



Virtual Technology Tour: Glass Fiber Production for Structural Application

**OC SCIENCE
& TECHNOLOGY
VIRTUAL TOUR**

MATERIAL SCIENCE THAT ENABLES BRIDGES OF THE FUTURE.

Join the **Florida Department of Transportation** and **Owens Corning** to learn how Fiberglas™ Rebar, the corrosion resistant, lightweight, electromagnetically neutral concrete reinforcement solution is designed, tested and produced.

23
TUESDAY, FEBRUARY 23RD

11:30AM-1PM EST

VIRTUAL MEETING



GFRP rebar for deck & substructure of Halls River Bridge (2017-18)



GFRP Secant-Pile Shaft cages for A1A-Flagler Beach seawall (2019)



FRP-PC FSB's US-1/Cow Key span replacements (2020)

Glass Fiber Production for Structural Application

VIRTUAL TOUR AGENDA

11.30 am – 11.45am

FDOT Prospective Use Of GFRP In State Projects

Steven Nolan, P.E. Advanced Materials
for Structural Durability & Resiliency

Owens Corning Welcome

Chad Fenbert - General Manager

11.45 and – 12.00pm

The Science Behind the Glass Making

Dr. Michelle Korwin-Edson - Senior Scientist

12.00pm - 12.15 pm

Fiberglass Rebar Types And Manufacturing Process

James Priest – Senior R&D Leader

12.15 pm – 12.30 pm

Quality Assurance & Material Characterization

Alexis Green – Advanced Engineer R&D

12.30 pm – 12.45 pm

FDOT & Industry Collaboration

Dr. Dave Hartman - Senior Principal Scientist

12.45 pm – 1.00 pm

Questions & Answers

All speakers & attendees



MATERIAL SCIENCE THAT ENABLES BRIDGES OF THE FUTURE.

Join the **Florida Department of Transportation** and **Owens Corning** to learn how Fiberglas™ Rebar, the corrosion resistant, lightweight, electromagnetically neutral concrete reinforcement solution is designed, tested and produced.



TUESDAY, FEBRUARY 23RD



11:30AM-1PM EST



VIRTUAL MEETING

Virtual Technology Tour: Glass Fiber Production for Structural Application

Glass Fiber Production for Structural Application



Photos: Eisenhower Archives

ANDREW C. LEMER

The author is a Senior Program Officer, Transportation Research Board, Washington, D.C.

It's tough to make predictions, especially about the future. The observation—attributed variously to American baseball great Yogi Berra, Danish physicist Niels Bohr, and 19th-century author Mark Twain—is well supported by experience.

Thomas Watson, then president of IBM, famously averred in 1943, "I think there is a world market for maybe five computers." Of course, a computer at the time filled a large room, used vacuum

observed that "I did not, in fact, foresee that [atomic energy] would be released in my time. I believed only that it was theoretically possible. It became practical through the accidental discovery of chain reaction, and this was not something I could have predicted."

When President Dwight D. Eisenhower signed the Federal-Aid Highway Act of 1956, he and his advisors looked forward to building a system that would "eliminate unsafe roads, inefficient routes, traffic

During the 1919 Transcontinental Motor Truck Convoy, then-Lt. Col. Dwight D. Eisenhower saw the poor condition of U.S. roads firsthand. Faced with one gully after another as they crossed Wyoming, engineers rolled up their sleeves and reinforced unstable wood bridges with planks (*left*). Then, they held their breath as the first truck lumbered across (*right*). That arduous journey—plagued by vehicles overturned in ditches and mired in mud—inspired later President Eisenhower to sign the Federal-Aid Highway Act of 1956 into law.

It makes a difference where the technology is applied in the complex system of transportation and land use, whether it be in vehicles the infrastructure that carries and serves vehicular movement, or passenger or freight payloads.

TR News 330 November-December 2020: Living with Transformational Technologies and Other Surprises

British-Hungarian Nobel Prize physicist Dennis Gabor wrote:
"The future cannot be predicted, but futures can be invented."

TR NEWS November-December 2020

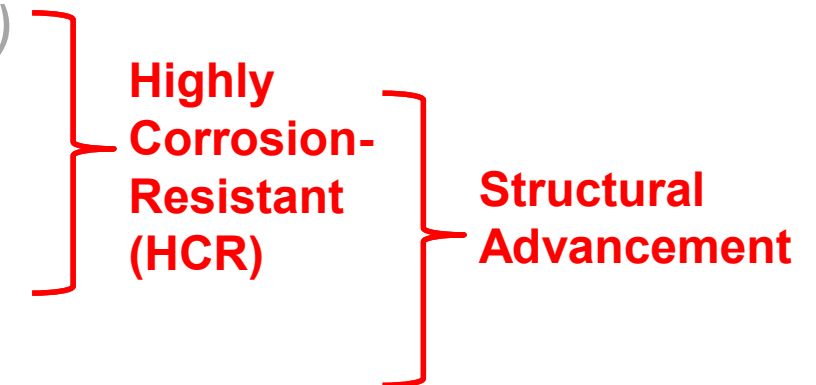
<http://www.trb.org/main/blurbs/181859.aspx>

Durability & Structural Advancement Needs

- **Durability** needs – low-maintenance, extended service-life, cost-effective solutions.
- **Structural** needs – Inspectable, repairable, robust, extended span lengths (light-weighting and/or high-strength & high-endurance):



- HSSS-Prestressed Concrete (*2205 Duplex SS*)
- CFRP-Prestressed Concrete (*Carbon strands*)
- FRP-Reinforced Concrete (*Glass & Basalt*)
- Ultra-High Performance Concrete (*UHPC*)
- Light-weight Concrete or FRP (*Longer spans and/or less shipping cost*)



Durability & Structural Advancement Implementation



Florida Department of
TRANSPORTATION

Safety, Innovation, Mobility, Attract, Retain & Train

E-Updates | FL511 | Site Map | Translate

Search FDOT...



Home About FDOT **Careers** Contact Us Maps & Data Offices Performance Projects

Office of Design

Office of Design / Design Innovation
Design Innovation

Office of Design
Florida's Transportation Engineers

Non-Corrosive

The Florida Department of Transportation (FDOT) continually strives to enhance all areas of its operations. In support of these efforts, the department recently moved into a bold new era for innovative ideas, research and accelerated implementation. Success will depend on our ability to carefully evaluate or implement the products and services provided to the users of Florida's transportation system. Our goal is to utilize newly developed technology or employ creative thinking to generate greater value for every transportation dollar invested.

After researching and evaluating many innovative ideas, the Central Office has developed a list of concepts, products and services that may be the best solution to the project's needs or design challenges. Some items on the list are completely developed, and only need tailoring to your project. We encourage you to propose one or more of these innovations for project specific solutions with confidence of approval by the Districts. Other items are not fully detailed and will require coordination with and approval by the District's Design Office. Many of these innovations have been successfully implemented in other states and countries. Not all projects benefit from these innovations and the Department is not advocating the general use of new products or designs where an economical well proven solution exists and is the most appropriate solution for the situation.

FDOT Transportation Innovation Challenge

The Department invites you to share your thoughts on ways we can challenge ourselves to be innovative, efficient and exceptional at our [Invitation to Innovation website](#)

Highly Corrosion-Resistant

<https://www.fdot.gov/design/innovation/>

Structures Design Office

Curved Precast Spliced U-Girder Bridges

Fiber Reinforced Polymer Reinforcing

FRP Members and Structures

Geosynthetic Reinforced Soil Integrated Bridge System

Geosynthetic Reinforced Soil Wall

Prefabricated Bridge Elements and Systems

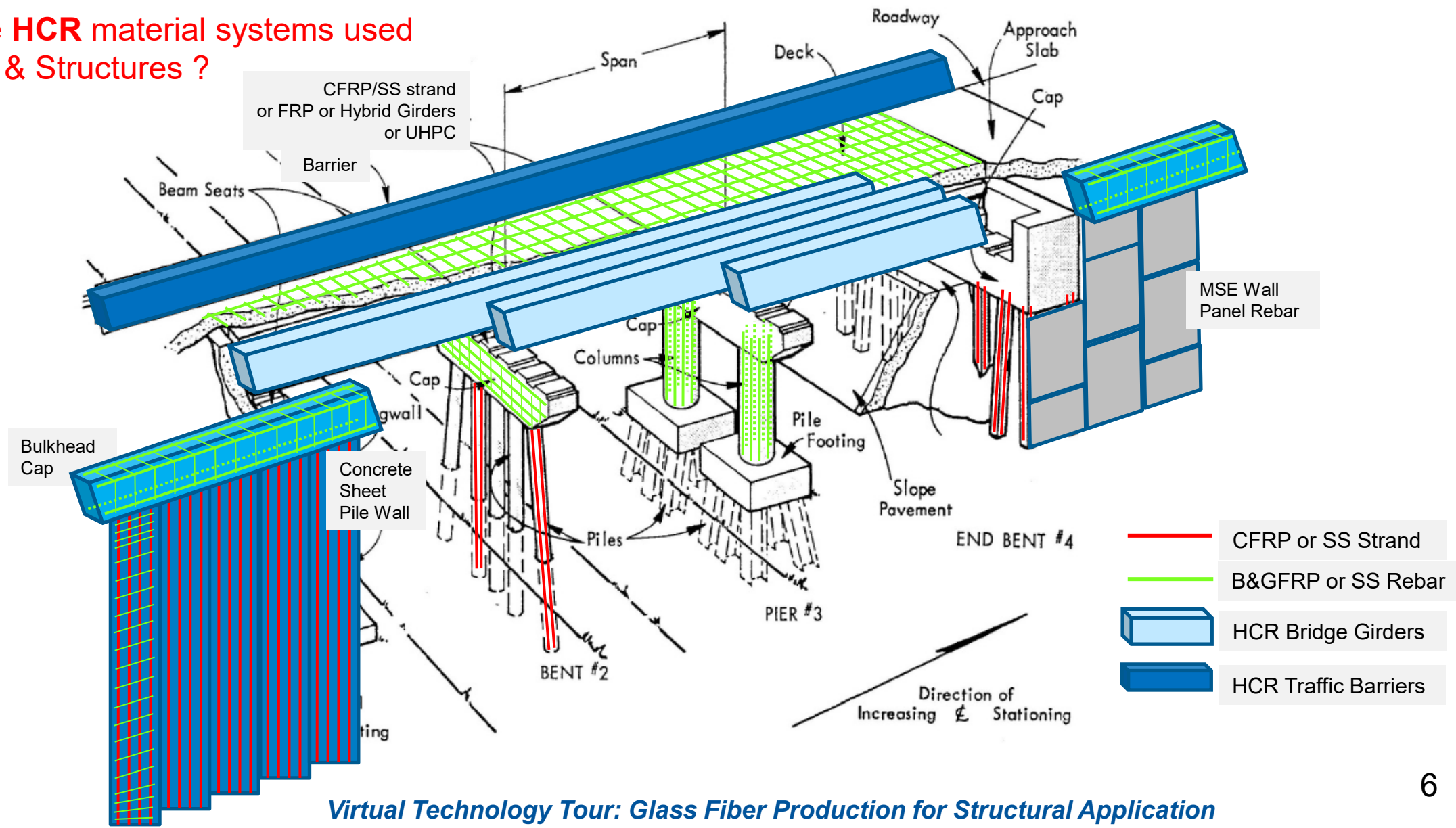
Segmental Block Walls

Ultra-High Performance Concrete (UHPC)

+ Stainless-Steel Prestressing Strand & Rebar

Durability & Structural Advancement Applications

Where are **HCR** material systems used in Bridges & Structures ?



Let the Tour Begin...

ANNOUNCEMENT

Infrastructure Summit

March 3rd (11am - 5pm)

Join the American Society of Civil Engineers as they release their 2021 *Report Card for America's Infrastructure*. The quadrennial assessment will grade the condition and performance of 17 categories of infrastructure – including drinking water, roads, levees, dams, and much more. After the grades are unveiled, ASCE will convene a program of elected officials, decisionmakers, and thought leaders to discussion solutions to raising our infrastructure GPA.

Find out more at:

<https://www.infrastructurereportcard.org/>



2021 REPORT CARD
FOR AMERICA'S INFRASTRUCTURE
ASCE

