DURABILITY OF REINFORCED CONCRETE STRUCTURES
Assessment, Repairs & Risk-Based Inspection

24 - 28 Jul 2022, Doha
18 - 22 Dec 2022, Doha
DURABILITY OF REINFORCED CONCRETE STRUCTURES
Assessment, Repairs & Risk-Based Inspection

WHY CHOOSE THIS TRAINING COURSE?
Buildings are designed to last for a long time, but many factors, such as corrosion and the brittle increment of concrete, can have an impact on their performance. These factors can cause varying degrees of deterioration in the buildings. Furthermore, buildings may be harmed as a result of deficiencies in the design of the superstructure as well as the interaction of the substructure and soil foundation. It is critical to have a good understanding of the parameters that affect structures in order to avoid many problems and extend the life of buildings. Structural engineers are in charge of evaluating the current state of the system and recommending the type of solution needed to ensure that the modifications are safe, efficient, and cost-effective.

This AZTech training course will feature:
- The main properties of fresh and hard concrete
- Reasons of cracks and its solutions
- Knowledge of destructive and nondestructive tests
- Soil mechanics and its classification and problematic soils
- Precautions to be considered for changing the use of the building

WHO IS THIS TRAINING COURSE FOR?
This AZTech training course is suitable to a wide range of professionals but will greatly benefit:
- Construction engineers
- Design structural engineers
- Supervisors
- Maintenance Engineers and Planners

WHAT ARE THE GOALS?
By the end of this AZTech training course, participants will be able to:
- Know the different forms of reasons for evaluating existing concrete structures, as well as the procedures for doing so
- Know how new live loads would need to be investigated if a residential building is to be used as offices and statistical data on maximum wind speed or maximum snow accumulation becomes available
- Learn the effects of seismic activity and the need to evaluate the resistance of old buildings
- Learn the techniques for assessing and retrofitting fragile systems
- Examine buildings that have been subjected to such severe results, as well as know the guidelines for repair and the manufacture of robust concrete
- Learn the traditional materials such as steel and concrete
THE COURSE CONTENT

Day One: Introduction to Types of Cracks
- Overview of planned maintenance principals and characteristics of world-class planned maintenance
- Reliability and maintenance issues in each design phase and cracks in building
- Repair of cracks, material and system and monitoring of cracks
- Testing of concrete in the structure
- Destructive tests: cores and pull outs
- Nondestructive tests: Rebound hammer, penetration resistance and UPV

Day Two: Loads and Reasons of Failure
- Failure mode of concrete structure
- Corrosion effect on structure risk
- Seismic rehabilitation of existing buildings
- Cost, functional and aesthetic considerations
- Retrofitting of structural system by enhancing strength and continuity
- Rehabilitation of non-structural elements

Day Three: Types of Tests
- Assessment concrete structure and fresh and hardening concrete test
- Use of plates with bolts and/or epoxy fixing
- Jacketing of columns
- Use of new technologies such as carbon fibres and resin
- Application to enhance flexure and shear and use as column confinement
- ACI requirements for the evaluation of existing structures

Day Four: Soil Problems
- Soil classification and Shear strength in soil
- Problematic soil
- Foundation movement inspection and interpretation and tests for evaluating the soil below the foundation
- Underpinning of building structures
- Chemical attacks marine environment
- Durability of concrete as influenced by the used material and systems

Day Five: Types of Repair
- Repair of historic and heritage buildings
- High level of uncertainty
- Constraints on available retrofitting systems: reversibility is a must
- Changed use of a building
- Types of repair the RC structures
- Post test
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ASSESSMENT, REPAIRS & RISK-BASED INSPECTION

<table>
<thead>
<tr>
<th>DATE</th>
<th>VENUE</th>
<th>FEES(USD)</th>
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<tbody>
<tr>
<td>24 - 28 Jul 2022</td>
<td>Doha</td>
<td>$ 4,950</td>
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REGISTER NOW

*This fee is inclusive of Documentation, Lunch and Refreshments and exclusive of 5% UAE VAT

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**Complete & send by fax/mail to address given below. PLEASE USE BLOCK CAPITALS.**

**REGISTRATION DETAILS**

**FAMILY NAME:**

**FIRST NAME:**

**POSITION:**

**COMPANY:**

**MAILING ADDRESS:**

**TELEPHONE:**

**MOBILE:**

**AUTHORISATION**

**AUTHORISE BY:**

**POSITION:**

**EMAIL:**

**TELEPHONE:**

**FAX:**

**POSTAL ADDRESS:**

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**MODE OF PAYMENT**

- [ ] Please invoice my company
- [ ] Please invoice me
- [ ] Please find enclosed cheque payable to AZTECH
- [ ] Online / Credit card

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**Hotel Accommodation**

Hotel accommodation is not included in the Registration Fee. A reduced corporate rate and a limited number of rooms are available for attendees wishing to stay at the hotel venue. Please make your request for accommodation at least 3 weeks prior to the commencement of the course.

**Event Disclaimer**

We reserve the right to cancel or postpone a seminar or related event, change venue, substitution of the Instructor and alter the course content at our sole discretion. If this occurs, our responsibility is limited to a refund of any registration fees already paid. We are not responsible for airline tickets, hotels costs, other tickets or payments, or any similar fee penalties or related or unrelated losses, costs and/or expenses registrant may incur or have incurred as a result of any trip cancellations or changes.

**Cancellation & Substitution**

You must notify the Registrar of cancellations at least 2 weeks before a scheduled seminar in order to be eligible for a credit. If you cannot attend, you may send a replacement from your organisation at no charge. There is a $250 handling charge for all cancellations or rescheduling. We reserve the right to cancel a seminar due to low enrollment. All registrants will be notified in advance and a full refund will be provided upon request.

**4 Ways to Register**

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**An AZTech Certificate of Completion will be given to the delegates who attended and completed the training course.**