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## CONSERVATION SCHOOL: GROUNDWATER AND SALT DAMAGE TO HISTORIC SITES IN URBAN CONTEXTS

November 13 – December 22, 2016

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**Organized by the Athar Lina Initiative – Megawra Built Environment. Funded by the American Research Center in Egypt, with additional funding from the American Embassy under the supervision of the Ministry of Antiquities.**

**In partnership with the Universities of Oregon and Cornell and in collaboration with Cairo Governorate, TU Delft and Takween for Integrated Community Development.**

**Within the framework of Athar Lina Groundwater Research Project: Integrated solutions for ground water problems in historic contexts**

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### 1. About Athar Lina Groundwater Research Project Integrated solutions for ground water problems in historic contexts

A multi-disciplinary research and training program with the participation of an international team of architects, conservation experts, planners and experts in urbanism, environment, infrastructure and water resources. The program is organized by Megawra Built Environment and the universities of Oregon and Cornell, with funding from the American Research Center in Egypt and the American Embassy in Cairo and in partnership with the Ministry of Antiquities and Cairo Governorate to:

1. Study the phenomenon of ground and subsurface water rise in historic areas and its effect on historic buildings. (Research phases: Aug-Oct 2016 and Jan-Mar 2017)
2. Train professionals and scholars in the field of heritage conservation on state of the art techniques of treatment of historic buildings suffering from salt and water damage. (Conservation School: Nov-Dec 2016)
3. Organise an international school to develop integrated methodologies for the treatment of water extracted during dewatering processes to be used as an alternative for supply water for cleaning, industrial, irrigation or irrigation purposes. (International School: April 2017)

#### 4. Pilot one or more proposed methodologies in al-Khalifa. (Piloting and Intervention phase: May-Jul 2017)

The program will follow a sustainable methodology through technologies that can be implemented and that are suitable for the social particularity and economic conditions of the area with the aim of transforming ground water from a source of harm to a social resource. It builds on Athar Lina Initiative's mandate to preserve the historic city and make sure it is used efficiently as a social resource and driver for development. Athar Lina initiative has been implementing an integrated participatory program of conservation, rehabilitation, heritage education, tourist development, capacity building and urban development in the neighbourhood of al-Khalifa since 2012 based on this mandate.

## 2. About the Conservation School

### Groundwater and salt damage to historic sites in urban contexts

A six week conservation school aimed primarily at Ministry of Antiquities employees. It engages 20 MoA professionals in addition to around 7 employees of Cairo Government, the Ministries of Housing and Environment, in addition to the Water and Sewage Companies and the National Institute for Water Studies. Students and young professionals are also given a chance to audit sections of the course. Teaching is Sunday through Thursday from 9 to am to 1 pm through lectures, fieldtrips, practical exercises, discussions and peer exchange with a side program of public events. All the course activities take place in Khalifa generally with focus on the domes of Al-Ashraf Khalil and Fatima Khatun as a case study.

This school is divided into seven modules as follows:

#### **Module 1. Introduction and basics (13-16 November):**

Conservation theory for historic buildings – introduction to principles of building and material conservation – introduction to structural systems of historic buildings.

#### **Module 2. Project 1: Site investigation and condition survey (17-23 November):**

Preliminary site investigation, background research and rapid assessment of the domes of al-Ashraf Khalil and Fatima Khatun

#### **Module 3. Material Conservation (24 -29 November):**

Principles of treating water and salt damage with a focus on inorganic material (stone, masonry, mortar and renders).

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**Module 4. Architectural Conservation (30 November -5 December):**

Architectural solutions for water and salt damage (Desalting, grouting, insulation, ventilation, structural support).

**Module 5. Project 2: Conservation Proposal (6-11 December):**

Conservation project proposal applied to the domes of al-Ashraf Khalil and Fatima Khatun.

**Module 6. Urban Solutions (12-15 December):**

Dewatering, extraction, treatment and looking into ways of treating and reusing water with reference to al-Khalifa as a case study.

**Module 7. Project 3: Integrated Solutions (18-25 December):**

Proposals for pilot projects for water extraction and reuse within historic contexts.

