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THE NATIONAL COMPOSITE CENTER TO RECEIVE $1 MILLION IN FEDERAL FUNDS TO BUILD COMPOSITE BRIDGES ON D.C. WATERFRONT

The National Composite Center (NCC) has been selected to receive $1 million in federal funds to build composite bridge decks for pedestrian and bicycle traffic along the Anacostia River waterfront in Washington, D.C. U.S. Senator Mike DeWine (R-OH), chairman of the District of Columbia Appropriations Committee, secured funding for the project as part of the Fiscal Year 2005 DC Appropriations Bill. Washington, D.C. is providing $1 million in matching funding. NCC may also manage the project for the D.C. Department of Transportation (DOT).

The project is the latest in NCC's Composites FOR Infrastructure (C4I) program, an initiative that helps infrastructure customers harness the advantages of fiber reinforced polymer materials. C4I also includes ongoing work to develop innovative techniques to lower material costs and provide important monitoring and inspection support for composite bridge structures.

The infrastructure market continues to be a key growth area for composites which offer a dynamic solution to the significant problem the U.S. faces with deteriorating bridge decks – particularly in Northern states where road salt is used to combat winter icing conditions. Composite material can extend a bridge deck's life span to 100 years or more. When compared to the 15 to 20 year life span of traditional bridge materials, use of composites can dramatically lower life cycle costs as well. NCC expects this project to reduce the lifetime cost of the D.C. bridges by as much as 30 percent.

Aside from the significant commercial advantages for Washington, the project recognizes that Ohio is at the forefront of the infrastructure industry in the areas of design, engineering, component production, installation management, testing and reporting.

NCC's experience with composite bridge decks in the original Project 100 followed by its breakthrough C4I initiative makes the Center uniquely qualified to lead this. In addition, composite production used in non-aerospace applications like this one, opens the door for additional cost reductions for aerospace and military needs, helping the Center achieve composite affordability initiatives more readily.

"I am proud that an Ohio organization can provide the technology needed to ensure visitors to our nation's capital can enjoy the city's waterfront for years to come," said Senator DeWine. "Not only will Washington, D.C. visitors and residents benefit, but Ohio designers, engineers, manufacturers and producers will participate in this project." While actual bridge installation will be done by D.C. construction companies, contracts for materials are expected to be awarded through a competitive process involving Ohio businesses and companies from surrounding states.

NCC INTRODUCES NEW BRIDGE CONNECTION

NCC introduced a new innovation during installation of a pultruded Fiber Reinforced Polymer (FRP) bridge deck on Hales Branch Road in Clinton County, Ohio. Long awaited by Ohio county engineers, the Martin Marietta Composites (MMC) deck was installed October 1 with a new connection style – mechanical fasteners.

Workers apply thick sand filled epoxy to steel beams to create a leveling bed for the FRP deck panels.

Mechanical fastener connects FRP deck to steel beams.

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35-ton hydraulic crane helps set panels in place.

Taking just two days to set the composite panels in place and bolt them to the steel beams, the deck was ready for paving on the third day.

Prior to this project, all MMC decks were attached to steel girders using Nelson stud connections. Important feedback gleaned by the National Composite Center (NCC) during previous FRP installation projects revealed that many Ohio county engineers felt the Nelson stud connection was too time consuming and not suitable for counties to install themselves. In addition, the majority of Ohio's counties don't own the special equipment needed to weld Nelson studs.

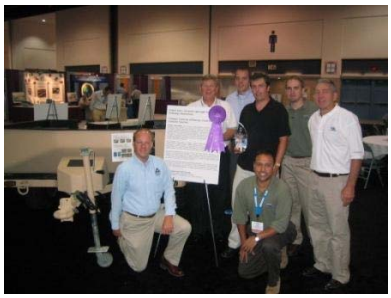
The Clinton County bridge, due to its relatively small size at 24 feet wide by 65 and a half feet long (a total of 1,572 square feet) set the stage for the new connection's introduction. Sand-filled adhesive was used as a leveling bed for the FRP decking. The connection, already used in the timber industry, employed a bolt through the thickness of the FRP deck and hooked the flange of the girder with a clip.

Look for NCC's Infrastructure Column in the November issue of CF Magazine to find out what the construction company project manager had to say about working with the new connection.

NCC'S PREFORMING TECHNOLOGY HELPS DEMONSTRATION PROJECT EARN AWARD

The National Composite Center's (NCC) ***Rapid Fiber Preforming*** technology provided a critical component to a demonstration project that earned a Best of Show Award at the recent Composites 2004 Trade Show held in Tampa, Florida.

Led by the University of Delaware's Center for Composite Materials (CCM), a team including NCC, Vector Composites Inc., WebCore Technologies Inc. and Stratton Composite Solutions collaborated to develop an advanced lightweight trailer for TARDEC, the Army's Tank-Automotive, Research, Development & Engineering Center.



(Kneeling l to r) Scott Reeve, NCC; Rob Bannerjee (WebCore). (Standing l to r) Alan Fatz, Andy Loff, NCC; Bob Stratton, University of Delaware; Rod Brecht, and Dan Hutcheson, WebCore.

CCM performed trailer and tool design, processing, assembly and prove-out on the project. The trailer was built using carbon fiber preforms produced with NCC's ***Rapid Fiber Preforming*** process licensed by Vector for defense applications. WebCore's TYCOR® three-dimensionally reinforced foam was used as the core material. The materials were then infusion molded in two components – a flat bed and trailer box. The Army's Picatinny Arsenal provided an integrated titanium wishbone frame.

The trailer design allows a base flat-bed platform to be coupled through a modular attachment system to accept a large variety of loads including liquid and solid storage delivery tanks, a standard trailer box, a genset, weapons and equipment or containerized cargo. The flexible solution successfully demonstrated parts consolidation, corrosion resistance, lightweight and durability. The Army is using

the trailer project as the basis for its "Trailer Transformation" program to reduce the number of individual trailer variants and advance its next generation of prime movers.

NCC's ***Rapid Fiber Preforming*** technology traces its roots the Center's participation to produce composite pick up truck boxes. Since then, NCC has developed its signature ***Rapid Fiber Preforming*** technology to provide a total preforming solution. In addition to dramatically reducing manufacturing costs by eliminating the hand lay up work typically associated with more conventional preform methods, the technology works well with a variety of different materials from glass and carbon fibers to binders and additives for a wide range of applications. This flexibility allows NCC to customize its preforming applications to fit nearly any size job.

NCC TECHNOLOGY GENERATES INTEREST AND LEADS AT ACMA'S COMPOSITES 2004

NCC showcased key technologies including its proprietary Litecast® and new developments in Long Fiber Thermoplastics (LFT) at Composites 2004. Visitors were able to see first hand examples of NCC's ***Rapid Fiber Preforming*** and closed molding expertise.

A key highlight of the show was NCC's demonstration of a high speed infusion process and reusable vacuum bag for closed molding of a Class 8 truck bumper. The demonstration drew an attendance of nearly 150 people and generated high trade booth traffic from individuals who wanted to find out more about NCC's closed molding techniques.

NCC's LFT display parts also proved a strong draw, pulling visitors into NCC's booth to inquire about material usage and the Center's manufacturing processes. This newest technology in NCC's expanding portfolio produced a number of qualified leads for the Center. NCC also held a series of meetings with customers and partners.

SPECIAL CEREMONY TO WELCOME USU WRIGHT FLYER TO PERMANENT HOME IN WARREN COUNTY

The USU Wright Flyer™ will be officially welcomed to its permanent home at Warren County Airport in Lebanon, Ohio during a special ceremony to be held at the airport's main terminal on December 2 at 7 p.m. The event is open to the public and will include refreshments. Top aviation photographer Dan Patterson will also be on hand to take portraits of guests in the Flyer.

Following the transfer, the USU Wright Flyer™ will be managed by newly formed non-profit organization USU Wright Flyer of Ohio and become part of a National Aviation Heritage Area being established. Dr. David Widauf, former Associate Professor for the College of Engineering, Utah State University; Director of the USU Wright Flyer™ Project and a Colonel in the Air Force Reserves will be the event's keynote speaker.

A century after the Wright Brothers stunned the world with their invention of flight; Dr. Widauf caught their vision anew with a concept to build a replica of Orville and Wilbur's 1905 Flyer using composite material. Widauf tapped the National Composite Center (NCC) to help sponsor the project and coordinate bringing the USU Wright Flyer™ to Dayton.

USU Wright Flyer of Ohio, established by a group of local aviation enthusiasts, will now advance the Flyer's role as a tool to help re-engage young people with a passion for innovation and a renewed interest in aviation and aeronautics.

"We wanted to build a reliable Flyer," Widauf said, "but we also wanted to make it robust enough for people to touch, handle, feel the wings warping and even take rides. It took about six years but we've seen those dreams come true. People's ability to interact with the Flyer at this level has made it almost a living legacy if you will."

Legislation is anticipated to be passed before the end of the year to create funding for the National Aviation Heritage Area of which the Flyer will be part of. A board has been formed for the Area which will work to raise the visibility of significant aviation sites in Dayton and Southwest Ohio and help organize and strengthen events for the region's counties.

In addition to showcasing the transfer of the USU Wright Flyer™, the ceremony will feature current sponsors such as National City Bank. "It's fitting the Flyer should make its home in the birthplace of aviation and composites," said Lou Luedtke, President of NCC.

For more information about the event contact Alan Wolfson at 513-774-7099 or email at usuwrightflyer@fuse.net.