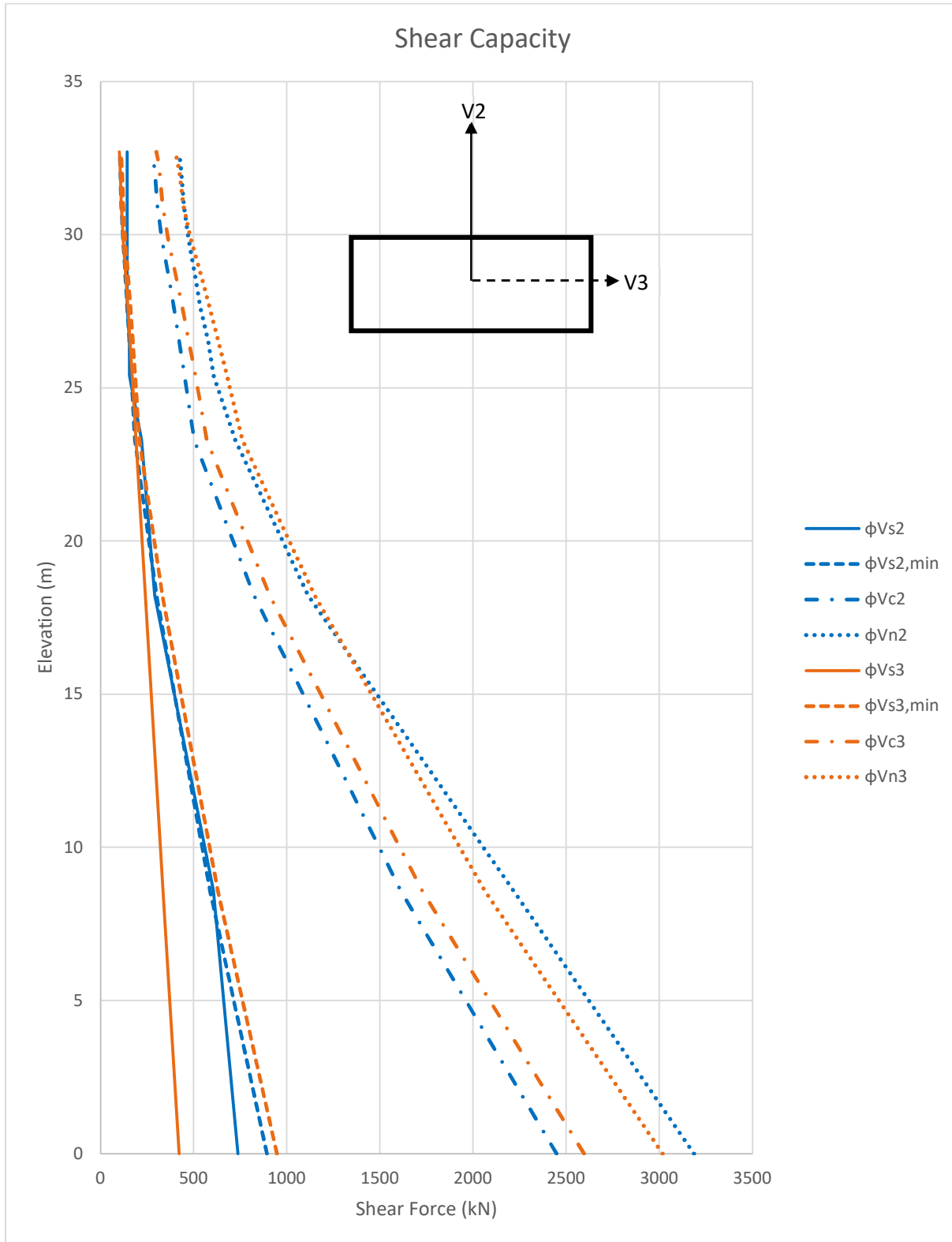


Figure 25: Leg shear capacity along the arch height due to gravity, and the maximum and minimum shear due to gravity and dynamic seismic forces.

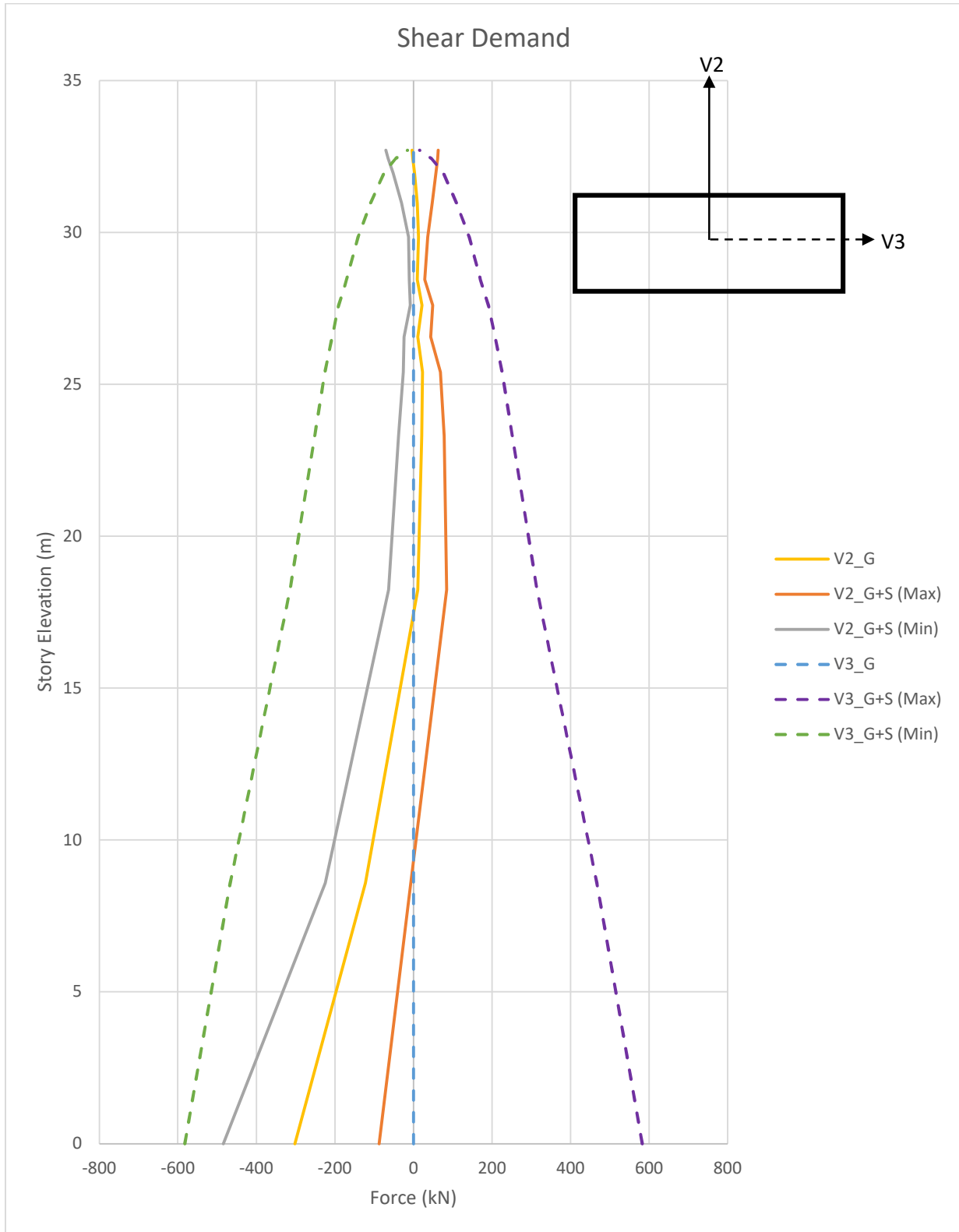


Figure 26: Maximum and minimum leg shear due to gravity and dynamic seismic forces (LC 1 & LC 14)

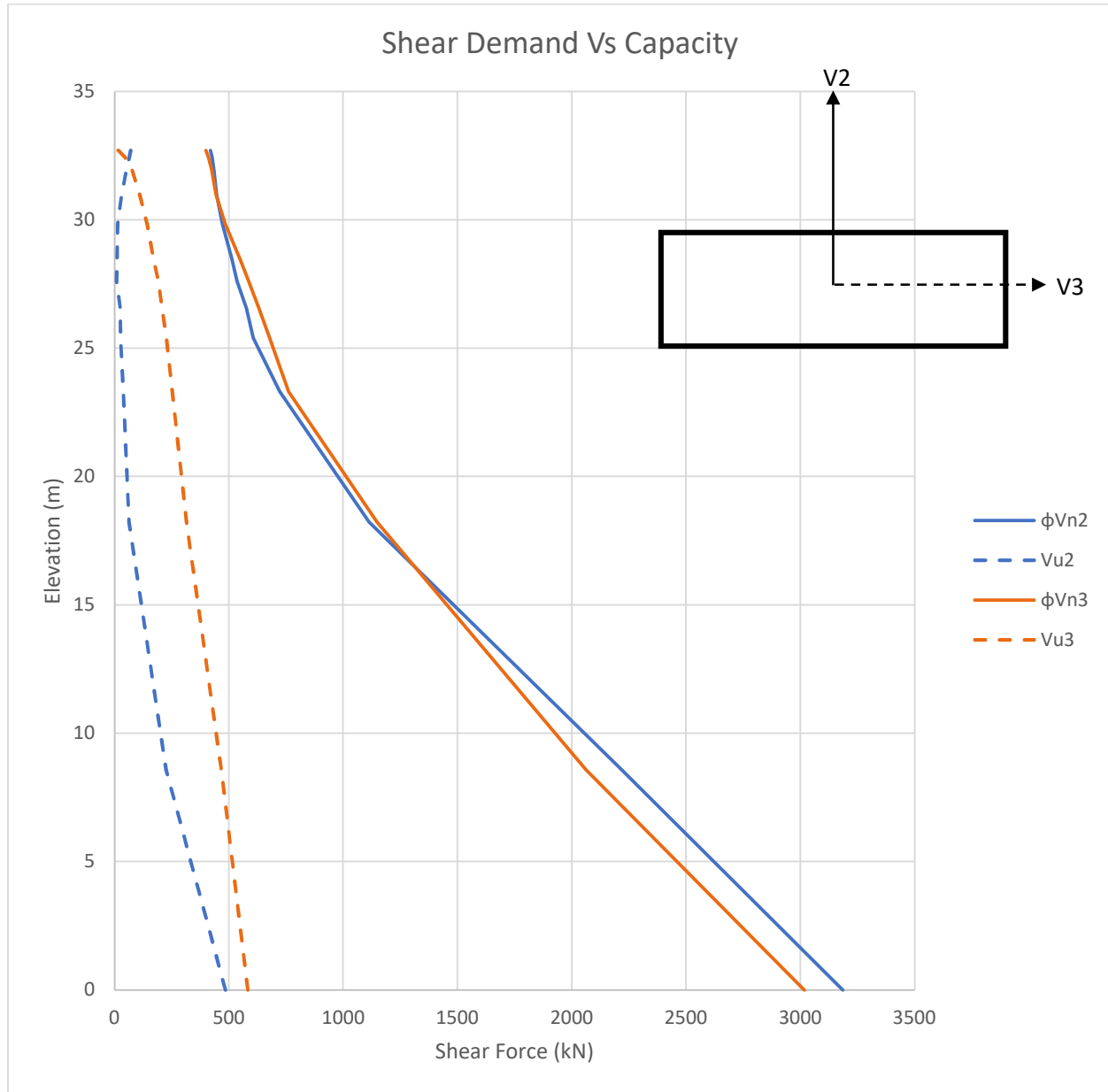


Figure 27: Leg shear demand vs capacity (LC 14)

It is also noted that ASCE 41-17, Table 10-13, specifies m factors of 1.25, 1.5 and 1.75 for Immediate Occupancy, Life Safety, and Collapse Prevention performance levels, for a beam controlled by shear, which suggest that the actual shear capacity may be at least 25% greater than previously calculated due to the low expected ductility. This suggests that the DCRs provided based on our analyses may be slightly conservative.

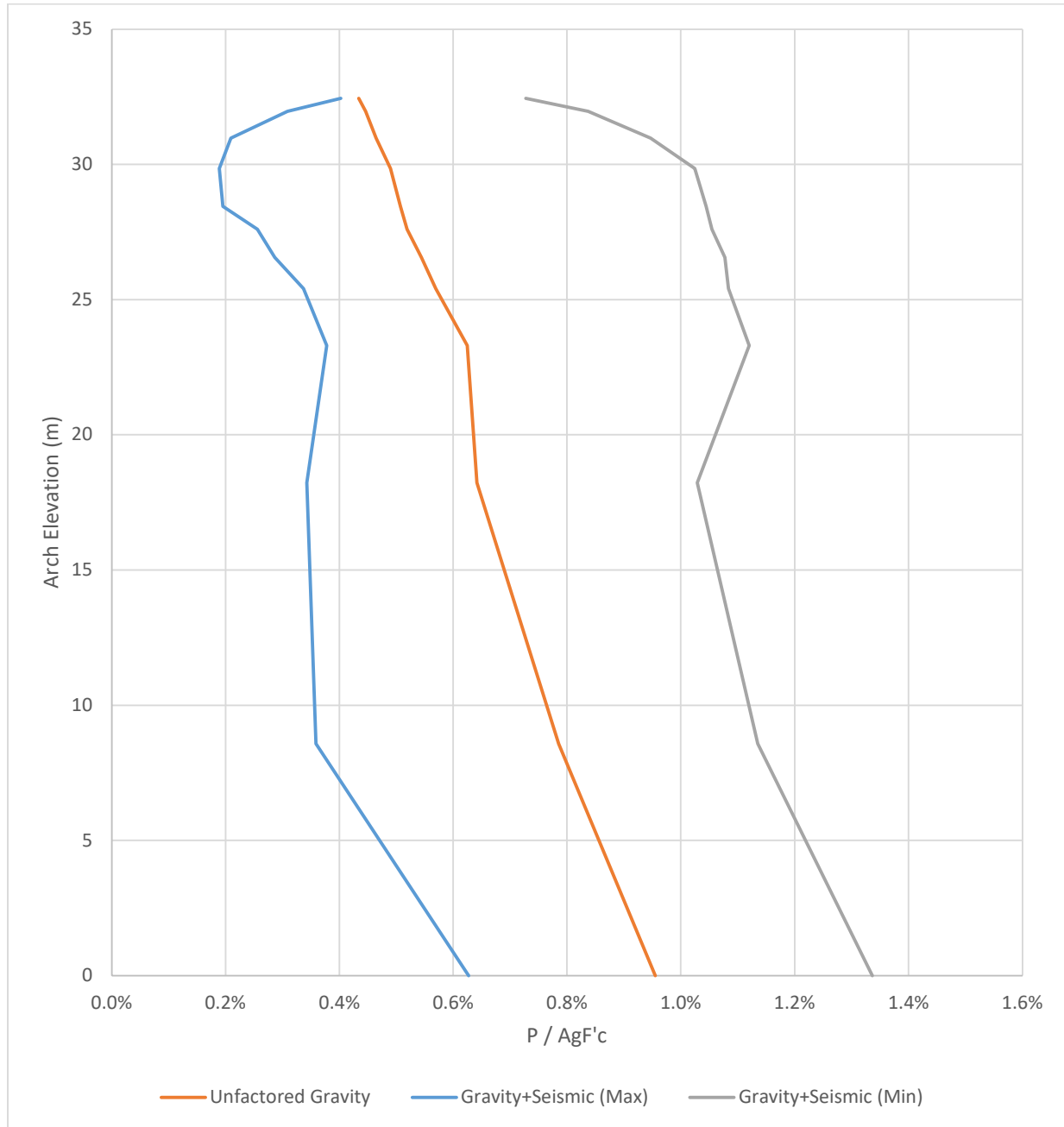


Figure 28: Axial load ratio under different load combinations along the height of the arch (LC 14)

Cold Joint Shear Strength

The arch was cast with multiple cold/construction joints at different height elevations, the shear strength of the joints is evaluated to determine if shear friction sliding may occur. A shear friction check was performed to address the possible failure on the arch plane as specified in ACI 318-14 using the following equation:

$$V_n = \mu * A_{vf} * f_y \quad (\text{ACI 318-14 Eq. 22.9.4.2})$$

- V_n = nominal shear capacity
- A_{vf} = area of reinforcement crossing the shear plane
- F_y = tensile strength of steel

According to ACI 318-14 table 22.9.4.2, the friction coefficient, μ , used is 0.6λ . The value of 0.6 was chosen since field inspection of the joint surfaces suggests that the surfaces may not have been sufficiently roughened prior to casting the subsequent section, and the joint surfaces were relatively smooth.

Using the above equation, it is found that the joints have sufficient shear friction capacity to resist the shear demands at the joints ($DCR < 0.05$). The low DCR is mainly due to the large amount of longitudinal reinforcement which contributes to shear friction capacity.

Demand-to-Capacity Ratios (DCRs)

Figure 29 shows the variation of maximum DCRs along the height of the arch. The DCR is the controlling demand-to-capacity ratio. The demand forces on each structural component were extracted from the ETABS model and compared to their capacities. The demand forces are internal forces (axial, shear and moments) in each element due to the applied gravity, seismic and wind loads. It should be noted that the wind demands did not govern any of the design checks. The critical DCR is the highest of the following DCR's: PMM, PMx, PMy, Vx and Vy. PMM DCR's generally controlled at all elevations. The highest DCR recorded was at the base of the section due to a combined PMM interaction.

- PMM: axial load and biaxial moment
- PMx: axial load and moment in the X-direction
- PMy: axial load and moment in the Y-direction
- Vx: shear in the X-direction
- Vy: shear in the Y-direction

The structure was found to have adequate capacity to resist seismic and wind demands, prescribed by ASCE 7-16 based on the assumptions described herein, combined with gravity loading, as all DCR values were found to be less than 1.

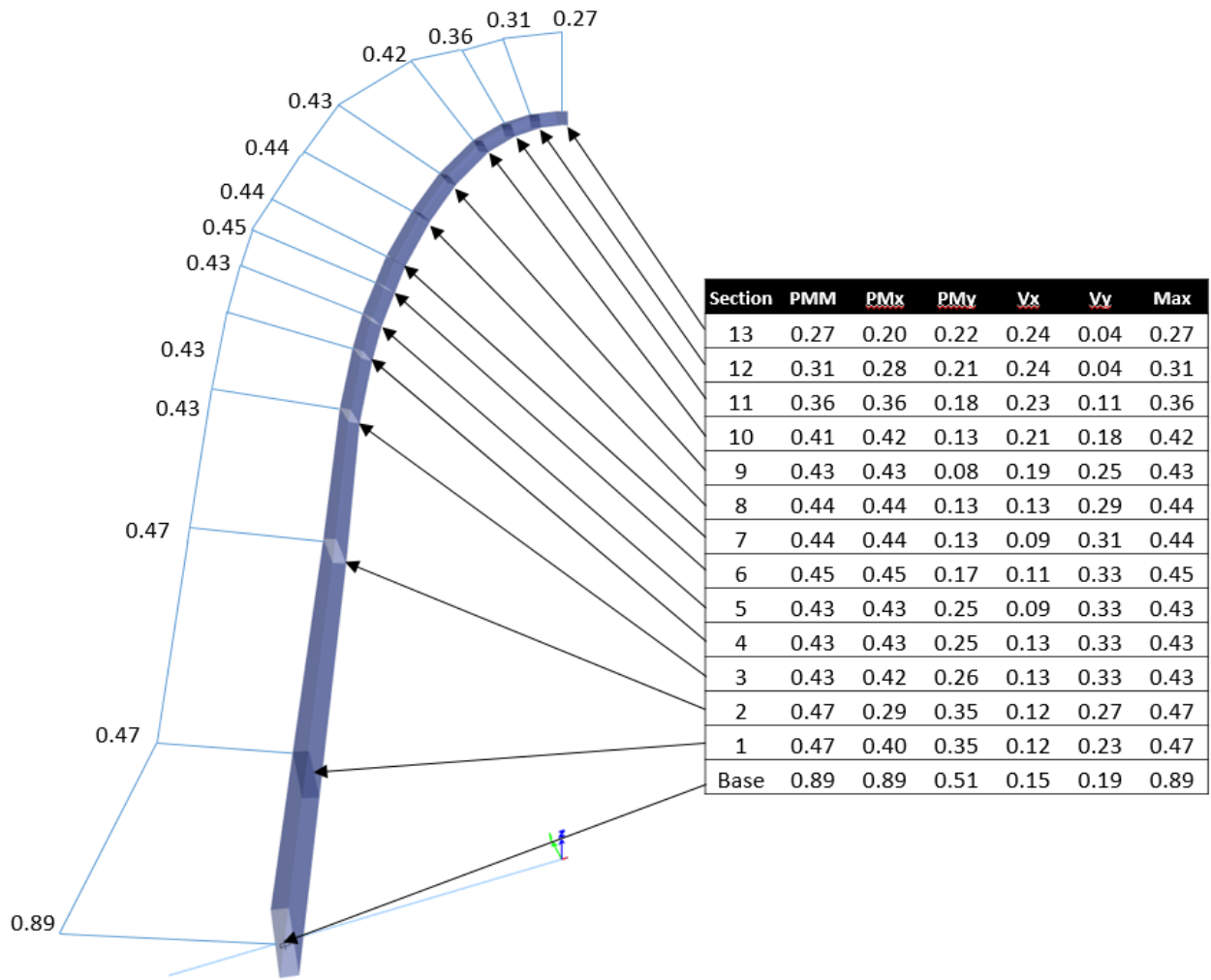


Figure 29: Demand capacity ratios (DCR's) along arch height

Conclusions and Recommendations

The Grand Arch, located at Rachid Karami International Fair, was designed by Oscar Niemeyer and constructed in the late 1960s. The arch is considered a major part of the Open-Air Theatre. A linear analysis and evaluation of the arch under current building codes was performed. The concrete compressive strength and rebar yield strength were obtained from the results of testing performed by ACTS. ETABS V20 was used to model and analyze the Grand Arch. The structure was analyzed under self-weight, wind, and static and dynamic seismic loads. The following are the conclusions and recommendations of this study based on our analysis:

- The analysis showed that the structure has adequate strength to resist the applied gravity and lateral force demands, as the maximum demand-capacity ratio (DCR) was less than 1, and met the requirements of modern codes (ASCE 7-16) with few exceptions, despite the fact that it was designed and constructed more than 50 years ago.
- The lateral design of the arch was governed by seismic loads and not the wind loads.
- The reinforced concrete structure does not meet all current seismic detailing requirements. For example, the minimum shear reinforcement provided was less than the required by ACI 318-14, and the cross-tie reinforcement detailing does not meet tie reinforcement requirements per ACI 318-14 sections 25.7.2.2 and 25.7.2.3. This could lead to premature buckling of bars and strength deterioration under large seismic loading cycles, but might have less significant consequences if the section remains essentially elastic, as is expected given the low calculated demand-to-capacity ratios.
- Although the rebar yield strength met the requirements of Grade 60, the tested rebar did not meet the ultimate strength requirements in order to be considered Grade 60. Hence, Grade 40 rebar strength was assumed in our structural model and design checks. The use of this lower strength compared to the yield test result also adds conservatism to the analysis.
- It should be noted that a single rebar test is not sufficient or statistically significant to make conclusive results on the rebar strength. Hence, we recommend additional rebar testing to confirm the actual steel strength. Assuming Grade 60 steel will help increase the structural capacity by almost 27%, and lower the DCR's proportionately, resulting in a higher margin of safety.
- Since the structure does not meet all the requirements of ASCE 7 - the design standard for new buildings, we recommend that the structure be re-evaluated using ASCE 41, which is the standard for the evaluation of existing buildings, in order to obtain a more reliable assessment of its seismic resistance. ASCE 41 evaluations are more detailed and can directly consider the nonlinear behavior of the structural if a nonlinear pushover analysis or nonlinear response history analysis are performed.
- We recommend that a detailed investigation of the arch foundation be conducted in order to better assess the seismic performance of the arch and its foundation. A preliminary check indicates that the structure has a high factor of safety against overturning under seismic loads. However, this check does not consider soil bearing failure. A more detailed investigation performed according to ASCE 41, which might include a field soil investigation, and an advanced nonlinear analysis incorporating soil-structure interaction will provide more reliable information which can be used to confirm the seismic adequacy of the arch.

- This analysis does not consider the effects of deterioration on structural performance and assumes that the structure will be repaired and restored to its original condition. Hence, it is recommended to perform a rehabilitation of the structure as soon as possible in order to restore its structural integrity and provide protection from natural elements.

Appendix A: Concrete Test Results



Date : 28-Jul-22
Serial No. : 65781
Page 1 of 1

TEST REPORT

Tested at : "ACTS Central Laboratory, Beirut,
Sanayeh area, George Assy st.
P.O.Box: 14/5918-Code:1105-2080
Tel: 01-737400; Fax: 01-737222"

Client: United Nations Educational Scientific and Cultural Organization -UN
UNESCO regional office building
01/850013

Compressive Strength of Concrete Cores
(ASTM C42)

Contractor : -----
Consultant : -----
Project : Preparation of a conservation management plan for Oscar Niemeyers Rashid Karami
Sample Type : Concrete Core

Work Order No. : ACTS-2201721
Sample Received on: 27-Jun-22
Date of Testing : 12-Jul-22
Extracted By : ACTS

Drilling Details

Date of Drilling : 27-Jun-22
Location of Drilled Samples : Arch
Standard Method : ASTM C42

Core Ref.	AR-1/B	AR3	AR5	AR6	-----	-----
Structural Ref.	Arch	Arch	Arch	Arch	-----	-----
Direction of drilling	Horizontal	Horizontal	Horizontal	Horizontal	-----	-----
Time of Drilling	11:30	12:00	3:30	4:00	-----	-----
Moisture History	Time of sealing after drilling	11:40	12:10	3:45	4:10	-----
	Date of sealing after end preparation	11/7/2022	11/7/2022	11/7/2022	11/7/2022	-----
	Time of sealing after end preparation	1:10	1:40	1:50	2:00	-----
Time of Testing	11:10	11:30	11:55	12:10	-----	-----
Cast Date	-----	-----	-----	-----	-----	-----
Age (days)	-----	-----	-----	-----	-----	-----
Average Diameter (mm)	74.0	74.0	74.0	74.0	-----	-----
Length of core after drilling (mm)	190	120	75	105	-----	-----
Length of capped core (mm)	-----	-----	-----	-----	-----	-----
Length of uncapped core (mm)	120	100	80	85	-----	-----
Nominal Max Size of Aggregate (mm)	-----	-----	-----	-----	-----	-----
Weight in air (g)	1252	1087	853	893	-----	-----
Area (mm ²)	4301	4301	4301	4301	-----	-----
Load (kN)	194.0	209.4	308.7	194.2	-----	-----
l(L/D)	1.62	1.35	1.08	1.15	-----	-----
Correction factor for length	0.970	0.942	0.889	0.906	-----	-----
Density (kg/m ³)	2420	2520	2480	2440	-----	-----
Compressive Strength (MPa)	43.5	46.0	64.0	41.0	-----	-----
Type of Fracture	2-A	2-A	2-A	2-A	-----	-----
Defects	No Defects	No Defects	No Defects	Sand Lump	-----	-----

Remark :

Cores of 74 mm diameter were extracted instead of 94 mm as per customer request to avoid cutting steel reinforcement

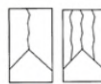
Reviewed by : Bassam Abdo

Technician



1-A

1-B



2-A

2-B



3



4



5-A

5-B



6

Approved by: Antonio Bouty

Branch Manager

This test is under the scope of ISO 17025 accreditation.

LEGAL NOTICE

ACTS shall bear no responsibility for the authenticity of the sample, which was the basis of this report, unless the sampling is conducted by ACTS employees. This will be clearly indicated in the relative test report. The information given in ACTS reports is for the use of the client. It is not to be abstracted or published by any means or in any form, in whole or in part. Prior written consent from ACTS is required in the case of necessity for use of the report. It is strictly prohibited to use this report for advertising purposes. ACTS shall not assume any responsibility for any interpretations of the report except when the interpretation is given in writing by ACTS. Neither ACTS nor its employees shall bear any responsibility for this damage, loss, omission, failure, or injury; arising directly or indirectly in connection with ACTS performance of testing, inspection, calibration of materials, instruments, or other articles.



Appendix B: Rebar Test Results



Date : 28-Jul-22
 Serial No. : 65782
 Page 1 of 1

**TEST REPORT**

Tested at: "ACTS Central Laboratory, Beirut,
 Sanayeh area, George Assy st.
 P.O.Box: 14/5918-Code:1105-2080
 Tel: 01-737400; Fax: 01-737222"

Customer : United Nations Educational Scientific and
 Cultural Organization -UNESCO
 01/850013
 UNESCO regional office building

TENSILE STRENGTH ON STEEL BARS
 (A.S.T.M. A-370)

Contractor : ----- Work Order No. : ACTS-2201873
 Consultant : ----- Sample Received on : 27-Jun-22
 Project : Preparation of a conservation management plan for Oscar Nieme Sample Tested on : 27-Jul-22
 Sample Type : Steel Bar Sampled by : ACTS
 Source : Beam of the Open Air Theater

Sample Ref.	T20	-----	-----	ASTM A615-20 (Tensile Requirements)			
Nom. Dia. (cm)	2.0	-----	-----		Grade 40	Grade 60	Grade 80
Length (cm)	52.5	-----	-----	Tensile Strength ,min. (MPa)	420	550	690
Weight (g)	1042.0	-----	-----	Yield Strength ,min. (MPa)	280	420	550
Act . Dia. (cm)	1.79	-----	-----	Bar Designation No.	Elongation min %		
Act. Area (cm ²)	2.5284	-----	-----	10	11	9	7
% WT (+/-)	-19.520	-----	-----	13,16	12	9	7
Y. Load (kN)	107.5	-----	-----	19	12	9	7
Yield Str. (MPa)	425	-----	-----	22,25	---	8	7
Yield Str.(Kg/cm ²)	4337	-----	-----	29,32,36	---	7	6
U. Load (kN)	130.0	-----	-----	43,57	---	7	6
U. Str. (MPa)	514	-----	-----	ASTM A706 (Tensile Requirements)			
U. Str. (Kg/cm ²)	5245	-----	-----	Tensile Strength ,min. (MPa)	550		
U. Str / Y. Str. Ratio	1.21	-----	-----	Yield Strength ,min. (MPa)	420		
L 1 (cm)	20.0	-----	-----	Yield Strength ,max. (MPa)	540		
L 2 (cm)	22.5	-----	-----	Bar Designation No.	Elongation min %		
Elongation (%)	12.5	-----	-----	10,13,16,19	14		
				22,25,29,32,36	12		
				43,57	10		

Reviewed by: Ahmad Toufaily
 Material Engineer

Approved by: Antonio Bouty
 Branch Manager

Samples will be disposed after one week from the delivery date of report.

LEGAL NOTICE

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APPENDIX B. FACT REPORT (MATERIAL TESTING) REPORT BY ADVANCED CONSTRUCTION TECHNOLOGY SERVICES (ACTS)

FACTUAL REPORT

RASHID KARAMI INTERNATIONAL FAIR

TRIPOLI, LEBANON

AUGUST 25-2022



Build on our credentials

Dear Sir,

Kindly find enclosed our factual report for the material investigation done at Rachid Karami International Fair Structures located in Tripoli - Lebanon for your reference.

We will seize this opportunity to highlight our intensive experience in laboratory testing services and the quality of our well experienced staff. A result of 26 years in the industry dealing with national and international contractors and consultants will be invested in every new challenge while providing the best service and quality.

For any further information, Please feel free to contact us.

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Tel: +961 1737400, Ext 14



This report has been prepared for Rachid Karami International Fair Project. ACTS does not hold any responsibility for any use of or reliance on the contents of this report by any third party, or for any other project.

*M/s. UNESCO
Rachid Karami International Fair – Tripoli Lebanon*

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1. Introduction

Under the request of M/s. United Nations Educational Scientific and Cultural Organization – UNESCO, ACTS conducted a material investigation at Rachid Karami International Fair Structures. Rachid Karami International Fair is a complex of buildings located in Tripoli, North Governorate - Lebanon. It was designed by the Brazilian architect Oscar Niemeyer in 1962 AD and built between 1967-1975. Construction stopped in 1975 due to the outbreak of the Lebanese Civil War, and it never resumed. The fair is a successful example of modern architecture movement in the twentieth century.

There is no clear or visible previous structural repairs done on the existing investigated structures (the Open Air Theater and the Arch). Several cracks and major defects were reported in both structures. The classification of the Open Air Theater Structure is considered as dangerous with a risk of a total failure of a major part of the ceiling (Bottom Slab part). Therefore a material investigations were requested to evaluate the structural condition of the building.

The onsite visit was performed by ACTS in June 27th and 28th 2022. The testing campaign included site and laboratory tests; extraction of concrete cores for compressive strength, concrete depth of carbonation, sulfate and chloride content, PH Content, Cement Content, steel sampling with tensile strength for steel, cover measurement for steel reinforcement, cover removal to help assess the unexposed reinforcement condition and degree of corrosion with an overall visual inspection/observation for the entire structural problems or defects. The tests locations were specified by ACTS in collaboration with WJE engineers.

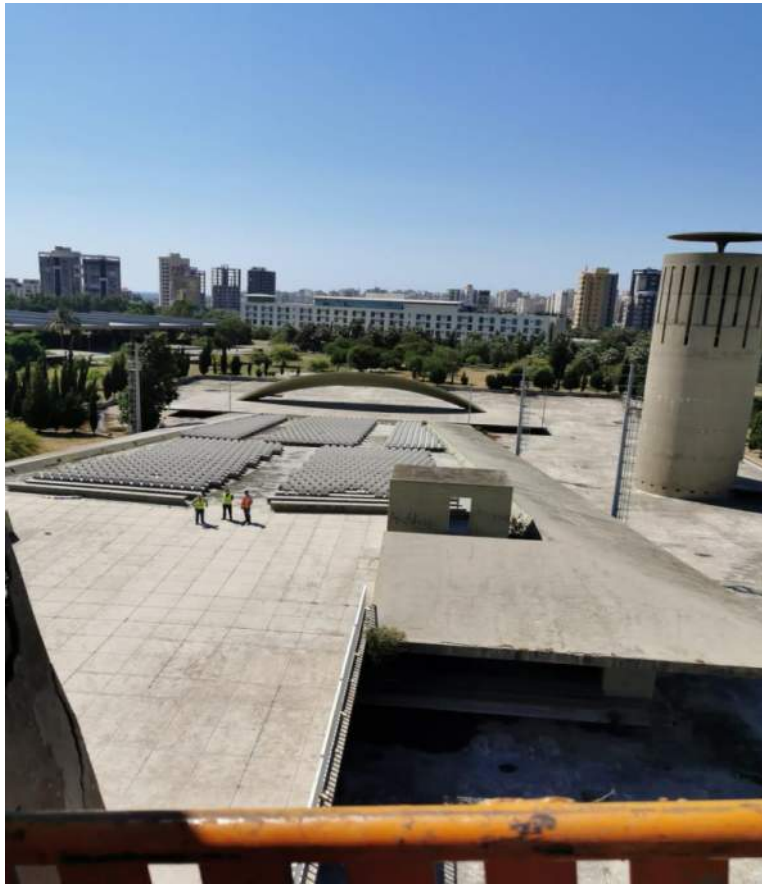


Figure 1: Open Air Theater



Figure 2: Arch

2. Visual Observation

ACTS team performed a full visual inspection of the structure and the defects were found in the bottom Ceiling of the open air theater; the beams in the two ways below the top ceiling of the open air theater are segregated and the reinforcement is exposed to the external environmental conditions.

The frequent defects noticed in the arch during the investigation is the corrosion of the steel (external areas – exposed) and the concrete spalling. In some areas, although the steel is not exposed, the plaster and the concrete cover show signs of possible future spalling which presents a structural and a domestic risk.



<u>Figure Caption</u>	<u>Picture</u>	<u>Remark</u>
Figure 3: Right side part of the Arch – Spalled concrete		The concrete is spalled and the reinforcement is shown and exposed to the open air.
Figure 4: Bottom Ceiling – Open Air Theater		A large portion of the bottom ceiling has been fallen down to the ground

Figure 5: Bottom part of the beam - Open Air Theater



Segregation in the bottom part of the beams.

And the steel reinforcement is exposed to the external factors.

Figure 6: Arch – Left Side



Spalled concrete and the reinforcement is shown and exposed to the external environmental conditions.

3. Codes and Standards

The following standards were used for the assessment:

- **ACI 214.4:** Guide for Obtaining Cores and Interpreting Compressive Strength Results.
- **ASTM C42:** Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.
- **BS 1881 P124:** Determination of Acid Soluble Sulfate and Chloride in Concrete.
- **ACI 318-11:** Metric Building Code Requirements for Structural Concrete and Commentary.
- **ASTM C876:** Half Cell potential of uncoated steel.
- **ASTM A615:** Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.

4. Tests Results

4.1 Concrete Strength

A – Extracted Cores Strength:

Compressive strength test on drilled concrete cores is required to determine the strength of hardened concrete in a structure, where cores of 74 mm diameter were extracted instead of 94 mm (to avoid cutting steel reinforcement) with different length-to-diameter (l/d) ratios.

Compressive strength of concrete cores tests were conducted according to the ASTM C42 standard.

Concrete cores were extracted from the beam and bottom ceiling of the open air theater, and the two sides of the Arch at different levels as requested. Three cores were extracted from each side of the Arch and one additional core from the top part of the Arch. Our team extracted also three cores from the Open Air Theater (one from the beam and two others from the bottom ceiling), which makes a total of 10 concrete cores; 7 from the Arch and three from the Open Air Theater.

The compressive strength, density, defects and dimensions of the tested samples can be found in the **Appendix** with reference to ASTM C42.

B – In-Situ Concrete Strength:

For future evaluation of the structure, the in-place compressive strength of concrete may be obtained using the ACI 214.4 Chapter 8. The procedure below allows assessing the structural capacity of an existing structure.

Reference to the above mentioned standard, the in-place strength of the concrete f'_c at the location, from which a core test specimen was extracted, can be computed using the below

equation and summarized in table 1 below. The correction factors are extracted from the same standard.

$$f_c = F_{l/d} F_{dia} F_{mc} F_d f_{core}$$

Where:

f_c is the equivalent in-place strength

f_{core} is the core strength

$F_{l/d}$ is the correction factor due to length to diameter ratio

F_{dia} is the diameter correction factor

F_{mc} is the moisture condition correction factor

F_d is the correction factor due to damage sustained during drilling

Table 1: In-Situ Strength of Concrete Cores

Ref.	Area mm ²	Load (KN)	f_{Core}	L (mm)	d (mm)	L/d	$F_{l/d}$	F_{dia}	F_{mc}	F_d	In-Situ Concrete Strength (MPa)
OAT-1	4301	142.2	31.0	100	74	1.35	0.9448	1.0312	0.96	1.06	30.73
AR-1/B	4301	194.0	43.5	120	74	1.62	0.9819	1.0312	0.96	1.06	44.82
AR3	4301	209.4	46.0	100	74	1.35	0.9475	1.0312	0.96	1.06	45.74
AR5	4301	308.7	64.0	80	74	1.08	0.9014	1.0312	0.96	1.06	60.54
AR6	4301	194.2	41.0	85	74	1.15	0.9087	1.0312	0.96	1.06	39.10

To note that non-shrink grout was immediately used to replace all the removed concrete.

All the strength results should be analyzed by the structural responsible engineer for proper assessment of the structure.

4.2 Steel Tensile Strength

One steel sample of 60 cm in length and 20 mm in diameter was extracted from the longitudinal reinforcement of a beam of the Open Air Theater. Tensile test was performed on the sample and the results can be summarized as below:

Table 2: Steel bar Tensile Test Results

Sample ref.	T20- Beam of the OAT
Nominal Dia. (cm)	2.0
Length (cm)	52.5
Weight (g)	1042.0
Yield Load (KN)	107.5
Yield Strength (MPa)	425
Ultimate Load (KN)	130.0
Tensile Strength (MPa)	514
Elongation (%)	12.5

ASTM A615-20 (Tensile Requirements)			
	Grade 40	Grade 60	Grade 80
Tensile Strength ,min. (MPa)	420	550	690
Yield Strength ,min. (MPa)	280	420	550
Bar Designation No.	Elongation min %		
10	11	9	7
13,16	12	9	7
19	12	9	7
22,25	---	8	7
29,32,36	---	7	6
43,57	---	7	6

According to ASTM A615, the tested steel sample, located at the middle height of the beam supporting the top ceiling of the OAT, passed the yield and ultimate strength requirements for Grade 40 steel; the tested steel bars are still serviceable as Grade 40.

4.3 Chloride, Sulfate and pH Tests in Concrete

4.3.1. Chloride Test:

The Chloride content in concrete will have an effect in the corrosion of reinforcing steel. Steel is naturally protected (passivated) from corrosion in the high pH (alkaline) environment when embedded in concrete. When chloride ions are present near reinforcing steel they override this passivation causing the initiation of the corrosion process. This is the more common cause of corrosion. Sources of chlorides can be external, such as from deicing chemicals and seawater, or internal from ingredient materials in concrete. The purpose of determining the chloride content in concrete is mainly to assess the potential built-in chloride attack which might cause localized reinforcement corrosion (pitting corrosion).

Chloride content test was performed on 7 concrete samples to determine the possible contamination by the mentioned chemical.

The results are mentioned in the below table and the testing reports can be found in the **Appendix**.

Table 3: Chloride Content Results

Sample Reference	Chloride content (%) by weight of concrete	*Chloride content (%) by weight of cement
AR4 (Mid Core Level)	0.05	0.25
AR4 (Upper Core Level)	0.01	0.05
AR6 (Upper Core Level)	0.01	0.05
AR6 (Lower Core Level)	0.03	0.15
AR7	0.08	0.40
AR-1/A-Bottom+B-Top	0.07	0.35
AR-1/A (Upper Core Level)	0.02	0.10

**By assuming that the cement content is 20% by weight of concrete*

Referring to ACI 222, for reinforced concrete “dry in service”, the max chloride limit is 0.2% by weight of cement. Therefore, the chloride content in 3 samples referenced as “**AR4 Mid Core Level, AR7 and AR-1/A-Bottom+B-Top**” exceeds the limitations of ACI 222.

4.3.2. Sulfate Test:

The sulfate content test was performed for 3 concrete samples to determine their possible contamination by the mentioned chemicals.

The results are summarized in the below table and the tests reports can be found in the **Appendix**.

Table 4: Sulfate Content Results

Sample Reference	Sulfate content (ppm) by weight of concrete
AR-1/A-Top	6200
AR-1/A-Bottom + B-Top	5800
AR7	5200

Knowing that the sulfate content in cement is around 3% as per ASTM C150 then the sulfate content in the concrete should be around 6000 ppm (based on 20% cement content in concrete).

As shown, the sulfate content in the sample tested is **normal if we assume that 20% cement content is in concrete**.

4.3.3. pH Test:

The pH test was performed on 2 concrete samples to check if there is any reaction of calcium hydroxide with carbon dioxide in the air, causing carbonation which reduces the **pH**.

The results are summarized in the below table and the testing reports can be found in the **Appendix**.

Table 5: pH Test Results

Sample Reference	Sulfate content (ppm) by weight of concrete
AR7	11.5
AR6-Top	9.2

Referring to ACI 364, the pH in concrete should be in the approximate range between **12 and 13**. As shown in the table above, the pH results of the tested samples are **out of the acceptable range**.

4.4 Depth of Carbonation in Concrete

The depth of carbonation on a concrete core is measured by spraying an indicator spray such as phenolphthalein on concrete surface or extracted core. The concrete color becomes pink when the concrete is alkaline but remains colorless when the concrete is carbonated. Carbonation reaction cause gradual neutralization of the concrete alkalinity, which chemically protect the reinforcing steel from corrosion. This reaction proceeds from the surface inwards as it is caused by the environment. The depth of carbonation was determined in lab from the external exposed side of the extracted concrete cores in their inner layer as requested by WJE. The results can be found in the table below with official reports available in the **Appendix**.

Table 6: Depth of Carbonation in Concrete

Sample Reference	Depth of Carbonation (mm)
OAT2	25
OAT1	16
AR1-B	22
AR3	7
AR5	11
AR6	8

The carbonation test results are fluctuated. The main purpose of this test is to make sure that the concrete is not carbonated beyond the concrete cover to reach the steel reinforcement.

4.5 Half-cell Potential

Half-cell potential measurements are simple, and virtually non-destructive techniques to assess the corrosion risk of steels in concrete. The measured values of the half-cell potential fluctuate due to several factors: the temperature, the type of reference electrode, and the pre-wetting time.

Corrosion of steels in concrete is a global problem for concrete structures. In Lebanon, many concrete buildings along the coastline have suffered corrosion due to chloride ingress from sea water. When steels corrode, there are usually signs of deterioration on the concrete surface such as rusting, cracking and spalling. However, once these signs of corrosion appear, it may be too late to prevent the advance of deterioration by repair works. Moreover, more than 50% of concrete structures near the coastline have again exhibited deterioration in the repaired area within ten years after repair works have been conducted. These facts suggest that repair works should be started before signs of corrosion on the concrete surface are detected. Moreover, the corrosion risk of steels in concrete should be assessed at regular intervals.

Tests done at Rachid Karami project showed the following:

Table 7: Half-cell potential measurements

Sample Reference	ASTM Interpretation in tested area
Slab	37% there is greater than 90% probability that steel is not corroded and 63% corrosion activity of the reinforcing steel is uncertain
Arch-1 (Right)	30% there is greater than 90% probability that steel is not corroded and 70% corrosion activity of the reinforcing steel is uncertain
Arch-2 (Left)	13% there is greater than 90% probability that steel is not corroded and 87% corrosion activity of the reinforcing steel is uncertain

4.6 Ground Penetrating Radar (GPR):

A non-destructive detection and imaging technique called ground penetrating radar (GPR) can be used to locate subsurface materials beneath the earth or inside a surface like concrete.

The Equipment used to detect steel location is called StructureScan Mini XT.

The StructureScan Mini XT is ideal for concrete inspection and evaluation. Easily and accurately locate the position and depth of metallic and non-metallic objects in concrete structures, including rebar, conduit, post-tension cables, pan decking, voids and service utilities.

The StructureScan Mini XT provides excellent near-surface resolution while also maintaining the ability to see deeper targets. The Mini XT provides multiple modes for data collection and interpretation:

Scan EZ: With the press of just one button, this mode provides the ideal amount of information with 2D data views for efficient mark-and-go surveys.

Scan Max: Focus mode is designed to simplify the data to better highlight embedment, locate voids and see closely spaced targets.

Scan 3D: 3D visualization is often used in complicated structural scenarios where the survey area may contain multiple levels of targets. This mode helps the user visualize congested areas and non-linear targets.

In our case we used to detect steel using the Scan Max Mode, in order to find steel rebar depth and spacing.

After conducting Test on site, files are saved in the device, then transferred to PC and opened on a software called Radan7 where we can visualize clearly what we detected on site.

The figures below show examples of GPR reading on Radan7, where each hyperbola peak represents a steel bar and the spacing between these peaks represents the spacing between steel bars.

The cover of concrete is the distance from the top to the peak.

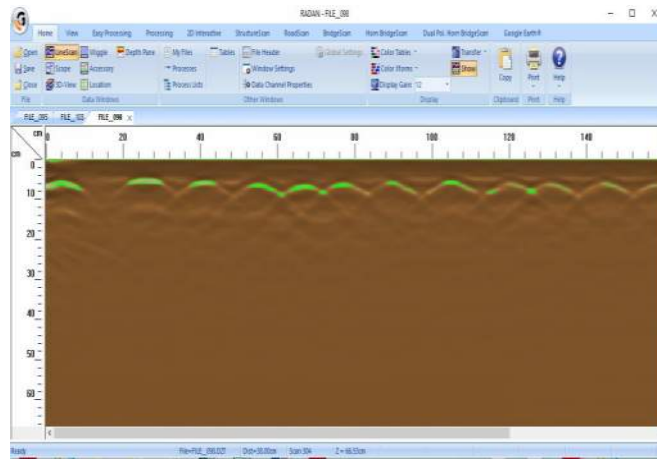


Figure 7: Arch 1 (Lower Part) – Front Vertical Rebar

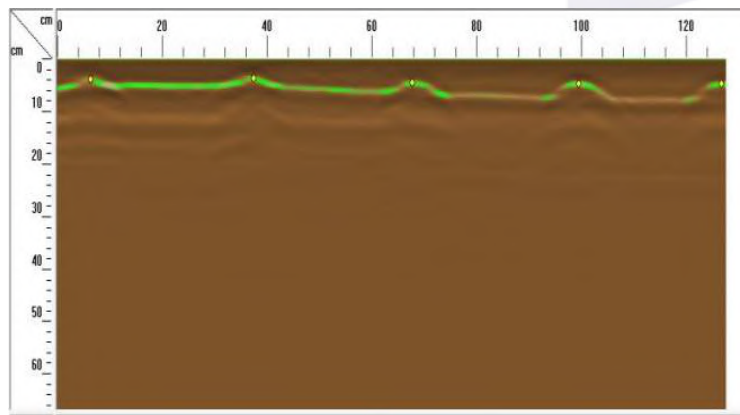


Figure 8: Arch 1 (Lower Part) – Front Horizontal Rebar

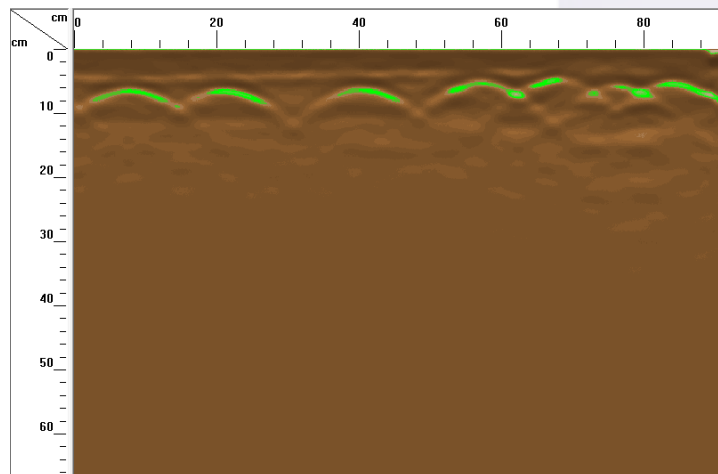


Figure 9: Arch1 (Lower part) - Side Vertical Rebar

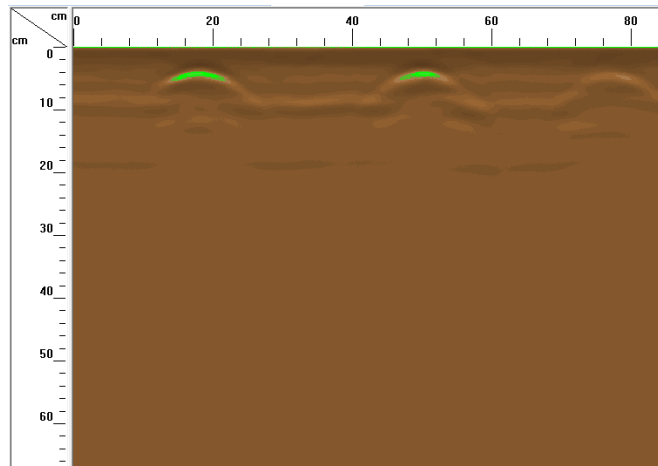


Figure 10: Arch 1 (Lower Part) – Side Horizontal Rebar

4.6.1 Arch

GPR with StructureScan Mini XT Provided the following steel bars distribution.

The Arch was detected from 2 sides Arch 1 (right part) Arch 2 (Left side):

Arch 1:

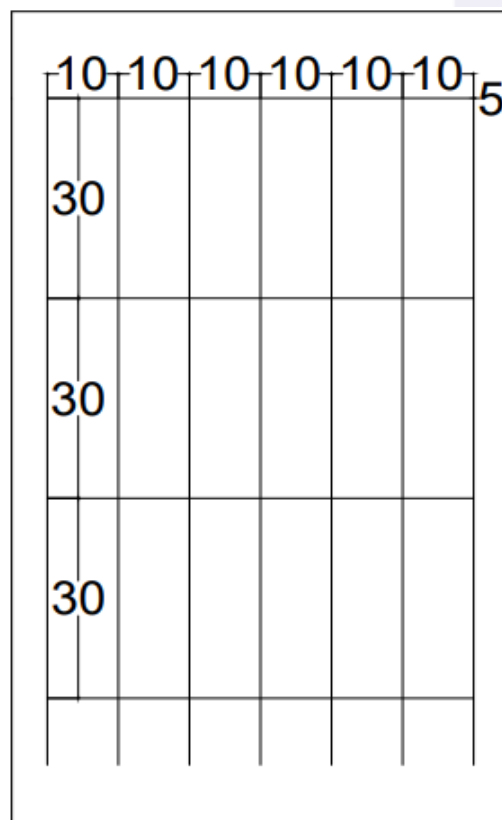


Figure 11: Arch 1 - Lower Side Section



Figure 12: Arch 1 - Lower Front Section

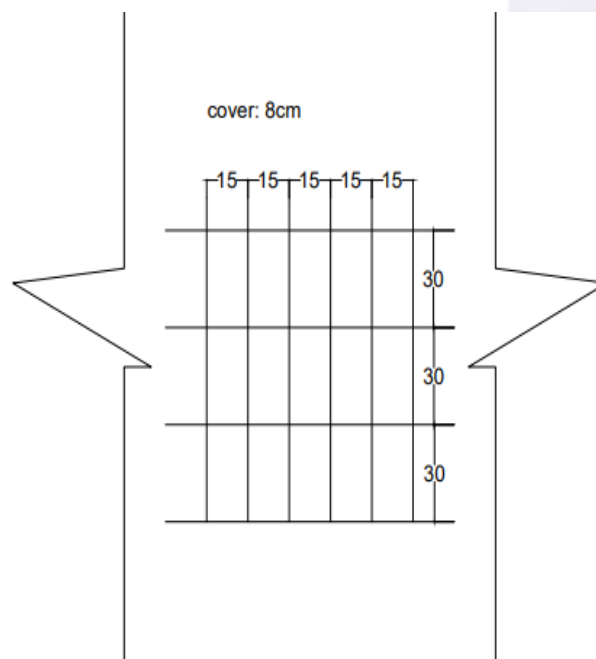


Figure 13: Arch 1 – Front Section / Lower part of point 2 (Middle Height)

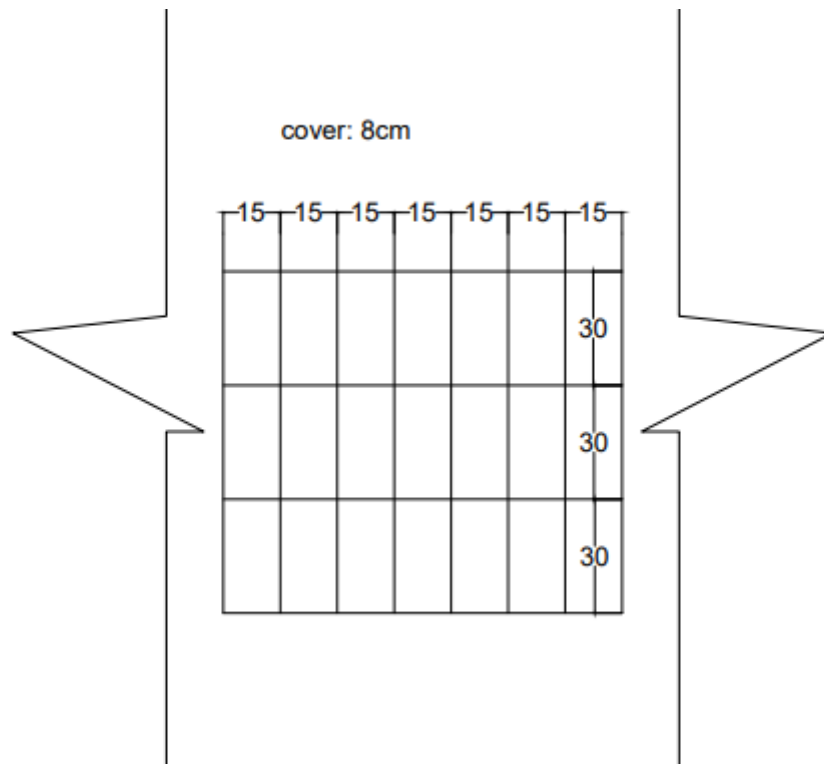


Figure 14: Arch 1 – Front Section / Upper part of point 2 (Middle Height)

Arch2:

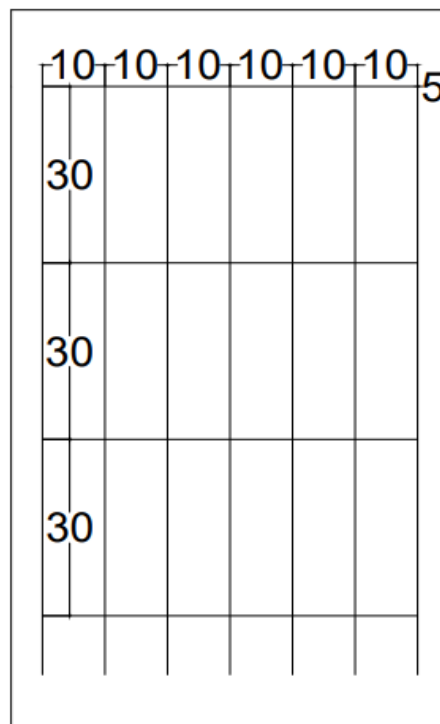


Figure 15: Arch 2 - Lower Side Section

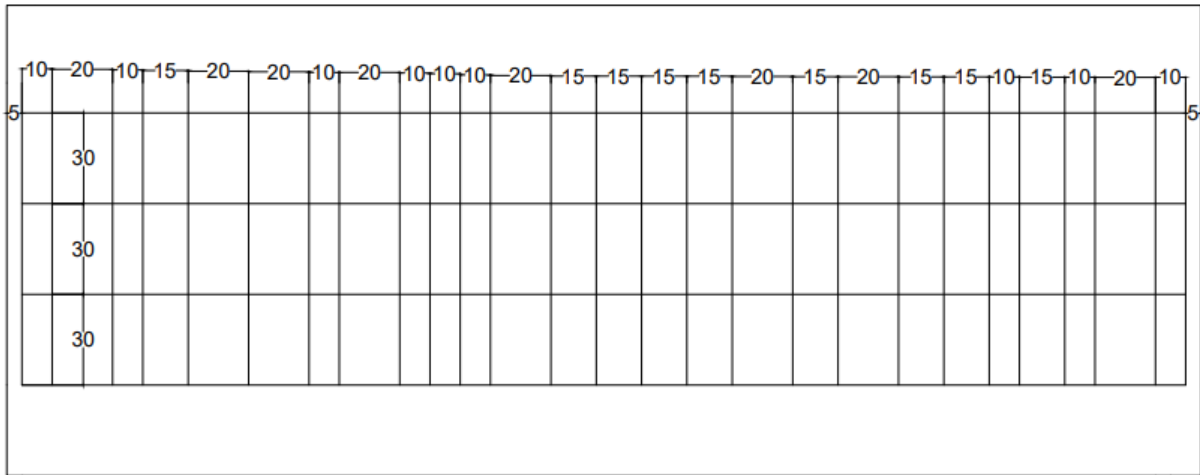


Figure 16: Arch 2 - Lower Front Section

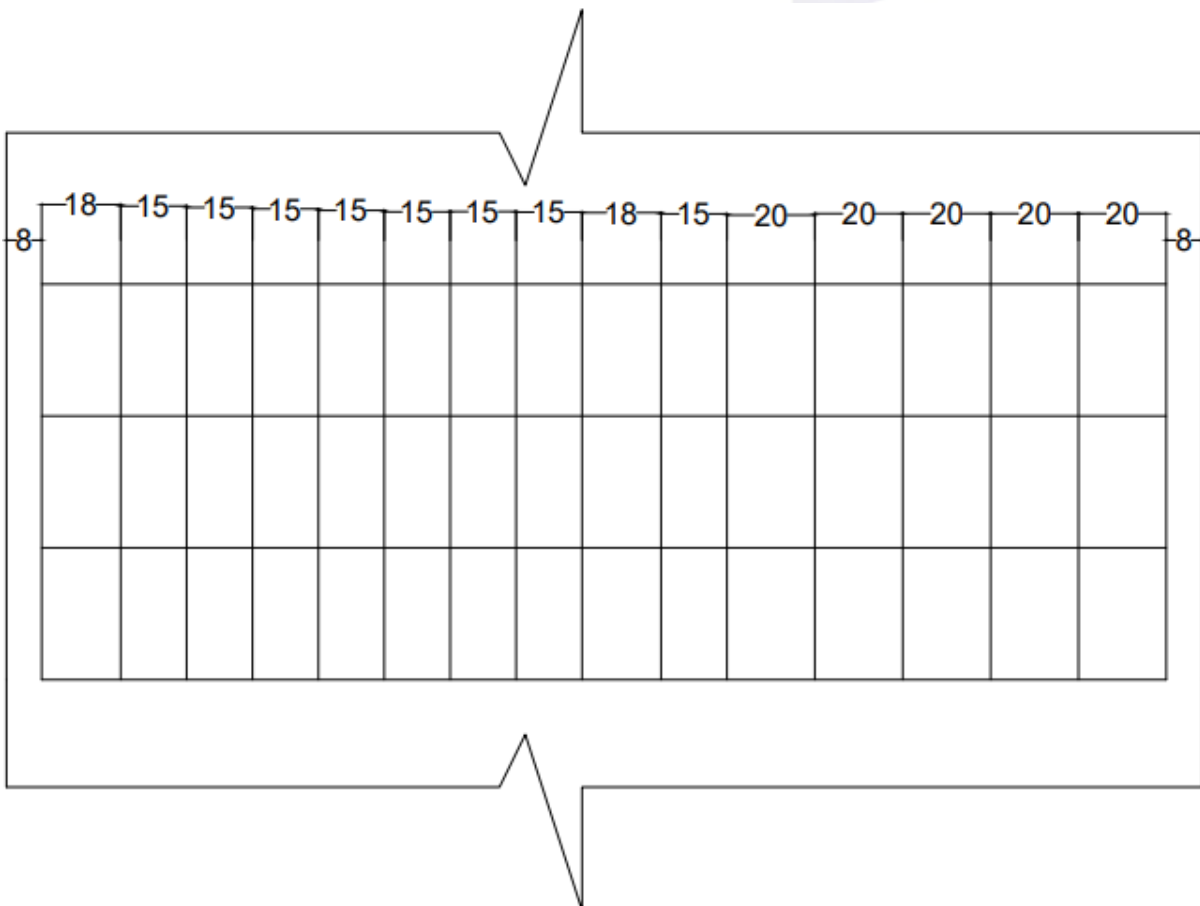


Figure 17: Arch 2 – Middle Height/Front Section

5. Conclusion

Based on the above analyses and test results the following can be noted:

- ACI 318-14 “Building Code Requirements for Structural Concrete”, Chapter 19 (Concrete Design & Durability Requirements), table 19.2.1.1 states the following: “For general application of normal weight & lightweight concrete, f_c' (the concrete compressive strength) shall not be less than 2500 psi [17 MPa]”. The minimum and the maximum strength results are 30.7 MPa and 60.5 MPa respectively.
- The strength results should be submitted to the structural engineer for proper analyses and structural assessment.
- The depth of carbonation in all of the tested locations showed results below 25 mm.
- The chloride content of the concrete samples in all tested locations are acceptable except 3 samples referenced as “AR4 Mid Core Level, AR7 and AR-1/A-Bottom+B-Top” exceeds the limitations of ACI 222.
- The sulfate content of the concrete samples in all tested locations is acceptable
- All evaluated locations have more than 60% of the reinforcing steel's corrosion activity that is uncertain.
- The steel used is mostly grade 40.

A structural evaluation of the project in view of design loading is recommended.

6. Appendix



Date : 26-Jul-22

Serial No : 65493

Page 1 of



TEST REPORT

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Tel: 01-737400; Fax: 01-737222"

Client : United Nations Educational Scientific and
UNESCO regional office building
01/850013

DETERMINATION OF ACID SOLUBLE CHLORIDE IN CONCRETE (BS 1881 P124)

Contractor : -----
Consultant : -----
Project : Preparation of a conservation management plan for Oscar
Niemeyers Rashid Karami International Fair in Tripoli, Lebanon
Sample Type : Concrete Core
Source : Arch

Work Order No. : ACTS-2201805
Sample Received on : 27-Jun-22
Sample Tested on : 14-Jul-22
Sampled by : ACTS

Customer Ref.	CHLORIDE (Cl ⁻), by weight of concrete	
	%	ppm
AR4 (Mid Core Level)	0.05	500
AR4 (Upper Core Level)	0.01	100
-----	-----	-----
-----	-----	-----
-----	-----	-----
-----	-----	-----



Tested by : Ahlam Bilal
Chemist

Reviewed by: Kassem Saleme
Chief Chemist

This test is under the scope of ISO 17025 accreditation.
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Client : United Nations Educational Scientific and
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01/850013

DETERMINATION OF ACID SOLUBLE CHLORIDE IN CONCRETE (BS 1881 P124)

Contractor : -----
Consultant : -----
Project : Preparation of a conservation management plan for Oscar
Niemeyers Rashid Karami International Fair in Tripoli, Lebanon
Sample Type : Concrete Core
Source : Arch

Work Order No. : ACTS-2201805
Sample Received on : 27-Jun-22

Sample Tested on : 14-Jul-22
Sampled by : ACTS

Customer Ref.	CHLORIDE (Cl ⁻), by weight of concrete	
	%	ppm
AR6 (Upper Core Level)	0.01	100
AR6 (Lower Core Level)	0.03	300
AR7	0.08	800
-----	-----	-----
-----	-----	-----
-----	-----	-----

Tested by : Ahlam Bilal
Chemist

Ahla Bilal



Reviewed by: Kassem Salemech
Chief Chemist

Kassem Salemech

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DETERMINATION OF ACID SOLUBLE CHLORIDE IN CONCRETE (BS 1881 P124)

Contractor : -----
Consultant : -----
Project : Preparation of a conservation management plan for Oscar
Niemeyers Rashid Karami International Fair in Tripoli, Lebanon
Sample Type : Concrete Core
Source : Arch

Work Order No. : ACTS-2201805
Sample Received on : 27-Jun-22

Sample Tested on : 14-Jul-22
Sampled by : ACTS

Customer Ref.	CHLORIDE (Cl ⁻), by weight of concrete	
	%	ppm
AR-1/A-Bottom+B-Top	0.07	700
-----	-----	-----
-----	-----	-----
-----	-----	-----
-----	-----	-----
-----	-----	-----

Tested by : Ahlam Bilal
Chemist

Ahla Bilal



Reviewed by: Kassem Salemech
Chief Chemist

Kassem Salemech

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DETERMINATION OF ACID SOLUBLE CHLORIDE IN CONCRETE (BS 1881 P124)

Contractor : -----

Consultant : -----

Project : Preparation of a conservation management plan for Oscar
Niemeyers Rashid Karami International Fair in Tripoli, Lebanon

Sample Type: Concrete Core

Source : Arch

Work Order No. : ACTS-2201812

Sample Received on : 27-Jun-22

Sample Tested on : 14-Jul-22

Sampled by : ACTS

Customer Ref.	CHLORIDE (Cl ⁻), by weight of concrete	
	%	ppm
AR-I/A (Upper Core Level)	0.02	200
-----	-----	-----
-----	-----	-----
-----	-----	-----
-----	-----	-----
-----	-----	-----

Tested by : Ahlam Bilal
Chemist

Ahla Bilal



Reviewed by: Kassem Salemech
Chief Chemist

Kassem Salemech

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DETERMINATION OF ACID SOLUBLE SULFATE IN CONCRETE (BS 1881 P124)

<p>Contractor : ----- Consultant : ----- Project : Preparation of a conservation management plan for Oscar Niemeyers Rashid Karami International Fair in Tripoli, Lebanon Sample Type : Concrete Core Source : Arch</p>	<p>Work Order No. : ACTS-2201721 Sample Received on : 27-Jun-22 Sample Tested on : 15-Jul-22 Sampled by : ACTS</p>
--	--

Sample Ref.	SULFATE (SO ₃)	
	%	ppm
AR-1/A-Top	0.62	6200
AR-1/A-Bottom + B-Top	0.58	5800
AR7	0.53	5300
-----	-----	-----
-----	-----	-----
-----	-----	-----



Tested by : Ahlam Bilal
Chemist

Reviewed by : Kassem Salemech
Chief Chemist

This test is under the scope of ISO 17025 accreditation.
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Client : United Nations Educational Scientific and
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UNESCO regional office building
01/850013

DETERMINATION OF pH

Contractor : -----
Consultant : -----
Project : Preparation of a conservation management plan for Oscar
Niemeyers Rashid Karami International Fair in Tripoli, Lebanon
Sample Type : Concrete Core
Sample Source : Arch

Work Order No. : ACTS-2201721
Sample Received on : 27-Jun-22
Sample Tested on : 15-Jul-22
Sampled by : ACTS

Sample Ref.	pH in Distilled Water
	at 28 °C
AR7	11.55
-----	-----
-----	-----
-----	-----
-----	-----
-----	-----

Tested by : Ahlam Bilal
Chemist



Reviewed by : Kassem Saleh
Chief Chemist

Samples will be disposed after one week from the delivery date of report.

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Tel: 01-737400; Fax: 01-737222"

Client : United Nations Educational Scientific and
Cultural Organization -UNESCO
UNESCO regional office building
01/850013

DETERMINATION OF pH

Contractor : -----
Consultant : -----
Project : Preparation of a conservation management plan for Oscar
Niemeyers Rashid Karami International Fair in Tripoli, Lebanon
Sample Type : Concrete Core
Sample Source : Arch

Work Order No. : ACTS-2201721
Sample Received on : 27-Jun-22
Sample Tested on : 15-Jul-22
Sampled by : ACTS

Sample Ref.	pH in Distilled Water
	at 28 °C
AR6-Top	9.20
-----	-----
-----	-----
-----	-----
-----	-----
-----	-----

Tested by : Ahlam Bilal
Chemist



Reviewed by : Kassem Saleh
Chief Chemist

Samples will be disposed after one week from the delivery date of report.

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Customer : United Nations Educational Scientific and
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TENSILE STRENGTH ON STEEL BARS (A.S.T.M. A-370)

Contractor : --- Work Order No. : ACTS-2201873
Consultant : --- Sample Received on : 27-Jun-22
Project : Preparation of a conservation management plan for Oscar Niems Sample Tested on : 27-Jul-22
Sample Type : Steel Bar Sampled by : ACTS
Source : Beam of the Open Air Theater

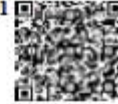
Sample Ref.	T20	-----	-----	ASTM A615-20 (Tensile Requirements)			
Nom. Dia. (cm)	2.0	-----	-----		Grade 40	Grade 60	Grade 80
Length (cm)	52.5	-----	-----	Tensile Strength ,min. (MPa)	420	550	690
Weight (g)	1042.0	-----	-----	Yield Strength ,min. (MPa)	280	420	550
Act. Dia. (cm)	1.79	-----	-----	Bar Designation No.	Elongation min %		
Act. Area (cm ²)	2.5284	-----	-----	10	11	9	7
% WT (+/-)	-19.520	-----	-----	13,16	12	9	7
Y. Load (kN)	107.5	-----	-----	19	12	9	7
Yield Str. (MPa)	425	-----	-----	22,25	—	8	7
Yield Str. (Kg/cm ²)	4337	-----	-----	29,32,36	—	7	6
U. Load (kN)	130.0	-----	-----	43,57	—	7	6
U. Str. (MPa)	514	-----	-----	ASTM A706 (Tensile Requirements)			
U. Str. (Kg/cm ²)	5245	-----	-----	Tensile Strength ,min. (MPa)	550		
U. Str / Y. Str. Ratio	1.21	-----	-----	Yield Strength ,min. (MPa)	420		
L 1 (cm)	20.0	-----	-----	Yield Strength ,max. (MPa)	540		
L 2 (cm)	22.5	-----	-----	Bar Designation No.	Elongation min %		
Elongation (%)	12.5	-----	-----	10,13,16,19	14		
				22,25,29,32,36	12		
				43,57	10		

Reviewed by: Ahmad Toufaily
Material Engineer

Approved by: Antonio Bouty
Branch Manager

Samples will be disposed after one week from the delivery date of report.

Auto



TEST REPORT

Tested at : "ACTS Central Laboratory, Beirut,
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Client : United Nations Educational Scientific and Cultural
UNESCO regional office building
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DEPTH OF CARBONATION IN CONCRETE

Contractor : ---
Consultant : ---
Project : Preparation of a conservation management plan for Oscar Niem
Sample Type : Concrete Core

Work Order No. : ACTS-2201721
Tested on : 12-Jul-22
Extracted by : ACTS
Sampled by : ACTS

Sample Ref.	Location & Structural Ref.	Depth of Carbonation (mm)
OAT-2	Bottom Side of the Open Air Theater	30
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Reviewed by : Bassam Abdo
Technician

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Approved by : Antonio Bouty
Branch Manager

Antonio Bouty

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Customer: United Nations Educational Scientific and
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DETERMINATION OF CEMENT CONTENT (ASTM C1084)

Contractor : -----
Consultant : -----
Project : Preparation of a conservation management plan for
Sample Type : Concrete Core
Source : Arch

Work Order No. : ACTS-2201721
Sample Received on : 27-Jun-22
Sample Tested on : 26-Jul-22
Sampled by : ACTS

Sample Ref.	Cement Content*, Kg/m ³
AR3	546

***Remarks:**
The test was done according to ASTM C1084, oxide analysis procedure, soluble silica sub-procedure. The above mentioned test results were calculated based on the assumption that the only source of silica is from the cement, since there is no information given from the client about the concrete composition of the tested samples. The silica content in cement is assumed to be 21% as stipulated in ASTM C1084, section 8.1.4.5.

Tested by:
Ahlam Bilal

Ahlam Bilal
Chemist

Approved by:
Kassem Saleme

Kassem Saleme
Chief Chemist

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Client : United Nations Educational Scientific and Cultural
UNESCO regional office building
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DEPTH OF CARBONATION IN CONCRETE

Contractor : —
Consultant : —
Project : Preparation of a conservation management plan for Oscar Niem
Sample Type : Concrete Core

Work Order No. : ACTS-2201721
Tested on : 12-Jul-22
Extracted by : ACTS
Sampled by : ACTS

Sample Ref.	Location & Structural Ref.	Depth of Carbonation (mm)
AR-1/A	Arch	0
AR3	Arch	0
AR5	Arch	28
AR6	Arch	0
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Reviewed by : Bassam Abdo
Technician

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Approved by : Antonio Bouty
Branch Manager

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Customer: United Nations Educational Scientific and UNESCO regional office building 01/850013

DETERMINATION OF CEMENT CONTENT (ASTM C1084)

Contractor : ——— **Work Order No. :** ACTS-2201721
Consultant : ——— **Sample Received on :** 27-Jun-22
Project : Preparation of a conservation management plan for **Sample Tested on :** 26-Jul-22
Sample Type : Concrete Core **Sampled by :** ACTS
Source : Arch

Sample Ref.	Cement Content*, Kg/m ³
AR7	504

***Remarks:**

The test was done according to ASTM C1084, oxide analysis procedure, soluble silica sub-procedure. The above mentioned test results were calculated based on the assumption that the only source of silica is from the cement, since there is no information given from the client about the concrete composition of the tested samples. The silica content in cement is assumed to be 21% as stipulated in ASTM C1084, section 8.1.4.5.

Tested by:
Ahiam Bilal

Ahiam Bilal
Chemist

Approved by:
Kassem Saleme

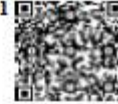
Kassem Saleme
Chief Chemist

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Client : United Nations Educational Scientific and Cultural
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01/850013

DEPTH OF CARBONATION IN CONCRETE

Contractor : ---
Consultant : ---
Project : Preparation of a conservation management plan for Oscar Niem
Sample Type : Concrete Core

Work Order No. : ACTS-2201721
Tested on : 12-Jul-22
Extracted by : ACTS
Sampled by : ACTS

Sample Ref.	Location & Structural Ref.	Depth of Carbonation (mm)
OAT-1	Beam of the Open Air Theater	0
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Reviewed by : Bassam Abdo
Technician

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Approved by : Antonio Bouty
Branch Manager

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TEST REPORT

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Tel: 01-737400; Fax: 01-737222*

Client: United Nations Educational Scientific and Cultural Organization -UNESCO regional office building
01/050013

Compressive Strength of Concrete Cores (ASTM C42)

Contractor : ----
Consultant : ----
Project : Preparation of a conservation management plan for Ouseir Nisrayers Rashid Karami
Sample Type : Concrete Core

Work Order No. : ACTS-2201721
Sample Received on: 27-Jun-22
Date of Testing : 12-Jul-22
Extracted By : ACTS

Drilling Details

Date of Drilling : 27-Jun-22
Location of Drilled Samples : Open Air Theater
Standard Method : ASTM C42

Core Ref.	GA7-1	----	----	----	----	----
Structural Ref.	Beam	----	----	----	----	----
Direction of drilling	Horizontal	----	----	----	----	----
Time of Drilling	10:00	----	----	----	----	----
Moisture History	Time of casting after drilling	10:10	----	----	----	----
	Date of casting after test preparation	11/7/2022	----	----	----	----
	Time of casting after test preparation	1:00	----	----	----	----
	Time of Testing	11:00	----	----	----	----
Cast Date	----	----	----	----	----	----
Age (days)	----	----	----	----	----	----
Average Diameter (mm)	74.0	----	----	----	----	----
Length of core after drilling (mm)	175	----	----	----	----	----
Length of capped core (mm)	----	----	----	----	----	----
Length of uncapped core (mm)	100	----	----	----	----	----
Nominal Max Size of Aggregate (mm)	----	----	----	----	----	----
Weight in air (g)	1047	----	----	----	----	----
Area (mm ²)	4301	----	----	----	----	----
Load (kN)	142.2	----	----	----	----	----
SLTD	1.35	----	----	----	----	----
Correction factor for length	0.942	----	----	----	----	----
Density (kg/m ³)	2448	----	----	----	----	----
Compressive Strength (MPa)	31.0	----	----	----	----	----
Type of Fracture	2-A	----	----	----	----	----
Defects	No Deloids	----	----	----	----	----

Remark :

Cores of 74 mm diameter were extracted instead of 94 mm as per customer request to avoid cutting steel reinforcement

Reviewed by : Bassam Abdo
Technician



Approved by: Antoine Bouty
Branch Manager



This test is under the scope of ISO 17025 accreditation.



TEST REPORT

Tested at : *ACTS Central Laboratory, Beirut,
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P.O.Box: 145918-Code:1105-2080
Tel: 01-737400; Fax: 01-737222*

Client: United Nations Educational Scientific and Cultural Organization
UNESCO regional office building
01/850013

Compressive Strength of Concrete Cores (ASTM C42)

Contractor : ———
Consultant : ———
Project : Preparation of a conservation management plan for Oscar Niemeyer Raashid Karami
Sample Type : Concrete Core

Work Order No. : ACTS-2201721
Sample Received on: 27-Jun-22
Date of Testing : 12-Jul-22
Extracted By : ACTS

Drilling Details

Date of Drilling : 27-Jun-22
Location of Drilled Samples : Arch
Standard Method : ASTM C42

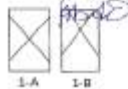
Core Ref.	AB-1/3	AB3	AB5	AB6	—	—
Structural Ref.	Arch	Arch	Arch	Arch	—	—
Direction of Drilling	Horizontal	Horizontal	Horizontal	Horizontal	—	—
Time of Drilling	11:30	12:00	3:30	4:00	—	—
Moisture History	Time of sealing after drilling	11:40	12:10	3:45	4:10	—
	Date of sealing after seal preparation	11/7/2022	11/7/2022	11/7/2022	11/7/2022	—
	Time of sealing after seal preparation	1:10	1:40	1:50	2:00	—
Time of Testing	11:10	11:30	11:55	12:10	—	—
Cast Date	—	—	—	—	—	—
Age (days)	—	—	—	—	—	—
Average Diameter (mm)	74.0	74.0	74.0	74.0	—	—
Length of core after drilling (mm)	190	120	75	105	—	—
Length of capped core (mm)	—	—	—	—	—	—
Length of uncapped core (mm)	120	100	80	85	—	—
Nominal Max Size of Aggregate (mm)	—	—	—	—	—	—
Weight in air (g)	1252	1087	853	893	—	—
Area (mm ²)	4301	4301	4301	4301	—	—
Load (kN)	194.0	209.4	308.7	194.2	—	—
f _{LD}	1.62	1.35	1.08	1.15	—	—
Correction factor for length	0.970	0.942	0.889	0.906	—	—
Density (kg/m ³)	2428	2528	2488	2448	—	—
Compressive Strength (MPa)	43.5	46.8	64.8	41.8	—	—
Type of Fracture	2-A	2-A	2-A	2-A	—	—
Defects	No Defects	No Defects	No Defects	Sand Lump	—	—

Remark :

Cores of 74 mm diameter were extracted instead of 94 mm as per customer request to avoid cutting steel reinforcement

Reviewed by : Bassam Abdo

Technician



This test is under the scope of ISO 17025 accreditation.

Approved by: Antonio Boust

Branch Manager



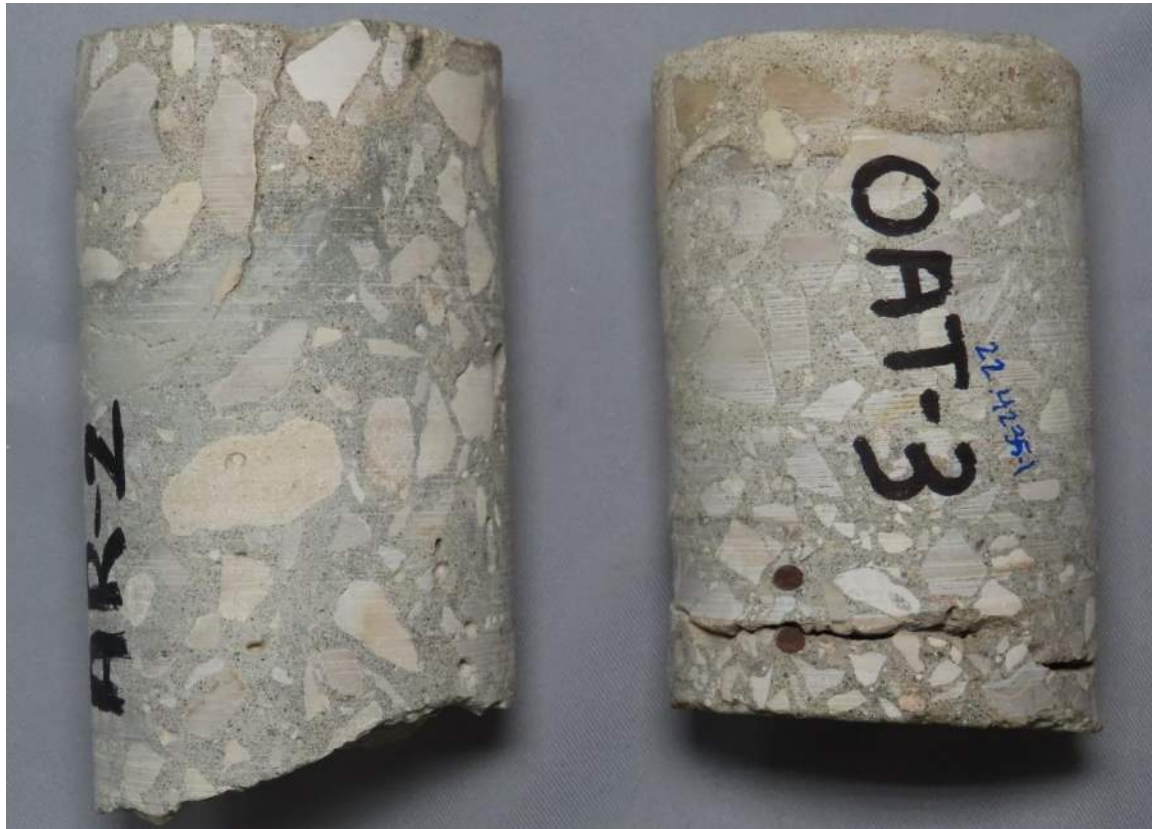
APPENDIX C. PETROGRAPHIC EXAMINATION OF TWO CONCRETE CORES



Rashid Karami International Fairgrounds

Petrographic Examination of Two Concrete Cores

Tripoli, Lebanon



FINAL REPORT

September 26, 2022

WJE No. 2022.4235.1

PREPARED FOR:

UNESCO Beirut Office
Beirut, Lebanon

PREPARED BY:

Wiss, Janney, Elstner Associates, Inc.
9655 Sweet Valley Drive, Suite 3
Cleveland, Ohio 44125
216.642.2300 tel



Rashid Karami International Fairgrounds

Petrographic Examination of Two Concrete Cores

Tripoli, Lebanon

A handwritten signature in black ink, reading "Karla Salahshour", is positioned above a horizontal line.

Karla Salahshour, PE
Petrographer, Senior Associate

FINAL REPORT

September 26, 2022

PREPARED FOR:

UNESCO Beirut Office
Beirut, Lebanon

PREPARED BY:

Wiss, Janney, Elstner Associates, Inc.
9655 Sweet Valley Drive, Suite 3
Cleveland, Ohio 44125
216.642.2300 tel

INTRODUCTION

Wiss, Janney, Elstner Associates, Inc. (WJE) completed petrographic examinations on two concrete core samples extracted from the Grand Arch (Arch) and a collapsed area of the Open-Air Theatre (OAT) at the Rashid Karami International Fairgrounds (RKIF) in Tripoli, Lebanon (Figure 1 and Figure 2).

The OAT generally consists of five major components that are the three-level main seating area, bridge, two-level stage, reflecting pool, and Arch. The Arch spans a bridge over a reflecting pool. The portion of the OAT that collapsed is the underside (soffit) of the top level of a three-level seating area structure for the theater. The Arch and the seating area structures exhibit concrete deterioration. Both structures are cast-in-place reinforced concrete that were constructed in the late 1960s.

Petrographic examination was requested on cores extracted from the Arch and the OAT to characterize the concrete.



Figure 1. Core extraction of an Arch concrete sample used for laboratory testing.



Figure 2. Collapsed soffit slab section that was cored for the studies.

SAMPLES

Two core samples were received on August 2, 2022, for the studies (Figure 3). One core sample was labeled "AR-2" and was extracted horizontally from the exterior of the Arch at a construction joint on the east leg of the arch near the base (Figure 1). The exterior surface of the core represented a formed concrete surface with visible formboard striations, and the interior is a fractured concrete surface. The core length is 11.5 cm (4-1/2 inches) to 13.3 cm (5-1/4 inches) and represents only a partial thickness of the Arch.

The second core was labeled "OAT-3" and was extracted vertically from a collapsed portion of the slab soffit (Figure 2). The top of the core consists of remnants of a soft, friable mortar that is located overtop of a topping concrete, and the bottom of the core is a formed surfaced of the soffit slab concrete. The topping and a 5 cm (2-inch) thick reinforced slab concretes represent two different concrete placements for the OAT-3 core. The topping may have been overpour from the placement of the OAT beams and slab above the soffit slab.



Figure 3. As-received appearance of the exterior/top (upper left), interior/bottom (upper right), and side of Core AR-2 (left in each image) and Core OAT-3 (right in each image).

LABORATORY TESTING

Methodology

Both cores were examined microscopically in accordance with the procedures described in ASTM C856, *Standard Practice for Petrographic Examination of Hardened Concrete*. Microscope examination and various tests conducted during the petrographic examination are designed to elicit specific information about the composition and condition of the concrete. Lapped sections of prepared cross-sectional surfaces and fracture surfaces were examined at magnifications up to 90X using a stereomicroscope. A thin section was prepared from near the exterior surface of Core AR-2 and along the interface between the concrete mixes in Core OAT-3 to further assess paste and aggregate characteristics. The thin sections were examined at magnifications ranging from 50X to 630X using a petrographic (polarized-light) microscope.

Findings

Pertinent information from the petrographic examination is summarized below.

Arch Core AR-2

Core AR-2 was reportedly extracted through a construction joint. An interface from the exterior surface through the core sample represents two separate concrete placements, and both concretes remain bonded to each with no voids along the interface. The interface was identified by a difference in paste color on both sides and a thin band of dark gray paste, although the concrete constituents on both sides are compositionally similar (Figure 4).

Aggregate

The coarse aggregate is a crushed (manufactured) limestone with a maximum nominal size of 1.3 cm (1/2 inch). The coarse aggregate particles are gray, tan, to buff in color and angular to sub-angular in shape. There is no preferred orientation of the elongated coarse aggregates. The coarse aggregates are well graded. Aggregates are non-uniformly distributed throughout the core with an increased concentration near the exterior, formed surface. Laboratory-induced freshly fractured surfaces pass through coarse aggregates consistent with a firm paste-aggregate bond.

The fine aggregate contains both siliceous and calcareous particles of a uniform, fine gradation (Figure 5). The typical size of the fine aggregate is 0.15 to 0.25 mm (passing the No. 50 sieve). The fine aggregate consists of quartz, feldspar, limestone, chert, granitic rock fragments, basalt fragments, shells, iron-containing particles, and wood fragments.

No deleterious reactions were observed involving the coarse or fine aggregates.



Figure 4. Core AR-2 - Lapped surface. The interface presumed to represent the construction joint is outlined by a yellow dashed line. A horizontal crack is marked with a red dashed line.

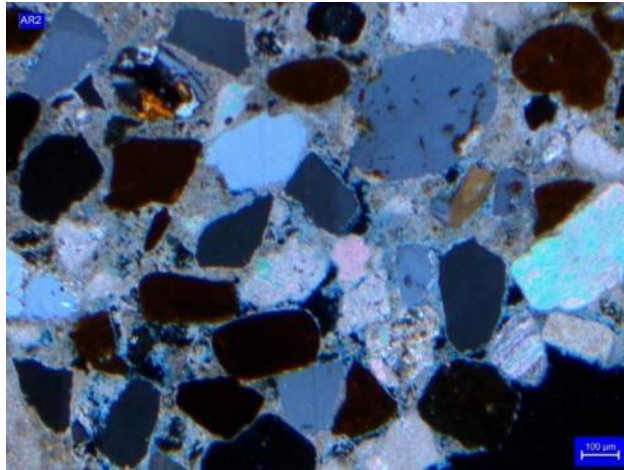


Figure 5. Core AR-2 - Siliceous (black, gray, blueish particles) and calcareous (brightly colored particles) fine aggregates; pictured in thin section under cross-polarized light.

Paste

The paste ranges from light to dark gray to tan in color (Figure 6). The paste nearest the exterior surface is tan due to carbonation of the paste, measured to a maximum depth of 1.3 cm (1/2 inch) on a freshly fractured surface. The body of the core contains light to dark gray paste with dark gray thin bands of paste (referred to as stringers) that meander throughout the core (Figure 7) and paste-rich zones deficient in coarse aggregate resulting in voids (Figure 8). The overall differences in paste color indicates incomplete initial mixing and possible differences in batching and/or mixing between the concrete placements. The dark gray stringers are primarily observed along the interface presumed to represent the construction joint and suggest moisture transfer occurred between the separate placements. Stringers observed within the body of the concrete placements indicate the material was workable at the time of placement and an intermixing of plastic material prior to final set. The laboratory-induced fracture surfaces passed through these stringers rather than along them indicating that the concrete is well bonded across these non-homogenous regions.

The paste is soft and can be easily scratched using a copper probe in paste-rich areas and is slightly harder in areas containing coarse and fine aggregate and within the darker gray paste zones. Variability in volume of aggregate is also consistent with incomplete initial mixing.

Residual portland cement particles were observed in thin section (Figure 9). The residual cement is very coarsely ground with maximum size in excess of 100 microns. Residual cement is also abundant in volume and closely spaced, consistent with a moderately low water-to-cement ratio (w/c). Given the extreme variation in paste properties in Core AR-2, an estimate of w/c is not provided.

The paste contains small, spherical and sub-spherical voids that are non-uniformly distributed (Figure 6). The presence of spherical voids could be a natural result of the mixing of a workable, paste-rich material and is not necessarily indicative of the use of an air-entraining admixture, which is unlikely to have been used in this region at the time of construction. Voids are also present as larger, irregularly shaped bleed

water channels and water gain voids. Despite variability in the concrete due to incomplete initial mixing, no large voids from incomplete consolidation/compaction were observed.

The unit weight was measured for a representative portion of the core according to Section 9, *Unit Weight and Loss of Free Water*, of ASTM C1084, *Standard Test Method for Portland-Cement Content of Hardened Hydraulic-Cement Concrete*. The unit weight is 2000 kilogram per cubic meter (143.6 pounds per cubic foot).

No reinforcement was intersected by the sample although reported to be located at 1.6 to 1.9 cm (5/8 to 3/4 inches) for stirrups and 3.2 cm (1-1/4 inches) to the vertical reinforcing bars.



Figure 6. Core AR-2 - Light to dark gray mottling of the paste. Spherical and sub-spherical voids are visible.

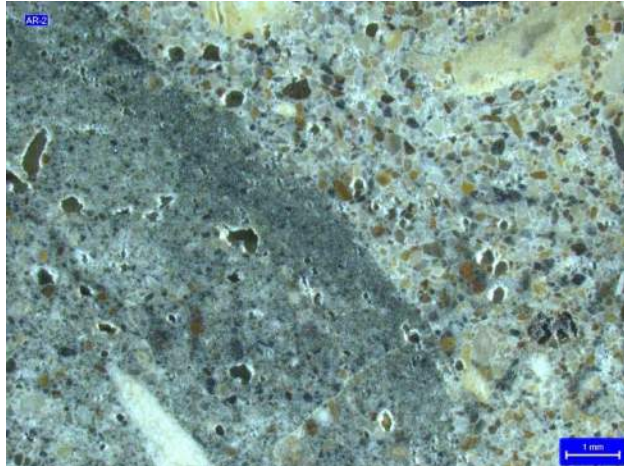


Figure 7. Core AR-2 - Dark gray paste adjacent area with increased sand volume (upper right portion of image).

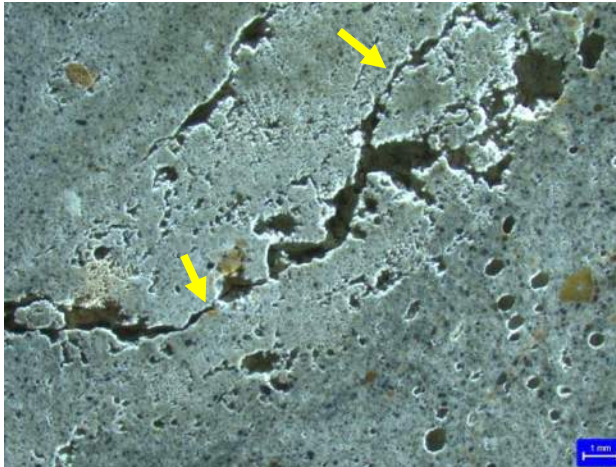


Figure 8. Core AR-2 - Voids intersected by crack (arrows) through a paste-rich region in the core.

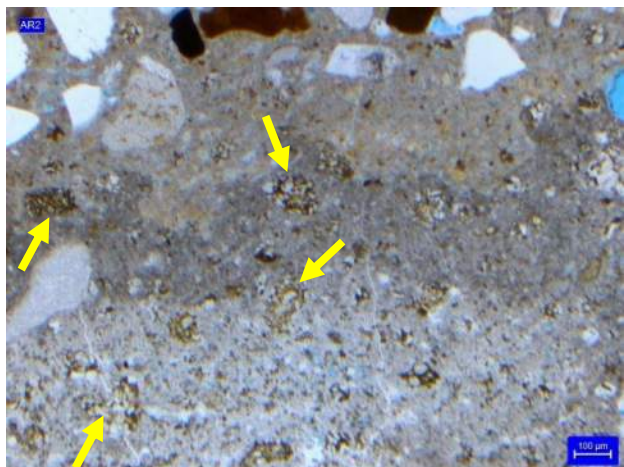


Figure 9. Core AR-2 - Residual portland cement (arrows) within zones of varying permeability as noted by penetration of (or lack of) blue dyed epoxy used in thin section preparation; pictured in thin section under plane-polarized light.

Distress

Core AR-2 was extracted over a horizontal crack visible along the exterior surface that intersects the core perimeter at a depth of 5 cm (2 inches) (Figure 3, Figure 10). This crack passes through the presumed construction joint, darker gray paste stringers, a paste-rich region (Figure 8), and through and around coarse aggregates.

No other distress was observed in the core sample.

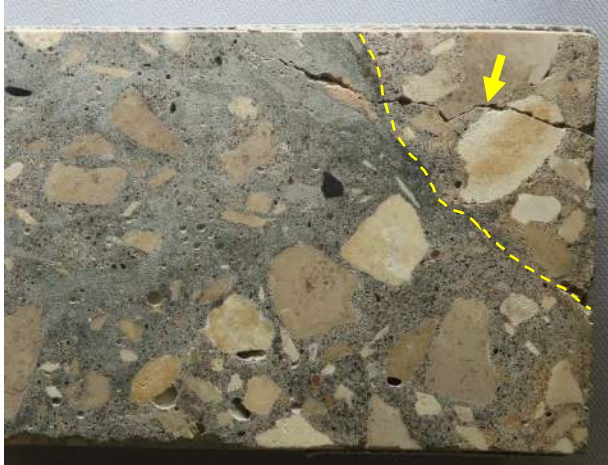


Figure 10. Core AR-2 - Crack (arrow) through the exterior portion. The interface presumed to represent the construction joint is outlined by a dashed line.

OAT Core OAT-3

Core OAT-3 contains two concrete placements that represent a topping layer that was placed on a 5 cm (2-inch thick) slab comprising the soffit of the seating area (Figure 11). Each of these mixtures will be discussed below.

Topping Layer

The topping layer on the soffit slab is suspected to be from the overpour or spillage from the placement of OAT beams and slab above. The topping layer is 6.7 cm (2-5/8-inches) thick and contains compositionally similar concrete constituents to the Arch concrete mix. The aggregate consists of a crushed limestone coarse aggregate with a maximum nominal size of 1.25 cm (1/2 inch) that is uniformly distributed and absent of a significant volume of intermediate-sized particles. Elongated particles have no preferential alignment. The fine aggregate consists of siliceous and calcareous with a typical uniform gradation of 0.15 to 0.25 mm (Figure 12).

The paste is mottled in color from light to dark gray. The lighter gray areas correspond to softer, more porous paste whereas the paste is harder and less permeable in the darker gray areas, consistent with variability in w/c and incomplete initial mixing (Figure 13). The paste is not air-entrained but bleed water channels and water gain voids are frequently observed.

The top region of the topping layer concrete is deficient in coarse aggregates and exhibits an increased porosity. This paste is tan in color, which corresponds to the depth of measured paste carbonation to 1.6 cm (5/8 inch). Additionally, a 0.7-mm (0.25 inches)-thick paste-rich layer is present along the surface of the topping layer. These features suggest elevated w/c near the surface of this placement and possible settlement of the concrete.

Microcracks were frequently observed throughout the paste in thin section. No other distress was observed within the topping concrete.



Figure 11. Core OAT-3 - Two concrete placements intersected by Core OAT-3.

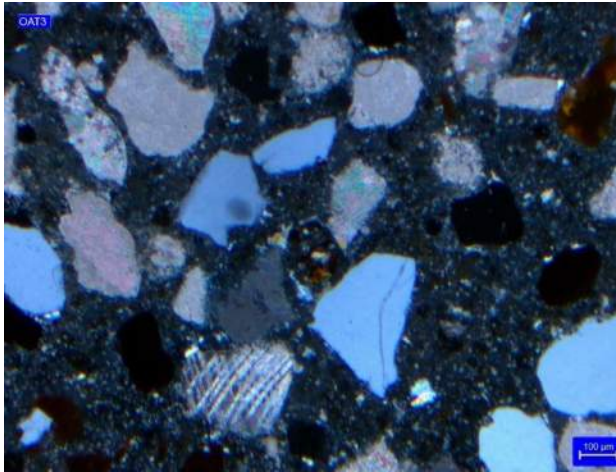


Figure 12. Core OAT-3 - Siliceous (black, gray, blueish particles) and calcareous (brightly colored particles) fine aggregates in the topping layer concrete; pictured in thin section under cross-polarized light.

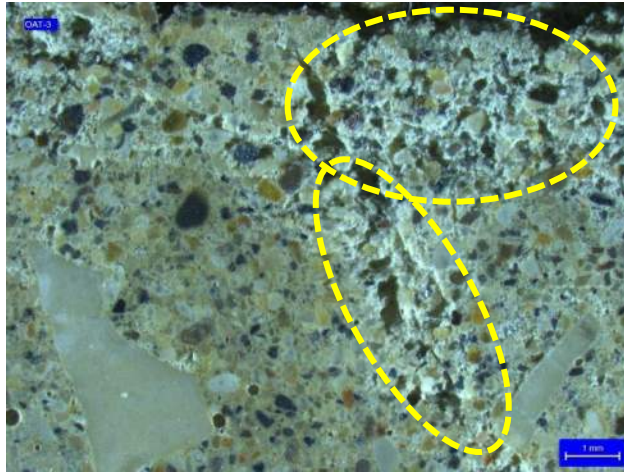


Figure 13. Core OAT-3 - Lighter colored, weaker paste (circled region) along the top surface of the topping layer compared to adjacent more competent paste.

Interface

The topping layer and soffit slab concretes remain bonded to each other during coring, shipment, and sample preparation (Figure 14). Additionally, the concretes remained bonded to each other upon fracturing the core longitudinally in the laboratory.

Textural features of the concrete along the interface suggest that the soffit slab was in place prior to placement of the topping layer. These features include slight carbonation of the slab paste (Figure 15) and an increased elevated w/c in the topping layer adjacent the interface. The interface between the two concretes is planar with no evidence of mechanical abrasion or roughening.

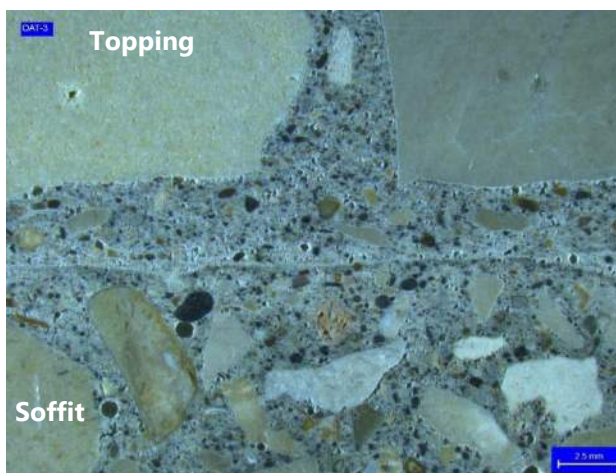


Figure 14. Core OAT-3 - Two concrete mixes (topping layer and soffit) remained bonded along their interface within Core OAT-3.

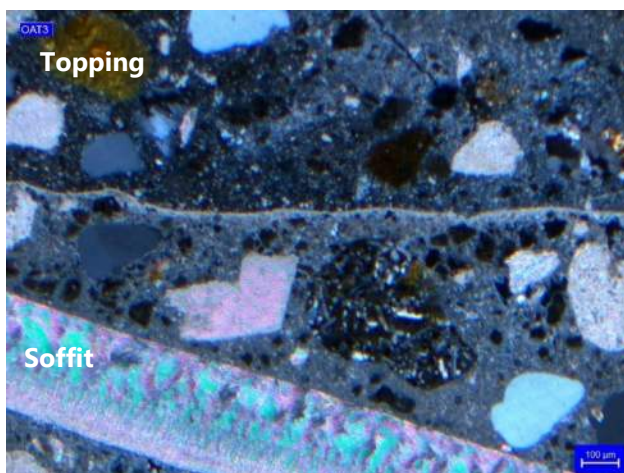


Figure 15. Core OAT-3 - Slight carbonation (brightly colored band) of the soffit slab paste along the interface with the topping.

Soffit Slab

The soffit slab thickness is 48 mm (1-7/8-inches) thick and differs from the topping layer concrete and Arch concrete solely by the size and gradation of coarse aggregates and cement fineness; otherwise, the composition of the concrete is similar.

The coarse aggregate is a crushed limestone with lesser amounts of chert with a maximum size of 0.95 cm (3/8 inch) with typical finer particles ranging from 3.2 mm to 4.8 mm (1/8 to 3/16 inch). The particles are angular in shape with frequent elongated particles with preferred horizontal alignment (Figure 16). This feature suggests the concrete had a high workability at the time of placement. Aggregates are uniformly distributed and well graded. The fine aggregate consists of siliceous and calcareous sand that is judged to be more well graded than the fine aggregate used in the topping layer concrete but of similar composition (siliceous sand, limestone, chert, basalt rock fragments, and shells) and size (Figure 17). The paste-aggregate bond is firm.

The paste is mottled light to medium gray in color and hard. Residual portland cement was observed in thin section of primarily belite and interstitial aluminoferrite phase and of finer gradation than in the topping layer (Figure 18). The concrete is not air-entrained, but irregularly shaped bleed water voids were frequently observed (Figure 19). The paste along the bottom formed surface is fully carbonated to 6.4 mm (1/4 inch) and partially carbonated to a depth of 25.4 mm (1 inch).

Reinforcement was intersected by Core OAT-3 within the soffit slab. A 6.4 mm (1/4-inch) diameter reinforcing bar is located along the interface of the two mixes, with 38 mm (1-1/2 inches) clear cover from the bottom formed surface. Flash corrosion was observed on the bar which was intersected by a crack. Four, 4 mm (5/32-inch) diameter smooth wires are present mid-depth and near the bottom of the core clear cover that ranged from 0.8 mm to 19 mm (1/32 to 3/4 inch). Minor evidence of corrosion was observed around the perimeter of the wires with no appreciable section loss (Figure 20). The paste was incompletely consolidated around the wires (Figure 21).

The core contained a horizontal crack located 13 mm to 48 mm (1/2 to 1-7/8 inch) from the bottom of the core (Figure 11, Figure 22). The crack passed through coarse aggregate and is located adjacent the embedded reinforcement (Figure 22, Figure 23).

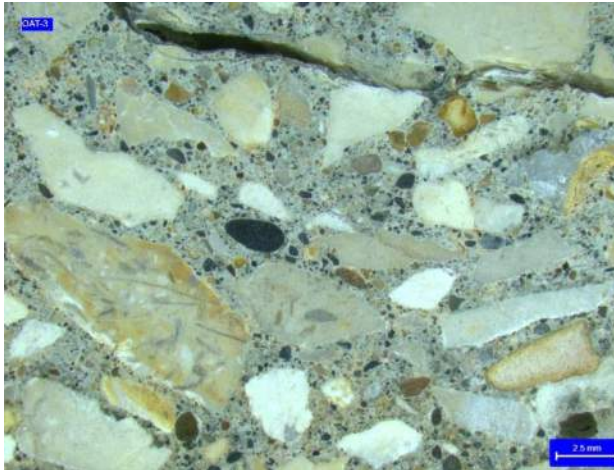


Figure 16. Core OAT-3 - Elongated coarse aggregates aligned horizontally in the soffit concrete.

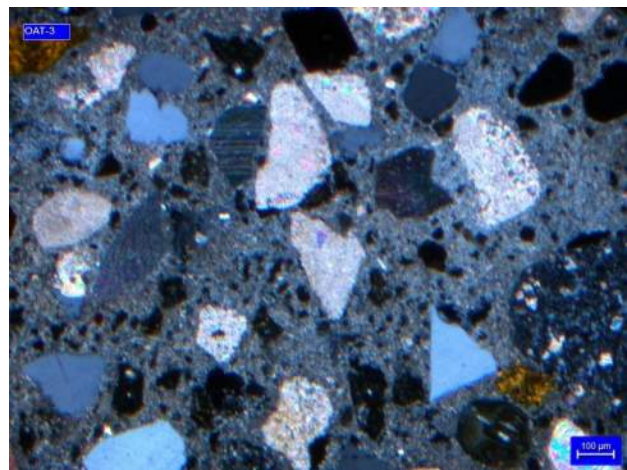


Figure 17. Core OAT-3 - Siliceous (black, gray, blueish particles) and calcareous (brightly colored particles) fine aggregates in the soffit concrete; pictured in thin section under cross-polarized light.

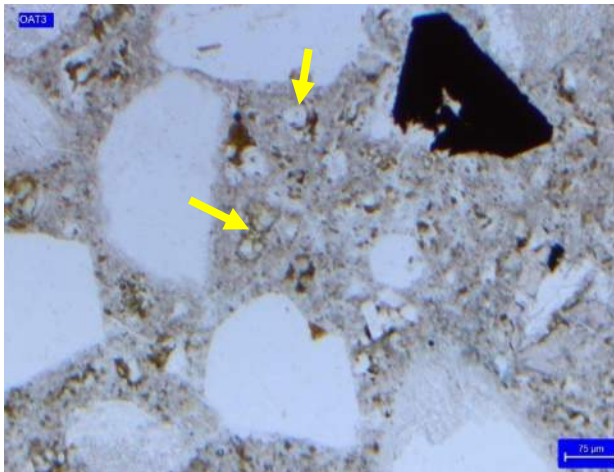


Figure 18. Core OAT-3 - Residual portland cement (arrows) in the soffit; pictured in thin section under plane-polarized light.

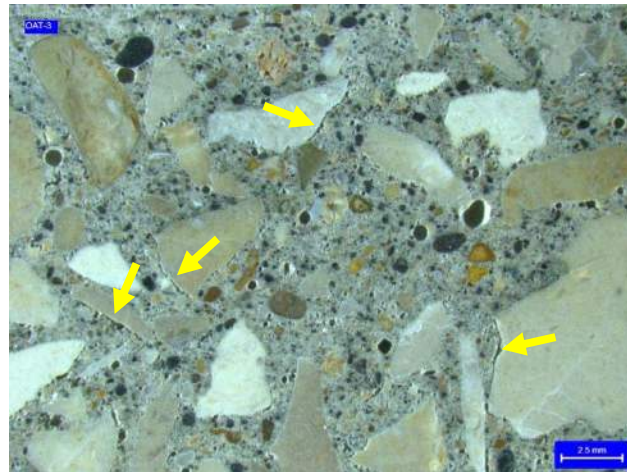


Figure 19. Core OAT-3 - Bleed water channels (arrows) adjacent coarse aggregates in the soffit.

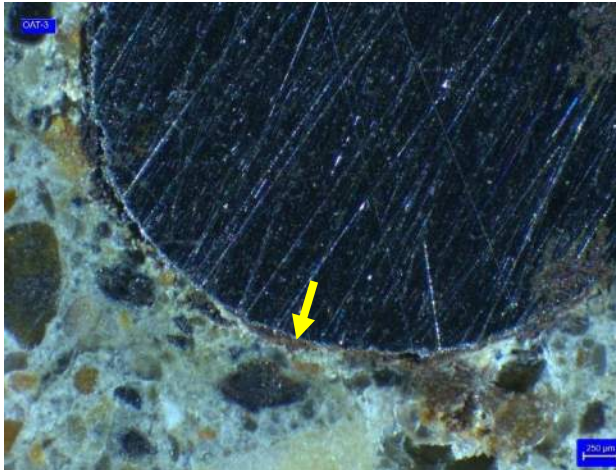


Figure 20. Core OAT-3 - Corrosion scale (arrow) along perimeter of reinforcement in soffit.



Figure 21. Core OAT-3 - Incomplete compaction of paste around reinforcement.



Figure 22. Core OAT-3 - Cracking (red arrows) adjacent reinforcement (yellow arrow) along interface of concretes.

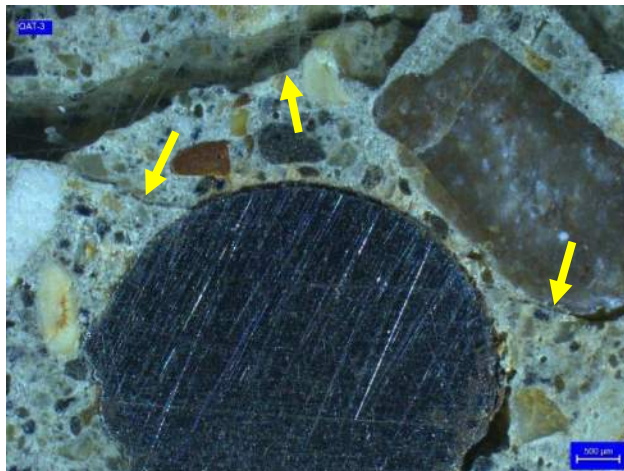


Figure 23. Core OAT-3 - Cracking (arrows) adjacent reinforcement near bottom of soffit.

DISCUSSION AND CONCLUSIONS

Arch Concrete

The concrete core extracted from the Arch represents one concrete mix that contains crushed limestone coarse aggregate and siliceous and calcareous fine aggregate in a portland cement paste. An interface marked by differences in paste color on both sides and by dark gray paste stringers is presumed to represent a construction joint over which the core was extracted. This variability of the hardened concrete in the core sample (primarily differences in the paste color and hardness and aggregate and void distribution) is related to incomplete initial mixing and likely differences in batching.

Despite these variations and the presence of the presumed construction joint, the core remains intact except for one crack that is oriented horizontally and that passes through aggregates, paste-rich regions,

and dark gray paste stringers along the interface/construction joint. This crack formed once the concrete had gained strength and sufficient paste-aggregate bond, but the exact mechanism of crack formation was not determined as part of these studies. The crack is not a result of an internal reaction of the concrete.

The paste was noted to be carbonated to a depth of 13 mm (1/2 inch). No reinforcement was intersected by the core to assess the potential for carbonation or chloride-induced corrosion and corrosion-related distress.

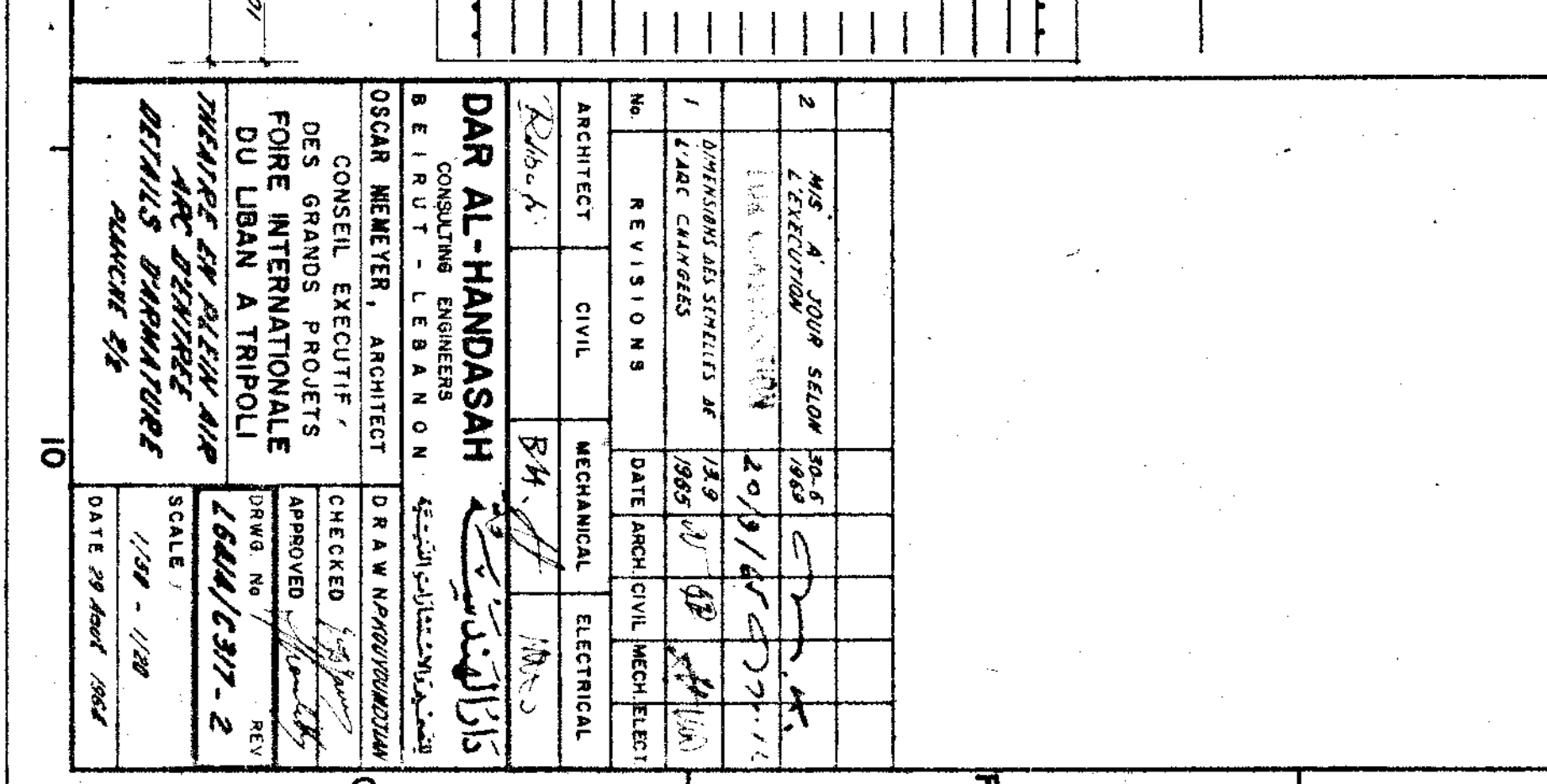
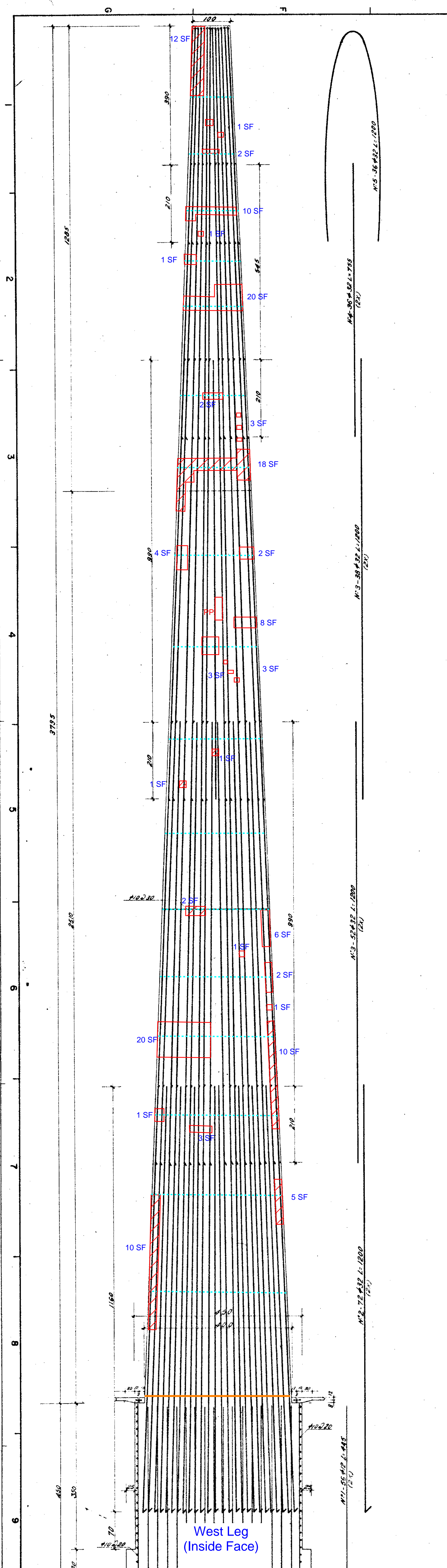
Soffit Slab Concrete

The slab extracted from the collapsed portion of the soffit of the OAT contains two concrete placements. The topping layer concrete is 67 mm (2-5/8-inches) thick and contains similar-sized aggregate and concrete constituents to the Arch concrete represented by Core AR-2. We suspect this topping layer concrete is overpour from the placement of the beam and slab above the soffit slab during original construction. The topping layer concrete consists of crushed limestone coarse aggregate and siliceous and calcareous fine aggregate in a portland cement paste. While some mottling of the paste was observed consistent with incomplete initial mixing, the overall paste color and the aggregate distribution is much more uniform in the topping layer compared to the compositionally similar concrete in Core AR-2.

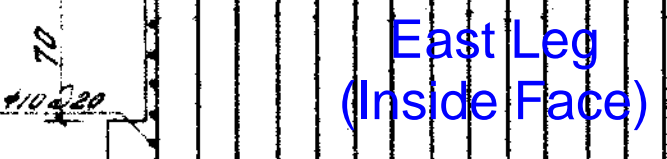
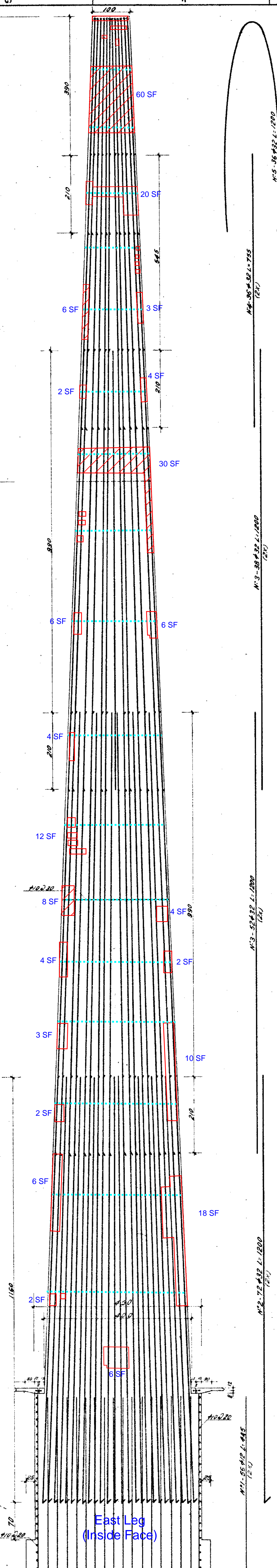
The topping layer concrete is bonded to a 50 mm (1-7/8-inch) thick placement comprising the soffit slab. Textural features along the interface suggest that the soffit concrete was placed prior to the topping concrete (and is consistent with the topping representing overpour material). The soffit concrete contains compositionally similar constituents to the topping and Core AR-2 concretes, although the aggregate size, aggregate gradation, and portland cement fineness varies.

The soffit is reinforced with 6.4 mm (1/4-inch) diameter reinforcement and smaller diameter smooth bars. The depth of paste carbonation from the bottom formed surface has reached the depth of two of the smaller diameter bars. Minor corrosion scale and incomplete paste encasement was observed for the reinforcement intersected by the core. One crack was intersected by Core OAT-3 that passes adjacent to the embedded reinforcement.

APPENDIX D. SURVEY SHEETS

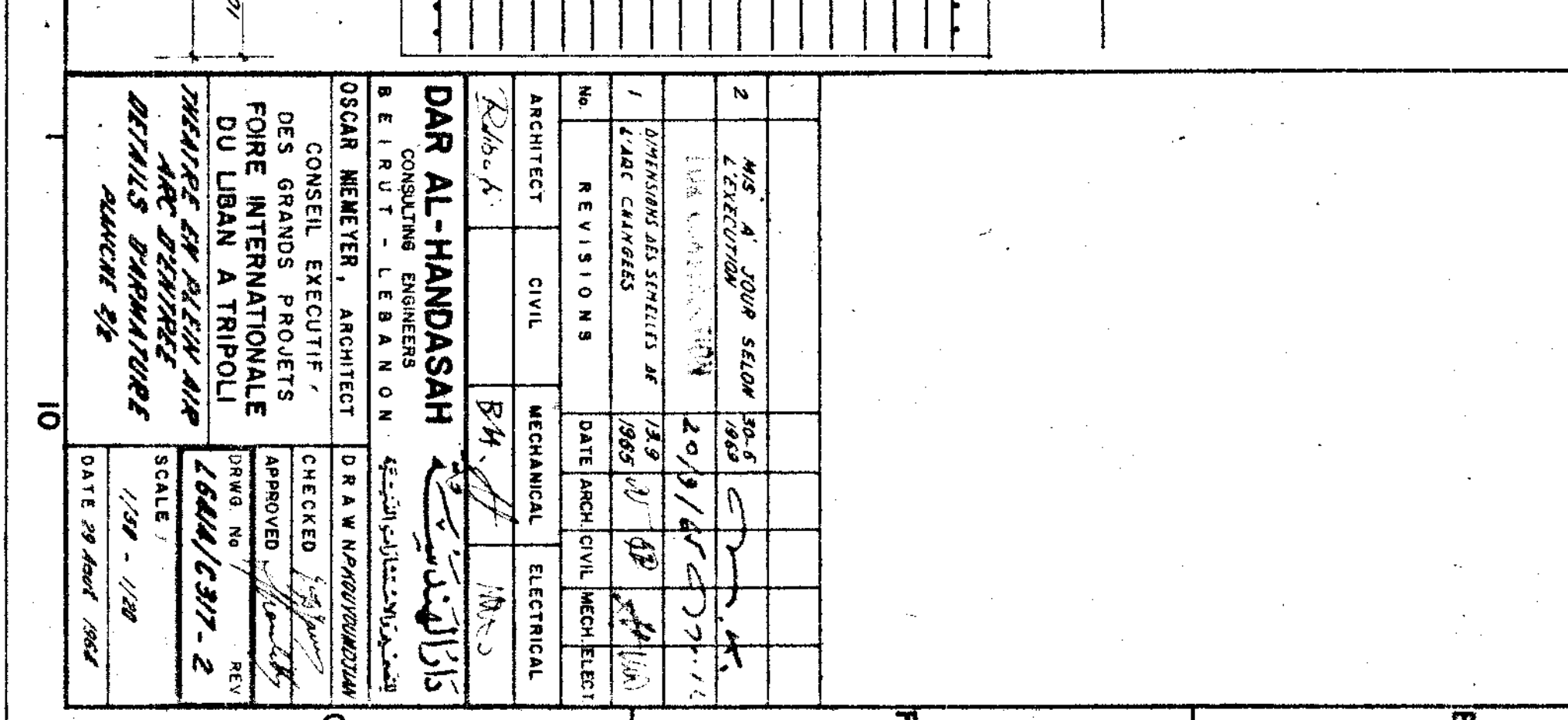
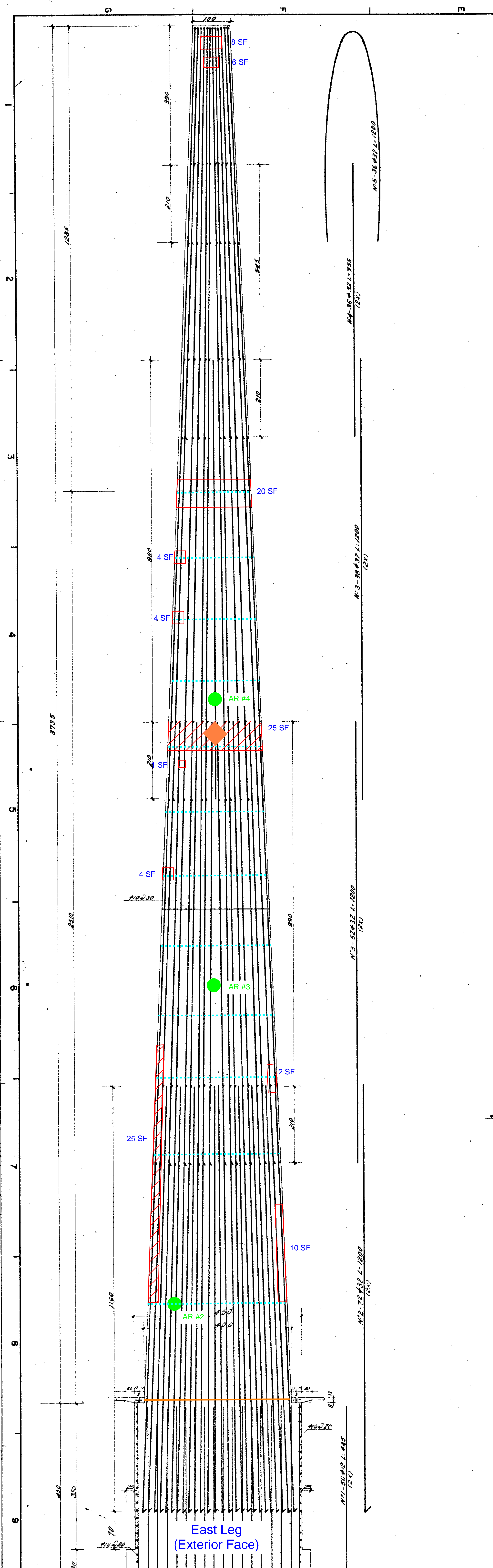


- 1) J'ai cette plante croissant dans la plaine N° 6644/316.
- 2) Parmi les siliques de la résistance de Bito, à la hauteur des cônes de l'altitude 2800 m.
- 3) Toutes les analyses en Acer Doucté.
- 4) On dans le canal des canaux d'irrigation dans les zones situées dans cette plaine sont analysés de la plaine N° 6644/316.
- 5) Pour l'air, on a la résistance de Bito, à la hauteur des cônes de l'altitude 2800 m.
- 6) Pour l'air, on a la résistance de Bito, à la hauteur des cônes de l'altitude 2800 m.

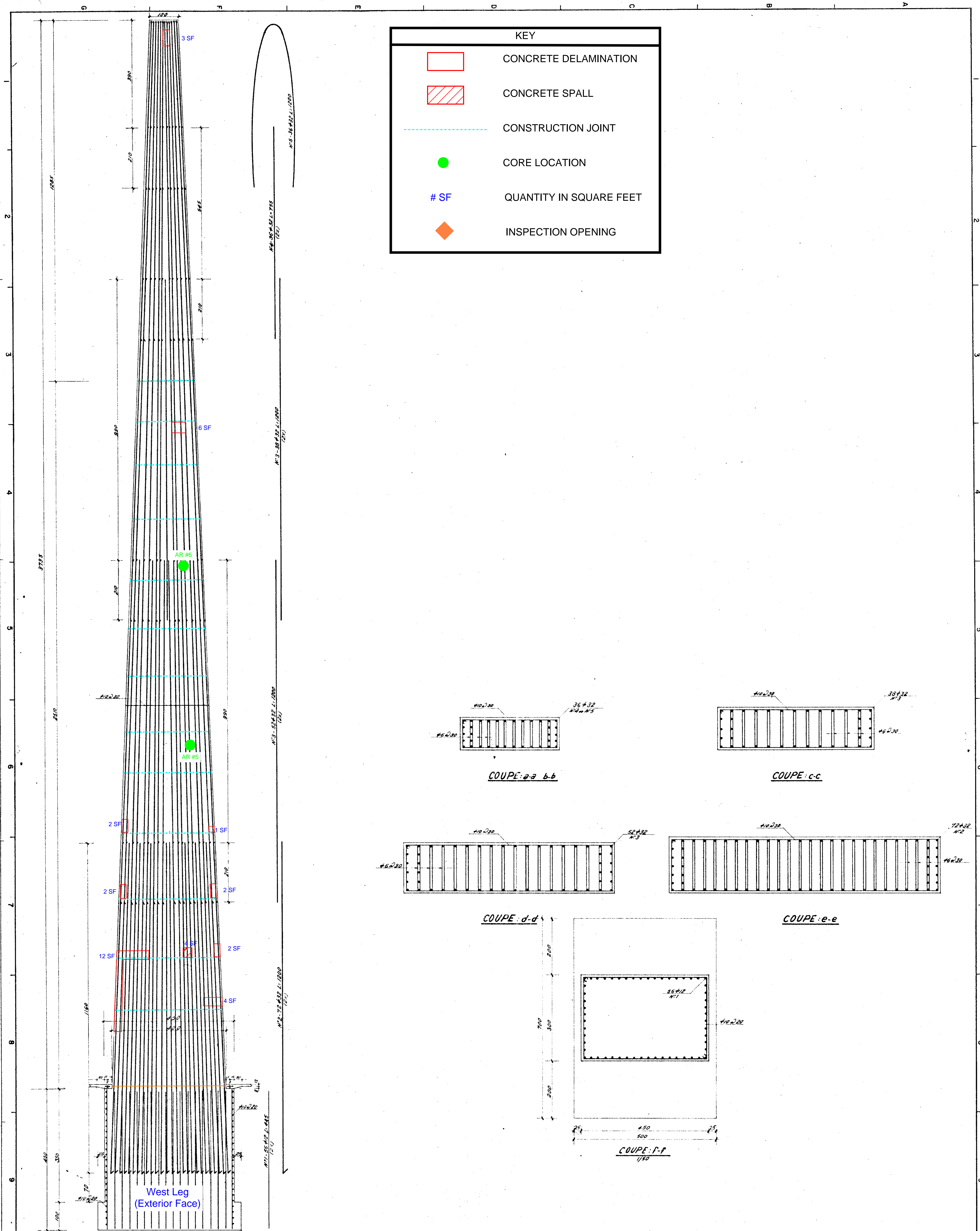


- 1) LAI: CETTE PLANCHE CORRESPONDANT AVEC LA PLANCHE N° 6444/12/16.
- 2) POUR LES SÉRIES DE LAI: LA MOYENNE GÉNÉRALE A LA RADIATION SUR CINQUANTE JOURS EST: 200 μcm^2
- 3) POUR LES ANOMALIES ON AVEC DONT 12/16.
- 4) POUR DANS LE CASUS DES CARACTÈRES CORRESPONDANT AVEC LA PLANCHE N° 6444/12/16.
- 5) LES CARACTÈRES DÉTAILLÉS DANS CETTE PLANCHE SONT DONNÉS DE LA PLANCHE N° 6444/12/16.
- 6) POUR LAI: LA MOYENNE DE LA RÉSISTANCE DE NOTRE A LA MOYENNE SUR CINQUANTE JOURS EST: 200 μcm^2

10
NOTES



- 1) LIRE CETTE PLANCHE CONVOYANTMENT AVEC LA PLANCHE N° 6444/2/16.
- 2) POURSUIVRE LES SÉRIES DE LA RÉSISTANCE DE BILLOU A LA RIVIERE SUR COTÉMENT 280/200/200 CM.
- 3) TROUVER LES ANALOGUES EN ACIER DOUT ET/OU SE.
- 4) ENVOYER DANS LE CANTON DES COMBES CONVOYANTMENT AVEC LA PLANCHE N° 6444/2/16.
- 5) LES COMBES DÉPILÉES DANS CETTE PLANCHE SONT ANALOGES DE LA PLANCHE N° 6444/2/16.
- 6) POURSUIVRE LA RÉSISTANCE DE BILLOU A LA RIVIERE SUR COTÉMENT 280/200/200 CM.



- 1) JOUT CILINDRE PLANANT CONCOMITANT AVEC LA PLANCHE
M. 6644/1516.
- 2) POUX LES SCALAIRES DE L'ARC LA RESISTANCE DOIT ETRE A LA
HAUTEUR SUR CILINDRE 4382005 - 280 V. cm^2
- 3) TOUJOURS LES MONTAGES EN ARC DOIVENT ETRE LIÉS.
- 4) POUR DANS LE CHAÎNE DES CHAÎNES CONCOMITANTES DES ARCS
DE LA PLANCHE 4382005 - 280 V. cm^2
- 5) LES SCALAIRES DÉTACHÉS DONT CILINDRE PLANANT SONT PERDUS
DE LA PLANCHE M. 6644/1516
- 6) POUR L'ARC CILINDRE LA RESISTANCE DU BREVET 414
HAUTEUR SUR CILINDRE 4382005 - 280 V. cm^2

10

NOTES

Glossary

Adaptation

Adaptation is the process of modifying existing buildings or structures to better suit changed or changing conditions, needs, or requirements and proposed compatible uses. This can involve making alterations to the design, layout, systems, or functions of a building to improve its performance, functionality, sustainability, or aesthetics. In this CMP, *adaptation* is defined per the *US Secretary of the Interior's Standards for the Treatment of Historic Properties*, and it means modifying a place to suit proposed compatible uses (see also compatible).

Alteration

Alteration refers to the act or process of making changes or modifications to buildings, structures, and landscapes. It involves altering or modifying the characteristics, form, structure, or appearance of an object or system. In this CMP, *alterations* can occur while modifying a building's or a landscape's layout or features. The purpose of alterations can vary, ranging from improving functionality or aesthetics to adapting the building, structure, or landscape for a specific purpose or requirement.

Attributes

Attributes, also known as character-defining features, are aspects of the place that individually or in combination contribute to heritage significance. As per the *Madrid-New Delhi Document 2017*, *attributes* "include its physical location, form, fabric, and use, its planning methods, design (including color schemes), construction systems and technical equipment, as well as its aesthetic qualities." They may include views and relationships between elements as well as traditions, associations, and the experience, spirit, and feeling of the place.

Authenticity

Authenticity refers to the level to which a building, structure, or landscape accurately represents its original design, construction, historical significance, and cultural context. For example, an authentic building is one that has retained its original architectural features, materials, craftsmanship, and overall character without significant alterations, additions, or modifications that compromise its integrity or historical character. According to the *Operational Guidelines of the World Heritage Convention*, *authenticity* is a measure of the honesty of a place as an authentic product of its history and of historical processes and it is expressed in the site's attributes (see attributes).

Burra Charter

The *Burra Charter* is a set of guidelines and principles for the conservation and management of cultural heritage places in Australia. It was first adopted in 1979 by Australia ICOMOS (International Council on Monuments and Sites) and has since been revised and updated to reflect best practices in heritage conservation. The charter provides an international framework for the conservation of heritage places, emphasizing the importance of understanding, respecting, and preserving the significance of cultural heritage sites. It outlines key principles and processes for the identification, assessment, documentation, conservation, and adaptive reuse of heritage places to ensure their long-term sustainability and value.

Compatible Material

Compatible is an important term in architectural conservation and historic preservation where promotion of a cohesive and visually pleasing built environment can enhance the quality of life for users and visitors. By prioritizing building fabric compatibility that respects the culturally significant fabric of a place, heritage professionals can align and balance the overall character, identity, and sense of place in a community.

Compatible Use

Compatible use is a use that involves no change to the culturally significant fabric, changes that are mainly reversible, or changes with minimal impact.

Component

A *component* is a constituent part of a main element. As a campus, RKIF consists of three main elements. Each of these elements includes several components. For example, the “buildings” element is composed of the Administration Building, the Guest House, the Space Museum, etc., and each component (building) consists of contributory features (sub-components), i.e. the Entrance Portico’s features include the entry ramp, the canopy (roof), etc. Elements, components, and features contribute to RKIF’s functionality, aesthetics, overall character, and significance (see element).

Conservation

Conservation is also known as heritage conservation (or historic preservation in the USA), and refers to the practice of preserving, protecting, and managing buildings, structures, sites, and areas of historical, cultural, or architectural significance. In this CMP, *conservation* involves “all the processes of looking after a place so as to retain its cultural significance” (Burra Charter article 1.4), and it may include preservation, restoration, reconstruction, or adaptation. The overarching goal of conservation is to safeguard and maintain the integrity, authenticity, and values of heritage resources for present and future generations.

Conservation Management Plan

A *conservation management plan* (CMP) is a document that outlines a comprehensive strategy for the long-term preservation, protection, and management of a heritage site, building, landscape, or cultural asset. A conservation management plan guides the sustainable conservation and use of the heritage asset while maintaining its cultural significance, historical value, and integrity. A CMP is a tool used by heritage conservation professionals, site managers, government agencies, and community groups involved in the preservation of cultural heritage assets. The guidance outlined in a conservation management plan supports the responsible stewardship and sustainable use of heritage sites for future generations.

Cultural Significance

The term *cultural significance* refers to the importance, value, meaning, and relevance of a place, object, tradition, practice, or expression within a particular cultural context. Cultural significance is often derived from the role that a particular element plays in shaping identity, memory, beliefs, values, and traditions. The term can encompass a broad range of historical, scientific, social, spiritual, symbolic, and aesthetic meanings associated with the cultural heritage of a community, group, or society, therefore, it may change over time.

Cyclical Maintenance

Cyclical or periodic maintenance refers to the continuous protective care of a place and its setting; it is a planned and recurring schedule of maintenance activities carried out on a regular basis - or repeated intervals - to prevent deterioration, to ensure the efficient functioning of assets, and to extend their lifespan. Maintenance is distinguished from repair, which may involve restoration or reconstruction (see maintenance).

Deterioration

The term *deterioration* refers to the gradual decline in the condition, quality, or functionality of a building, structure, or material over time due to various factors such as age, weathering, wear and tear, lack of maintenance, or structural defects.

Note: Regular maintenance, timely repairs, and proactive measures can help prevent or mitigate building deterioration and prolong the lifespan of a structure.

Element

In architecture, an *element* refers to a fundamental or essential part of a building, a complex, or an architectural composition. For examples, as a campus, RKIF is divided into three main elements: the Fairground buildings, the built landscape, and the vegetated spaces. Each element consists of several components, *i.e.* the “buildings” element includes several components such as the Administration, the Guest House, the Grand Cover, *etc.* (See component).

Fabric

Building *fabric* is the physical elements and materials that make up the structure, exterior, and interior of a building, including walls, floors, roofs, ceilings, windows, doors, and other components. It encompasses the entirety of the building’s construction, both the visible and hidden structural elements. Regular maintenance, repair, and restoration of historic building fabric help ensure the safety and functionality of the building while preserving its architectural character and historical value.

Heritage Impact Assessments

Heritage Impact Assessments (HIA) are systematic evaluations conducted to understand and measure the potential effects, both positive and negative, of a particular project, action, or policy on various aspects of the environment and protected heritage to inform decision-making before implementation. *Heritage Impact Assessments* typically involve gathering data, analyzing potential impacts, and considering alternative options to minimize and mitigate negative effects and maximize positive outcomes

so as not to have negative consequences for protected heritage. HIA’s are required to analyze possible effects and consequences of development on the Outstanding Universal Value (OUV) of World Heritage properties. For further information: <https://whc.unesco.org/en/guidance-toolkit-impact-assessments/>.

Intactness

Intactness refers to the degree to which the original fabric and form of a place survive. It describes an object, entity, components, system, or landscape that has not been altered, impaired, or affected in a significant or essential way.

Integrity

Integrity is a measure of the wholeness and intactness of the place and its attributes. Examining the conditions of integrity, therefore, requires assessing the extent to which the property: (a) includes all elements necessary to express its Outstanding Universal Value; (b) is of adequate size to ensure the complete representation of the features and processes which convey the property’s significance; (c) suffers from adverse effects of development and/or neglect.

Interpretation

Interpretation refers to all the ways of presenting the cultural significance of a place to enhance appreciation. Furthermore, *interpretation* can involve a combination of actions related to the treatment of fabric or the use of a heritage resource. Interpretation is a process that involves analyzing, understanding, and explaining the meaning of a resource based on available information that can be personal or shared knowledge.

Intervention

Intervention can apply to any action, modification, or change made to an existing building or structure with the purpose of conserving, repairing, altering, or adapting the building’s form, function, performance, or appearance. Building interventions range from minor repairs and maintenance work to major conservation or adaptive reuse programs.

Landscape

In the context of architecture, urban planning, and environmental design, a landscape refers to an area of land that includes natural or built elements, such as vegetation, terrain, water bodies, structures, and open spaces, which collectively form a distinct and visually coherent setting. Landscapes can vary in scale, from small gardens and parks to vast natural reserves and urban areas. In this CMP, *landscape* refers to the surroundings of the Fairground's buildings as well as the built and vegetated open spaces and car parks that form the ellipse form of the property.

Maintenance

The term *maintenance* refers to the ongoing process of preserving, and caring for heritage buildings, structures, and landscapes that are considered to have architectural, cultural, or social significance. In this CMP, maintenance is the act of keeping the property continuously in good condition – it is distinguished from making repairs, and/or correcting problems.

Management Plan

In the context of a World Heritage site, such as RKIF, a *management plan* refers to a comprehensive document that outlines strategies and actions for the preservation, conservation, and sustainable management of the place along with work plans for their implementations. The *management plan* may also include programmatic use based on adaptive reuse that are in keeping with actions taken to preserve and protect the resource. The plan can include suggested types of programmatic use that balance with conservation measures, and maintenance plans that are essential tools for ensuring that the Outstanding Universal Value (OUV) of the site is safeguarded for present and future generations.

A *management plan* typically includes information on the desired outcomes (conservation strategies and actions, visitor management, risk preparedness), the measures required to achieve them, resource allocation, timelines, and performance indicators to track progress.

Outstanding Universal Value (OUV)

Outstanding Universal Value (OUV) of cultural and/or natural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity. As such, the permanent protection of this heritage is of the highest importance to the international community as a whole. The World Heritage Committee defines the OUV criteria for the inscription of properties on the World Heritage List.

Place

A *place* is a location, landscape, site, building, structure, or area that holds cultural, historical, architectural, or natural significance and is considered important for preserving and protecting for future generations. *Places* have unique characteristics that reflect the identity, history, and values of a particular community, society, or civilization. *Places* can include ancient ruins, historic buildings, monuments, landscapes, traditional villages, urban areas, industrial sites, archaeological sites, and natural reserves that are deemed to have value for their cultural, historical, or environmental importance. In the case of RKIF, *place* refers to the whole of the site area including its structures and landscape.

Policies

Policies are formalized guidelines, rules, principles, or protocols established by organizations, governments, or other entities to guide decision-making, actions, and behaviors in specific areas. In the case of RKIF-CMP, *policies* provide a framework for consistent and effective conservation and management of RKIF as a World Heritage site.

Preservation

The term *preservation* often refers to the safeguarding of cultural heritage, historical landmarks, artifacts, natural resources, documents, and any other valuable resource that holds significance. In this CMP, preservation is used in accordance with the *US Secretary of Interior's Standards*, which define *preservation* as 'the act or process of applying measures necessary to sustain the existing form, integrity, and materials of a historic property.' The *Standards for Preservation* require retention of the greatest amount of historic fabric along with the building's historic form.

Principles

Heritage *principles* refer to the fundamental guidelines, values, and standards that guide the preservation, conservation, interpretation, and management of heritage places and cultural resources. These *principles* (e.g. which align with the *Burra Charter* and the *Venice Charter*) are designed to ensure the protection and sustainability of significant cultural and historical assets for present and future generations.

Preservation Master Plan

A *preservation master plan* is a comprehensive document that outlines strategies and guidelines for the preservation, conservation, and management of a heritage site or place, including its landscape, buildings and structures, and other features. It serves as a long-term roadmap for safeguarding and maintaining the integrity, authenticity, and value of the resource.

A *preservation master plan* may also include an assessment of the site's historical, architectural, and cultural significance, as well as its existing condition and potential threats. The plan also articulates the vision for the site, interventions permitted, concepts for usage and reuse, and potentially, design guidelines.

Preventive Maintenance

Preventive maintenance, also known as proactive maintenance, is a program of ongoing measures that aim to prevent buildings, materials and landscapes from deterioration. The program of *preventive maintenance* aims to extend the operational lifespan of these assets. It should outline and involve routine inspections, monitoring, adjustments, cleaning, and servicing to identify and address potential issues before they become major problems.

Reconstruction

This term relates to a process of rebuilding, restoring, or reproducing a structure, building, or site that has been damaged, destroyed, or lost over time. *Reconstruction* can be undertaken to recreate the original appearance, form, and function of a historical or cultural artifact based on available evidence, documentation, and historical records. This process often involves using traditional construction techniques, materials, and craftsmanship to replicate the original design and characteristics of the original resource. Careful consideration of ethical, cultural, and historical factors is essential when deciding to undertake a reconstruction project to ensure that the integrity and value of the heritage site are respected and preserved.

Rehabilitation

Rehabilitation is defined as the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values. The *Rehabilitation Standards* acknowledge the need to alter or add to a historic building to meet continuing or new uses while retaining the building's historic character.

Restoration

Restoration is the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time, by means of the removal of features from other periods in its history and the reconstruction of missing features from the restoration period. The limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a restoration project. The *Restoration Standards* allow for the depiction of a building at a particular time in its history by preserving materials, features, finishes, and spaces from its period of significance and removing those from other periods.

Repair

Repair refers to the act of fixing, restoring, or renewing a structure or object that is damaged or distressed. In most cases, repair work is carried out to address broken issues, improve functionality, and extend the useful lifespan of a structure, system, object, or material.

Reversible

The term *reversible* refers to any interventions made during the restoration process that can be removed, and the affected elements or features returned to the condition prior to the interventions, without causing harm to the original material fabric of the heritage site. In addition, it can also refer to re-treatability.

Setting

Setting refers to the surroundings, environment, context, or landscape in which a heritage site, building, monument, or object is situated. Protection of the setting of a heritage resource is essential for maintaining the site's authenticity, integrity, and significance (see *Landscape*).

Site

The term *site* is used to designate a specific geographical location with distinct characteristics, features, or functions. *Sites* vary in scale, scope, and importance; they play a significant role in shaping the cultural, historical, and landscape of a region. Proper interpretation, management, and conservation of sites are essential for safeguarding their significance and ensuring their long-term sustainability and value. In this CMP, site is used interchangeably with place to refer to the whole of the physical RKIF area, including its buildings and landscape located within the ellipse boundary.

Stewardship

Stewardship refers to the responsible management and protection of a place of value, which may be related to a landscape, building resources, assets, or other property. It involves taking care of and making decisions in the best interest of what has been entrusted to one's care. *Stewardship* often implies a sense of duty and accountability towards the well-being and sustainability of the entrusted building, structure, or landscape.

Treatments

Conservation *treatments* refer to the various repair and restoration methods used to preserve and maintain historic landscapes, buildings, structures, monuments, artifacts, documents, and other cultural heritage resources. These *treatments* are applied with the aim of safeguarding the historical, architectural, and cultural significance of the object or site while ensuring its longevity for future generations.

Urban Master Plan

A comprehensive, long-term planning document that guides the development and design of a city or town, encompassing land use, infrastructure, zoning codes, and the built environment.

Values

Values are the tangible and intangible qualities or characteristics ascribed to a place. As defined in article 1.2 of the *Burra Charter*, cultural significance is defined by aesthetic, historic, scientific, social, or spiritual values for past, present, or future generations. In the *Practice Note of the Burra Charter* (version 1, 2013) on understanding and assessing cultural significance, these terms are referred to as follows:

Aesthetic value is a key component of cultural significance, defined as the aesthetic worth or beauty of a place and it refers to the sensory and perceptual experience of a place. Criteria may include consideration of the form, scale, color, texture, and material of the fabric. It may also consider the smells and sounds associated with the place and its use.

Historic value encompasses the history of aesthetics, science, and society. A place may have historic value because it has influenced, or has been influenced by, an historic figure, event, phase, or activity. It may also have *historic value* as the site of an important event.

Scientific or research value of a place depends upon the importance of the data involved, on its rarity, quality, or representativeness, and on the degree to which the place may contribute further substantial information about an aspect of the past through further examination or investigation.

Social value refers to the associations that a place has for a particular community or cultural group and the social or cultural meanings that it holds for them.

Spiritual value refers to the intangible values and meanings embodied in or evoked by a place, which give it importance in the spiritual identity, or the traditional knowledge, art and practices of a cultural group. *Spiritual value* may also be reflected in the intensity of aesthetic and emotional responses or community associations, and be expressed through cultural practices and related places.

Vulnerabilities

The term *vulnerabilities* is used to refer to various risks and threats associated with historic buildings and sites due to their age or other factors that may compromise their historical significance, and unique architectural features. Preserving these cultural heritage assets requires careful consideration of all types of *vulnerabilities* encountered (e.g., structural degradation, water damage, fire risk, natural disasters, urban development pressures, environmental and sometimes, neglect, and lack of maintenance).

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