Post-Tensioning Seminar

Design and Construction

A 2 day programme

Optional Hands-on Computer Workshop

Venue

Course Director

6th & 7th March 2017

8th March 2017

Faculty of Civil Engineering of Warsaw University of Technology

Dr Bijan O. Aalami
Professor Emeritus of San Francisco State University

Purpose and Background

This course provides the know-how and tools for the efficient and economical design of post-tensioned structures. After a brief introduction to current post-tensioning systems and construction practice, the course continues with the economics of both grouted and unbonded options, and covers the practical design concepts and design procedures for beams, one-way and column supported two-way flat slab construction. Each step is supplemented with well-documented literature, examples, and computer simulations.

The course continues with the state-of-the-art methods for graphical modelling of structures for analysis and design of floor systems, including the efficient use of AutoCad drawings, Revit Structure© and ADAPT's model generation tools in bringing BIM within reach of everyday consulting work. It presents an integrated and seamless process for generating structural calculations, using Adapt software, post-tensioning and reinforcement drawings, shop (fabrication) drawings and the estimate of quantities.

Learning Objectives

- Current post-tensioning systems and construction practice in buildings and parking structures
- Economic advantages of post-tensioning in building construction
- Design concepts, procedures and detailing of post-tensioned structures
- Latest design code provisions for design of post-tensioned structures (EC2, ACI 318-2008)
- Detailed long hand calculations for post-tensioning design and design verification
- Evaluation of concrete floors for vibration and vibration control
- Equivalent frame and Finite element application to design of post-tensioned buildings
- Structural modelling of post-tensioned buildings and design, using ADAPT software system, AutoCad and Revit Structure
- Hands-on software and design training workshop

Course Benefits

- Receive comprehensive course notes and reference material including detailed design examples
- Find out about the latest developments in post-tensioning systems, its construction practice, and economical advantages
- Understand the requirements of EC2 and ACI building codes, and their impact on your design
- Learn how to avoid costly errors by using an integrated approach in design from architectural drawings to structural documents
- Become skilled in tendon layout and detailing for good construction practice
- Examine the possibilities of using powerful software tailored for the design of post-tensioned and conventionally reinforced concrete, including modelling and design through ADAPT software and Revit Structure
- Learn to optimize the design process for efficiency and economy
- Learn how to integrate effectively the wind and earthquake analysis of buildings with the gravity design of their floors

Day 1 – 6th March 2017

- University Introduction
- Application and Construcion with Post-tensioning Systems
- Economics of Post-Tensioned Construction and Quantities
- Design Basics of Post-Tensioned Structures
- Building Code Requirements for Design of Post-Tensioned Members
- 10-Step Design of Post-Tensioned Floor Systems & Long-Hand Calculation
- Design of a Post-Tensioned Continuous Beam Frame
- Expeditious Design of Post-Tensioned Floors and Beams Using 2D Strip Method
- Questions and Discussions

Day 2 – 7th March 2017

- Design for Shortening of Post-Tensioned Members
- Advanced Design of Post-Tensioned Floor Systems Using 3D FEM Software (ADAPT-Builder)
- Case Study in Successful Application of Post-Tensioning
- Stress Losses in Post-Tensioning
- Seismic / Wind Design of Buildings with Post-Tensioned Floor Systems
- Vibration Evaluation of Conventionally Reinforced and Post-Tensioned Concrete Floor Systems
- Layout of Post-Tensioning Tendons and Detailing of Non-prestressed Reinforcement
- Questions and Discussion & Summary and Evaluation

Day 3 - 8th March 2017 (Optional Hands-On Computer Workshop)

Purpose and Format

The workshop is for those interested in hands-on training in design of post-tensioned buildings. Each participant will be working on their own laptop, in which a full version time-limited copy of the ADAPT program will be installed. Starting with an architect's drawing, participants will be guided through the design process to the creation of the construction and fabrication drawings. They will learn how to start and in a short time conclude, with an efficient design. In Addition, each participant will receive a CD with the educational versions of ADAPT software.

Workshop Benefits

- Obtain hands-on experience and exposure to the efficient design of post-tensioned buildings
- Become closely familiar with the latest design tools and methods
- Receive detailed information, literature and design examples of common post-tensioned buildings

Course Presenters

DR. BIJAN O. AALAMI
Founder and Chairman
Adapt Corporation

DR. FLORIAN AALAMI
President and CEO
Adapt Corporation

DARIUSZ MASLOWSKI
Department Director
BBR Polska Sp. z o.o.

JUAN MAIER
Head of Franchise Development
BBR VT International Ltd

Who Should Attend?

- Structural engineers engaged in concrete and/or post-tensioning design
- Contractors interested in the design of post-tensioned structures
- Engineers responsible for the review of post-tensioned designs
- Academics and students having an interest and background in concrete design
- Building officials and city plan checkers
- Engineers charged with retrofit of post-tensioned buildings
- Forensic engineers who deal with post-tensioned structures

Faculty of Civil Engineering
WARSAW UNIVERSITY OF TECHNOLOGY

Registration

Last Name		First Name	
Address			
City		Country	
E-Mail			
Company			

Participation   ☒ Days 1 & 2   ☐ Day 3 (optional hands-on computer workshop, limited availability)

Fees
PLN 2 750.- for Days 1 & 2   Early bird PLN 2 500.- for Days 1 & 2
PLN 3 150.- for Days 1, 2 & 3   Early bird PLN 2 900.- for Days 1, 2 & 3
Local VAT of 23% included in the fees. Early bird registration and payment must be made before 15th January 2017.

Payment
Registration and payment has to be made before 21st of February 2017.
IBAN: PL11 1950 0001 2006 0313 6177 0002 - Swift IEEAPLPAXXX - IDEA Bank - with the reference 'PT Seminar'
Centrum Kształcenia i Doradztwa IKKU Sp. z o. o., Trebacka 4, 00-074 Warszawa

Cancellation
A 30% administration fee will be levied for cancellations made up to three weeks prior to the start of the course. Cancellations thereafter will be liable to the loss of the full fee. Notice of cancellation must be given in writing by letter or fax and action will be taken to recover, from the delegates or their employers, that proportion of the fee owing at the time of cancellation.

The Faculty of Civil Engineering of Warsaw University of Technology reserves the right to cancel an advertised course at short notice. It will endeavour to provide participants with as much notice as possible, but will not accept liability for costs incurred by participants or their organisations for the cancellation of travel arrangements and/or accommodation reservations as a result of the course being cancelled or postponed. If a course is cancelled, fees will be refunded in full. The Warsaw University of Technology also reserves the right to postpone or make such alterations to the content of a course as may be necessary.

Venue
The course will be held at the Faculty of Civil Engineering of Warsaw University of Technology
Al. Armii Ludowej 16, 00-637 Warsaw, Poland

Accomodation
Accommodation is available in local hotels within easy access to the University, recommended is the Hotel MDM City Centre (www.hotelmdm.com.pl). This is additional to the course fee and participants are solely responsible for the arrangement and payment of the hotel.

Contact Details
IKKU Sp. z o.o. (Organizational Office of the PT Seminar)
Mrs. Magda Getka - E: mgetka@ikku.pl or E: biuro@ikku.pl - T: +48 22 630 9914 - M: +48 694 460 151

I hereby register my attendance, subject to availability, to the Post-Tensioning Seminar to be held at the Warsaw University of Technology in March 2017 and I declare my understanding of the above mentioned payment and cancellation policy.

_____   _____
Signature   Date

Please return this form to E: biuro@ikku.pl or F: +48 22 630 9914