Projacs
an egis company
بروجاكس للتدريب والتطوير
Projacs Training and Development

Residential Building Envelope and Structure Assessment

تقييم غلاف المباني والهياكل الإنشائية

04 – 08 October 2020

Dubai / United Arab Emirates

A Member of:
PROJACS ACADEMY

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Introduction

The building envelope (or building enclosure) is the physical separator between the interior and the exterior environments of a building. It serves as the outer shell to help maintain the indoor environment (together with the mechanical conditioning systems) and facilitate its climate control. Building envelope design is a specialized area of architectural and engineering practice that draws from all areas of building science and indoor climate control Structures. The first part of this course is designed to enables all constructors to plan, design, construct, maintain, and repair the building envelope specially the residential buildings.

The second part of this course is deal with the structural assessment. Like people never get younger. Structures, like people can maintain their good health with age, if properly cared for, examined, and treated when needed. One may view this course, in this context, as a structural Physician's reference.

It may be said that a structure that has withstood the combined effects of use, abuse, loads, and environmental conditions over time has, in fact, proven itself. However, buildings and other structures do deteriorate with time because of repeated loadings, exposure to the elements, aging of materials, wear and tear from normal use, abuse, inadequate maintenance, and other factors.

Engineers and managers working in the field of design, construction and maintenance of structures often feel the lack of a comprehensive practical guide on the practice, needs and effective programs of good maintenance. Few practical references are available that bridge the gap between theoretical, technical, practical and managerial matters in this regard.

Who Should Attend?

This course is designed to meet the needs of engineers, managers, Repair contractors, municipal building inspectors, designers and professionals, and owners /managers of buildings who are working in the area of construction, and facing the challenges of maintaining and preserving good, sound buildings. It is specifically useful for structural engineers, quality assurance experts, construction and supervision engineers, owners and managers of constructed facilities.

Course Outline

Day One:

Building envelope

- What is the building envelope?
- What are the building envelope requirements?
- Why is the building envelope?
  - Saving
  - Comfortable
  - healthy
- Keep the outside out and the inside in.
  - Home Envelope
  - Air Leaks
  - Basement Air Leaks
  - Fireplaces
  - Exterior Sealing
  - Duct Sealing
  - Caulking

Day Two:

Insulation

- R-Values
- Attic
- Story-and-a-Half
- Basement
- Wall
- Vapor Retarder
- Types of Insulation

Day Three:

Insulation (cont.)

- Windows & Doors.
- U-factor and SHGC Ratings
- Weather-stripping
- Replacement Options
- New Windows
- New Doors Examining of the building envelope.
- What are your devices to assess building envelope.

Day Four:

Engineering Structure assessment (cont.)

- Types and causes of nonperformance and failures
- Causes of deterioration of concrete
- Exposure to aggressive chemicals
- Carbonation
- Erosion
- Alkali-silica reactivity
- Thermal volume change
- Fire damage
- Non-structural elements

Day Five:

Structure assessment (cont.)

- Assessing and examining a building.
- What the needs from the engineer.
- How to asses a building to judge between two companies or organizations?
- What are the steps that the engineer should take into account during his mission?
- Assessing to know the structural safety of the building.
- Assessing for repair and rehabilitation.
- Three cases study for repair.
- Assessing for investment.
- How to write the final report.
- Three cases study for the structural safety.

Training Method

- Pre-assessment
- Live group instruction
- Use of real-world examples, case studies and exercises
- Interactive participation and discussion
- Power point presentation, LCD and flip chart
- Group activities and tests
- Each participant receives a binder containing a copy of the presentation
- slides and handouts
- Post-assessment

Program Support

This program is supported by interactive discussions, role-play, and case studies and highlight the techniques available to the participants.

Schedule

The course agenda will be as follows:

- Technical Session 08.30-10.00 am
- Coffee Break 10.00-10.15 am
- Technical Session 10.15-12.15 noon
- Coffee Break 12.15-12.45 pm
- Technical Session 12.45-02.30 pm
- Course Ends 02.30 pm

Course Fees*

- **2,950USD**
  **VAT is Excluded If Applicable*

مقدمة

غلاف المبنى هو فاصل مادي في للمبنى بين الداخل والخارج .وهو بمثابة القشرة الخارجية للمساعدة في الحفاظ على البيئة في الأماكن المغلقة(جنبا إلى جنب مع أنظمة التكييف الميكانيكية) وتسهيل سيطرتها على تقلبات المناخ .فبناء وتصميم الغلاف هو مجال متخصص في الهندسة المعمارية والانشائية التي تعتمدعلي جميع مجالات العلم وبناء هياكل المراقبة في الأماكن مغلقة المناخ .تم تصميم الجزء الأول من هذه الدورة إلى تمكين كافة منشئات تخطيط وتصميم وبناء وصيانة وإصلاح غلاف المبنى وخاصة المباني السكنية.

أهداف البرنامج

في نهاية هذه الدورة سوف يتمكن المتدربون من:

- معرفة ما هو الغلاف الخارجي للمبنى
- معرفة الهدف من تصميم الغلاف الخارجي للمبنى
- معرفة المتطلبات الاساسية للغلاف الخارجي للمبنى
  - مكونات الغلاف الخارجي وكيفية تنفيذه.
  - العزل.
  - الفتحات.
  - تشخيص الحالة الانشائية للمبنى.
  - ادوات التشخيص.
  - الخطوات العلمية للأعمال التشخيص.
  - التحكيم فى المشاكل الانشائية بين الشركاتوالهيئات.
- حالات دراسية

الحضور

وتهدف هذه الدورة إلى تلبية احتياجات المهندسين والمديرين والمقاولين الذين يعملون فى مجال التشييد والعزل والتشطيب واعمال الإصلاح والمفتشين مبنى البلدية والمصممين والمهنيين، وأصحاب / مدراء المباني الذين يعملون في مجال البناء، ومواجهة التحديات، وخبراء ضمان الجودة، ومهندسي البناء والإشراف، وأصحاب ومديري المنشآت.