TECHNICIAN TRAINING FOR THE CONSERVATION OF MOSAICS

PART 3
THE CONSERVATION OF ARCHITECTURAL REMAINS AND THEIR DECORATIVE SURFACES

Structures and decorative surfaces: conditions and their documentation

Livia Alberti, Ermanno Carbonara, Thomas Roby
The deterioration of materials exposed on an archaeological site is generally due to two main categories of factors:

**Environment**

and

**Human activities**

The **properties of the materials** exposed on an archaeological site will also influence their conservation.
<table>
<thead>
<tr>
<th>Factors</th>
<th>Causes &amp; Examples</th>
<th>Examples of Mechanisms</th>
</tr>
</thead>
</table>
| **Environment**                 | Atmospheric precipitation: rain, snow  
Water condensation / capillary rise  
Temperature and humidity variations  
Temperature below 0°C  
Marine salt / wind  
Water pooling / soil accumulation | Salt crystallization due to wet-dry cycles |
| Bio-deterioration agents        | Micro-organisms (algae, lichens, moss, etc.)                                    | Chemical transformation of materials        |
|                                 | Vegetation (grass, plants, bushes, trees, etc.)                                 | Mechanical pressure caused by root growth   |
|                                 | Animals (insects, rats, moles, sheep, cows, etc.)                               | Loss of material due to the digging of      |
|                                 |                                                                                 | tunnels & building of nests                 |
| Natural disasters               | Earthquakes  
Flooding / Fire  
Landslides                                                                         | Movement of mosaic material                 |
| Pollution (chemical substances  | Agricultural fertilizers  
Car exhaust emissions  
Industrial discharges into water and air  
Acid rain                                                                         | Chemical transformation of mosaic materials |
| present in air, water and soil  |                                                                                 |                                             |
| **Human activities**            | Water pooling / soil accumulation  
Uncontrolled tourist access  
Growth of plants and micro-organisms                                               | Salt crystallization                        |
| Inappropriate conservation      | Poorly executed work  
Use of inappropriate materials  
Untrained staff                                                                   | Mechanical pressure caused by walking       |
| interventions                    |                                                                                 | on the walls and by root growth             |
| Gratuitous, deliberate or       | Vandalism, wars, etc. Theft of materials  
Illegal excavations                                                                 |                                          |
| accidental destruction          |                                                                                 |                                             |
| Poor land use planning          | New constructions (buildings, roads, etc.) without proper excavation            | Loss of materials                           |
The main **deterioration phenomena** of structures and decorative surfaces
The main deterioration phenomena of structures and decorative surfaces

Efflorescences
The main deterioration phenomena of structures and decorative surfaces

Incrustations
The main deterioration phenomena of structures and decorative surfaces

Stains
Cracks

The main deterioration phenomena of structures and decorative surfaces
Instability and change of the form of the construction

The main deterioration phenomena of structures and decorative surfaces
The main deterioration phenomena of structures and decorative surfaces

Deteriorated elements of the construction (stones and bricks)
Deteriorated mortar of the construction and decorative surface
The main deterioration phenomena of structures and decorative surfaces

Detachment of elements of the construction
The main deterioration phenomena of structures and decorative surfaces

Detachment of the decorative surface
Documentation of Condition Assessment
**Data Form** – CONSERVATION OF STRUCTURES AND DECORATIVE SURFACES

**DATA FORM** for the documentation of Condition Assessment

### PART OF THE STRUCTURE
- Wall
- Vault
- Steps
- Cistern/Basin
- Pavement

### CONSTRUCTION MATERIALS
- Dry Stone
- Stone and lime mortar
- Stone and earthen mortar
- Brick
- Earth
- Other:

### TYPE OF SURFACE DECORATION
- Wall Plaster
- Painted Wall Plaster
- Crushed Ceramic Mor.
- Marble Plaque
- Stone Slabs
- Tile/Zellij
- Stucco/gyps. plaster
- Other:

### PREVIOUS INTERVENTIONS
- Repairs of the structure
- Repairs of the surface decoration of wall or pavement

### CONDITION ASSESSMENT
- Loss of stones or mortar of the structure
- Cracks
- Detached stones of the structure
- Deformations (bulge or depression)
- Vegetation
- Loss of surface decoration of wall or pavement
- Micro-organisms
- Detachment of surface decoration of wall or pavement
- Incrustations
- Deteriorated surface decoration
- Efflorescences
- Deteriorated previous interventions

### CURRENT INTERVENTIONS
- Vegetation removal
- Cleaning
- Removal of modern repair mortars

**Mortar compositions:**

- Repair of the surface decoration with mortar (in-filling/edging repair)
- Grouting voids below the surface decoration
- Removal and resetting in place of parts of the surface decoration
- Reintegration of area of loss with:
- Other treatment of the surface decoration:

**PREPARED BY**

**DATE**
**CONDITION ASSESSMENT**

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**Graphic documentation map attached**

Loss of stones of the construction

Loss of mortar of the construction
CONDITION ASSESSMENT

- Loss of stones or mortar of the structure
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Graphic documentation map attached
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*Graphic documentation map attached*
This form should be accompanied by an overall photograph of the structure or surface by a plan of the building, indicating the location of the room. Mark also the location of the wall elevation if the object is

**Condition Assessment**

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Other interventions on the structure

- Vegetation removal
- Removal of modern repair mortars
- Incrustations
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Documentation of Condition Assessment
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*Note: The table includes various conditions that may affect the condition of a structure or pavement, such as loss of stones or mortar, detachment, vegetation, micro-organisms, incrustations, and efflorescences.*

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*Image of a wall showing signs of weathering and deterioration.*
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1. Mark also the location of the wall elevation if the object is by a plan of the building, indicating the location of the room.
2. This form should be accompanied by an overall photograph of the structure or surface.
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- Loss of stones or mortar of the structure
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- Efflorescences

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[Image 1: Stone wall with cracks and vegetation]

[Image 2: Stone wall with vegetation and landscape background]
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![Graphic documentation map attached](image-url)
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CONDITION ASSESSMENT

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- **Graphic documentation map attached**

![Wall with signs of wear and tear](image1.png)

![Close-up of wall with vegetation](image2.png)
**Legend for the graphic documentation of Condition Assessment**

### Previous Interventions Map

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<td><img src="image" alt="Repairs/reintegrations of surface decoration" /></td>
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<td><img src="image" alt="Edge of each repair mortar" /></td>
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<tr>
<td><img src="image" alt="Overlapping between mortars (new → old)" /></td>
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<td><img src="image" alt="Resetting in place of detached stones" /></td>
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<td><img src="image" alt="Grouting voids under the surface decoration or within the structure" /></td>
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<td><img src="image" alt="Removal and resetting in place of parts of the surface decoration with facing" /></td>
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<td><img src="image" alt="Reintegration of areas of loss with" /></td>
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**Condition Assessment Map**

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### Previous Interventions Map
- Not original parts of the structure
- Edge of each repair mortar
- Repairs/reintegrations of surface decoration
- Overlapping between mortars (new versus old)

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### Current Interventions Map
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- Mortar composition:
- Resetting in place of detached stones
- Mortar composition:
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**Title:** Condition Assessment Map

**Date:** 08/04/2018

**Prepared by:** Mohamed Zaki
MOSAIKON is a partnership of four institutions: the Getty Conservation Institute, the Getty Foundation, ICCROM, and ICCM. The aims of the project are to strengthen the network of professionals concerned with the conservation, restoration, maintenance, and management of mosaic heritage in the southern and eastern Mediterranean region; provide training to a variety of individuals involved in mosaics conservation and, more generally, with the management of archaeological sites and museums with mosaics; work with national and international bodies to provide a more favorable legislative, regulatory, and economic environment for the conservation of mosaics in the Mediterranean; and promote the dissemination and exchange of information.