2015 International Bridge Conference®
David L. Lawrence Convention Center, Pittsburgh, PA

Technical Workshop W-06:
Retrofitting and Service Life Extension of Bridge Structures using FRP Composites

This workshop addresses the issues related to the aging bridge infrastructure with solutions on extending the service life of bridge structures such as durable marine protection systems or integrating pedestrian access to existing bridge structures.

Workshop Details
Thursday, June 11, 2015
8:00 am–11:00 am
Room: 328

Presented By:

Dustin Troutman
8:00 — 8:30 am

Kevin Spoo
8:30 — 9:00 am

Crawford Dewar
9:00 — 9:30 am

Scott Reeve
9:30 — 10:00 am

David White, P.E.
10:00 — 10:30 am

James Jones
10:30—11:00 am

For over 20 years, FRP composites have provided bridge engineers and owners with innovative and cost effective solutions to rebuild and retrofit bridge structures demonstrating long-term durability especially in highly corrosive geographical regions. FRP composites features such as lightweight, corrosion resistance, and prefabrication have reduced assembly and installation time resulting in lower installation costs and delivery for new construction. In retrofit and rehabilitation situations, FRP composites are faster to install and require minimal disruption to the structure while in service that extends the service life of bridge structures.

This workshop will cover recent world-wide bridge installations focused on design and construction of innovative pedestrian bridge retrofits, rehabilitation of high occupancy and large bridge installations using structural strengthening systems, bridge pier protection systems, and innovative sustainable concrete reinforced with FRP rebar. Attendees will learn:

1) how to design and specify composites for bridge systems using existing bridge codes,
2) construction techniques and connections to adapt walkways to existing structures,
3) how to reduce risk and costs of corrosion with sustainable concrete solutions.

Presentations will cover use of standards and cover the aesthetics, construction, and economics of using FRP composites to solve a variety of bridge infrastructure problems.

About the Session Sponsor

The American Composites Manufacturing Association (ACMA) is the world's largest composites industry trade group. We are manufacturers, material and equipment suppliers, distributors, academia and end users, dedicated to growing the composites market by promoting the competitive advantage and versatility of composite materials.

CAMX

ACMA also hosts the largest composites and advanced materials conference/trade show in North America: The Composites and Advanced Materials Expo - CAMX, October 26-29, 2015 — Dallas, TX
www.theCAMX.org

Transportation Structures Council

The Transportation Structures Council's (TSC) mission is to educate practitioners on FRP composites used in civil engineering and construction applications and to coordinate the development and promotion of composites technology materials and products used in the repair or replacement of transportation structures. The TSC is a council of ACMA. Since 1994, the council's members have spearheaded product development, applications, design guidance, and specifications and standards, which have evolved to the suc-

What We Do
TSC partners with professional, technical and trade organizations to promote awareness of FRP composites technology, and is an industry leader in the development of codes and standards. For more information, please visit:
www.compositesinfrastructure.org.

Presentation Descriptions

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Design and Specification of High Performance Corrosion Resistant Bridge Fender System

This presentation will focus on design and specification and construction of Fiber Reinforced Polymer (FRP) polyurethane pipe piles used to protect concrete bridge piers on a variety of bridge installations.

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Kevin Spoo, CCT
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Sustainable Concrete Solutions & GFRP Reinforcements to Reduce Risk and Costs of Corrosion for Bridge Structures

This presentation will demonstrate the safe utilization of seawater and salt-contaminated aggregates (natural or recycled) for a sustainable concrete production when combined with GFRP reinforcement to construct durable and economical concrete infrastructures.

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Crawford Dewar
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Fiberglass Composite Bridge System in Conformance with the Canadian Highway Bridge Design Code (CHBDC)

This presentation will cover design of FRP composites bridge systems using the Canadian Highway Bridge Design Code with comparisons to LRFD. In addition, design values for recently tested full scaled bridge systems will be used in demonstrating how FRP composites comply with the code.

Scott Reeve
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Lightweight FRP Solution Meets Growing Demand for Bicycle and Pedestrian Sidewalks

Providing safe access for bicycle and pedestrian traffic on existing vehicle bridges presents a serious challenge. The high-strength, lightweight FRP deck construction allows the design engineer to tie into the existing structure with minimal increase in dead load as a cantilevered shared-use bridge system providing a cost-effective solution that ensures cyclist and pedestrian safety without diminishing traffic flow. FRP is a good alternative for replacing existing, narrow concrete sidewalks or adding new bicycle/pedestrian paths.

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Preservation and Service Life Extension of Concrete Bridges Using FRP Composites

This presentation will focus on design, specification and construction of FRP strengthening systems used to extend the service life of concrete bridges by highlighting a number of bridge installations.

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Spanning The Future - An Overview of Composite Pedestrian Structures in Australia and Around the World

This presentation will focus on new innovative designs that were applied to concrete and steel existing bridge structures from a variety of installations from around the world that demonstrate practical applications combined with beauty for bridge structures.