Focus of This Issue:
Standard Products Used in Various Systems

Articles include:

Ramapo River Bridge – destroyed by hurricane Irene, replaced in just 6 weeks
Project Wave – new yogurt manufacturing plant built to aggressive schedule
High Construction Costs Lead to Innovation in Winnipeg – the use of precast

Ramapo River Bridge – An ABC Project Made Possible By Company Collaboration

In 2009, Lafarge Ductal® began a collaboration with The Fort Miller Co., Inc. of Schuylerville, NY (who was already a customer) to help them expand the use of their precast bridge components by a synergistic new approach that used Ductal® (UHPC) as a field cast material to connect the precast pieces in the bridge. While this concept was already in early adoption in the Province of Ontario, Canada, both Fort Miller, NYSDOT, USFHA and PCINE quickly realized this innovative solution would address many of the inherent problems with deteriorating bridges.

Bridge decks which are constantly subjected to flexing from heavy trucks, winter freezing/thawing and deicing suffer from deterioration and maintenance. The cost and challenges of repairing this deterioration is further complicated by the negative impact and inconvenience to the users of the bridge during repair or reconstruction. The use of precast bridge deck components can alleviate much of the user inconvenience by speeding the construction and minimizing the out of use during repair or replacement.

The use of precast bridge components and a Ductal® field cast joint can result in a joint that is stronger than the precast component. Ductal® has a very short bond development length and can provide a simpler and smaller field connection, which reduces manufacturing cost of the precaster and speeds the casting in the field. The result is a faster, simpler and stronger joint, thereby providing a better solution for both the owner and user of the bridge.

Ramapo River Bridge Project Overview:

Ten, full-width precast deck panels resting on 5 steel girders, with Ductal® JS1100RS in the joints to connect the precast panels. Precast Manufacturer: The Fort Miller

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Ramapo River Bridge  
(continued from page 1)

Co., Inc., Schuylerville, NY; General Contractor: D.A. Collins Construction Co.; Location: Village of Sloatsburg, NY; Owner: New York State Department of Transportation. It took six weeks from the date of the Hurricane for the bridge to be open to traffic.

Photos and story from the website of Lafarge Ductal (www.ductal-lafarge.com), submitted by Scott D. Harrigan, P.E., Manager of Engineering at The Fort Miller Co., Inc.

Project Wave
Project Wave (continued from page 2)

Project Wave is the name for a new yogurt manufacturing plant in Batavia, NY, built for the Pepsi Company. Mark Koenig, director of engineering and technology at the PepsiCo Global Nutrition Group, said while there were a few reasons Pepsi and the Theo Muller Group picked the Genesee Valley Agri-Business Park for Project Wave, a key was getting site-grading permits within 15 days. The 15-day permitting process allowed Wave Holding LLC to fast-track its development plans, which was absolutely critical in bringing the project to Batavia.

Without the 15-day permitting, Pepsi and Muller would have been looking at a 30-month process to get its new Greek yogurt products to market. The current timeline is 18 months, all because Town of Batavia officials were able to move the permitting process along quickly. This was the first step in design build firm The Haskell company’s very aggressive schedule, and it has been reflected throughout. For example, here is the precaster’s schedule:  Jan 14 – project go ahead received; Feb 14 – submit shop drawings; Apr 14 – start fabrication; May 1 – start erection; June 1 – add second crane on site; June 25 – complete erection.

The Haskell Company, which functioned as Architect, Structural Engineer, and General Contractor, chose Oldcastle Building Systems, Selkirk, NY, as their precast fabricator and erector. To meet this aggressive schedule, Oldcastle teamed with its plant in Edgewood, MD, and partnered with L.C. Whitford Materials Co. in Wellsville, NY, for part of the work. The demanding schedule noted above could not have been met without the willingness of precasters to joint venture, as can be realized looking at the structural list:

68 pcs 3" x 7'-6" wide Filigree style components (13,800 sf) – Oldcastle Selkirk
76 pcs 33”D & 25”D Double Tees x 16'-0" wide 55,000 sf) – L.C. Whitford
78 pcs 24”x24” and 20”x20” precast columns – Oldcastle Selkirk
141 pcs 16”x28” and 24”x48” precast beams – Oldcastle Selkirk
52 pcs 8”thk x 10’-0” wide precast solid walls – Oldcastle Edgewood
199 pcs 12”thk x 12’-0” wide precast carboncast insulated walls – Oldcastle Edgewood

Besides meeting an aggressive schedule, precast enabled wide open manufacturing spaces, met aggressive snow loading requirements, presented easily cleaned and very low maintenance wall surfaces, and helped meet modern energy saving needs. Thanks to David Wan, P.E., Chief Engineer, Oldcastle Precast, for this project information.

Of related interest and importance, David Wan is also Secretary of ACI Committee 533, which published in March 2012 the new ACI 533R-11, Guide for Precast Concrete Wall Panels, which supercedes ACI 533R-93. “This guide presents recommendations for precast concrete wall panels. It should be used with ACI 318-08, ‘Building Code Requirements for Structural Reinforced Concrete,’ which is legally binding when adopted by the local authority. This guide discusses the basic principles of design, tolerances, materials, fabrication, installation, quality requirements, and testing.”
High Construction Costs Lead to Innovation in Winnipeg

FWS Commercial is using more pre-fab components in its multi-family residential projects. Michael Grimes, Director of Business Development at FWS Commercial Properties Ltd., said to save money, construction companies can reduce the amount of time they spend on the worksite, and they can do that by using more pre-fabricated components. “You don’t save money by betting up on your sub-trades,” Grimes said. “You save money by thinking outside the box.”

FWS Group is looking closely at ways to reduce the increasing cost of building new apartment and condominium buildings. To that end, the company is planning to use pre-fabricated insulated walls, which come as a single wall system, in multi-story residential applications. Grimes said the company has been using the pre-fab in industrial projects, and has found it faster and less expensive to use them than traditional components.

FWS Commercial is also looking into making more use of pre-cast concrete columns and beams and pre-cast hollow-core floor slabs on multi-tenant residential buildings. From an article by Peter Caulfield in the Journal of Commerce Online, June 13, 2012.