Prefabricated Bridge Elements and Systems (PBES):
Technology and Design for Accelerated Bridge Construction (ABC)

Workshop: 8am-5pm, March 13 & 14, 2012
at Western Michigan University (WMU), Kalamazoo MI

Overview

Compared to traditional bridge construction, accelerated bridge construction (ABC) with prefabricated components offers a number of advantages, including:

- Minimal traffic disruption
- Minimal on-site construction time
- Improved work-zone safety, and
- Better quality components

However, efficient and effective implementation of ABC to realize its maximum benefit requires educating the workforce and officials on the state-of-practice, lessons learned from implemented projects, development and understanding of ABC special provisions, and potential opportunities to encourage investments.

Why attend?

The objective of this workshop is to educate bridge engineers, contractors, and decision-makers in numerous areas of accelerated bridge construction (ABC), including:

- National and state perspectives and associated implementation plans
- Potential funding opportunities
- Bridge superstructure designs commonly used in ABC
- Constructability lessons learned through actual projects
- Constructability review process for successful implementation of ABC projects, and
- Developing and interpreting special provisions for ABC

Instructors

Haluk Aktan, Ph.D., P.E., is a professor and chair at WMU’s Department of Civil and Construction Engineering. He is the Principal Investigator (PI) on the Michigan Department of Transportation (MDOT) project Rapid Bridge Construction, Demolition and Joint Durability, and was the PI on MDOT funded projects on performance and design of precast bridge structural systems. He has also been a consultant to private and public agencies dealing with assessment and performance of precast structures and analysis of reinforced concrete, prestressed concrete and steel structural systems.

Upul Attanayake, Ph.D., P.E., is an assistant professor in the Department of Civil and Construction Engineering at WMU. He has been a co-PI on numerous MDOT funded research projects on ABC and prefabricated systems. He gained firsthand experience in ABC by attending two FHWA sponsored demonstration projects held in Utah and Massachusetts. Upul has conducted several workshops in the U.S. and overseas on finite element basics and refined analysis of bridge structural systems.

Yufeng Hu, Ph.D., P.E., is a faculty associate on the MDOT sponsored research project Rapid Bridge Construction, Demolition and Joint Durability. He worked on numerous prestressed concrete and steel bridge designs and load rating projects while working for a consulting company, and has served as an instructor for a short course on bridge structural analysis using FEM.

Agenda

Day one (March 13)

7:30 8:00  Continental breakfast
8:00 8:30  Welcome, introduction, and overview
8:30 9:30  MDOT perspectives, objectives and plans for ABC implementation
9:30 10:00  FHWA perspectives
10:00 10:30  Break
10:30 11:00  FHWA ABC resource center
11:00 12:00  State-of-practice overview of PBES
12:00 1:00  Lunch
1:00 2:00  Connection details, materials, and operations
2:00 2:30  Lessons learned by post-construction analysis and review
2:30 3:00  Break
3:00 4:00  Constructability review
4:00 4:30  Technical tools for improving constructability
4:30 5:00  Discussion and Q/A

Day two (March 14)

7:30 8:00  Continental breakfast
8:00 12:00  Review and discuss design examples that illustrate the connection design process
12:00 1:00  Lunch
1:00 4:30  Interactive review of connection details, tolerances, and provisions specific to ABC
4:30 5:00  Evaluation and adjournment

Instruction by the Department of Civil & Construction Engineering at Western Michigan University
Registration
The cost to attend this workshop is $195, which includes workshop materials, continental breakfast and lunch for both days. Please let us know if you have any specific dietary needs. Workshop participants are eligible for 1.6 CEUs. The cancellation policy is as follows:
- On or before 2/15/12: $20 administration fee
- 2/16/12 - 2/29/12: 50% refund (unless seat is filled)
- After 2/29/12: no refund (substitutions OK)
Please notify the Center for Technology & Training (CTT) if an alternate participant will be attending.
To register contact the CTT at 906-487-2102 or ctt@mtu.

Lodging
Participants are responsible for their own lodging expenses. A block of rooms has been set aside at the Staybridge Suites Kalamazoo at the rate of $100 per room. To reserve a room at this rate, call the Staybridge Suites at (269) 372-8000, and mention the Civil and Construction Engineering Department at Western Michigan University.

Workshop Venue
Fetzer Center, Western Michigan University
Kalamazoo, MI 49008-5239

Directions from Staybridge Suites to Fetzer Center
1. Head south on Seneca Ln toward Stadium Dr 446 ft
2. Turn left onto Stadium Dr 1.6 mi
3. Turn left onto Howard St 0.6 mi
4. Turn right onto W Michigan Ave 0.1 mi
5. At the traffic circle, take the 2nd exit onto Rankin Ave 0.2 mi
6. Turn right onto Business Ct 0.1 mi
7. Continue onto Marion Ave 256 ft
The Fetzer Center will be on the right