

CONCRETE CONNECTIONS

Concrete Connections is an annotated list of websites where information is available about concrete bridges. Links and other information are provided at www.aspirebridge.org.

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<https://www.nts.gov/investigations/AccidentReports/Reports/HAR1902.pdf>

This is a link to the National Transportation Safety Board's Highway Accident Report for the Pedestrian Bridge Collapse over SW 8th Street in Miami, Fla. that is referenced in the Editorial on page 2.

<https://www.nts.gov/investigations/AccidentReports/Pages/HAR1902.aspx>

This is a link to an NTSB webpage from which other documents related to the investigation of the FIU pedestrian bridge collapse discussed in the Editorial on page 2 can be obtained.

<https://www.stantec.com/en/markets/transportation/bridges>

This is a link to the website for Stantec's bridge market sector. Stantec's North American bridge division provides a full complement of bridge engineering services and is the featured company in the Focus article on page 6.

<http://parapidbridges.com>

This is a link to the Plenary Walsh Keystone Partners' website for PennDOT's Rapid Bridge Replacement project featured in a Perspective article on page 11. The multiyear, \$1.1 billion project has replaced 558 bridges.

<https://www.youtube.com/watch?v=4uFGawmzNXM>

This is a link to a Delaware Department of Transportation time-lapse video of the construction of the Christina River Bridge in Wilmington, Del. The bridge is featured in a Project article on page xx and also is mentioned in the State article on page 16.

<https://highways.dot.gov/bridges-and-structure/ultra-high-performance-concrete/ultra-high-performance-concrete>

This is a link to a Federal Highway Administration (FHWA) website featuring a video explaining the components and virtues of ultra-high-performance concrete (UHPC). This FHWA website also has links to websites of UHPC projects. UHPC is the subject of a Concrete Bridge Technology article on page 32.

<http://www.aspirebridge.com/magazine/2017Spring/CBT-UHPC-GameChanging-SPG2017-Web.pdf>

This is a link to the Concrete Bridge Technology article "UHPC Is a Game-Changing Material for Bridge Producers," which appeared in the Spring 2017 issue of *ASPIRE*®. It is mentioned in the Editor's Note for the Concrete Bridge Technology article on page 32 that outlines a PCI-sponsored project to assist six precasters in developing their own UHPC mixtures.

<https://infobridge.fhwa.dot.gov>

This is a link to the FHWA Long-Term Bridge Performance (LTBP) InfoBridge. InfoBridge is a portal to access bridge performance-related data and information. InfoBridge is highlighted in the FHWA article on page 44.

<http://www.trb.org/main/blurb/179653.aspx>

This is a link to the downloadable version of *Design of Concrete Bridge Beams Prestressed with CFRP Systems*, National Cooperative Highway Research Program (NCHRP) Report 907. The report is mentioned in a Concrete Bridge Technology article on page 38, which focuses on methods of preventing or delaying corrosion of reinforcement.

<http://www.trb.org/NCHRP/Blurbs/176163.aspx>

This is a link to the downloadable version of *Strand Debonding for Pretensioned Girders*, NCHRP Report 849. The report was the basis for the recently adopted revisions to the American Association of State Highway and Transportation Officials' *AASHTO LRFD Bridge Design Specifications* on debonding mentioned in the LRFD article on page 52.

https://www.fhwa.dot.gov/bridge/abc/docs/Blackbird-Station-Road_casestudy.pdf

This is a link to a project case study on the use of UHPC for connections and an overlay in the replacement of Bridge 1-438 on Blackbird Station Road over Blackbird Creek in Townsend, Del. The project is mentioned in the State article on page 46.

https://abc-utc.fiu.edu/mc-events/abc-methods-for-delawares-all-precast-bridge-1-438/?mc_id=422

This is a link to the archived FIU ABC Center webinar on Bridge 1-438 on Blackbird Station Road over Blackbird Creek in Townsend, Del., and related information, including the UHPC overlay specifications. The project is mentioned in the State article on page 46.

OTHER INFORMATION

<https://www.fhwa.dot.gov/bridge/pubs/hif18046.pdf>

This is a link to a downloadable version of *Manual for Refined Analysis in Bridge Design and Evaluation* (HIF-18-046) published by the Federal Highway Administration. This manual provides guidance on performing refined analysis of bridges with guidance provided for modeling prestressed and post-tensioned concrete girder bridges. Methods and examples are included.

<http://www.dot.state.mn.us/research/reports/2019/201930.pdf>

This is a link to a downloadable version of *Debonded Strands in Prestressed Concrete Bridge Girders* (MN/RC 2019-30), the final report of a study sponsored by the Minnesota Department of Transportation. The study gathered existing research on debonding and concerns and practices from selected state departments of transportation. The study includes design recommendations and potential material specifications to protect debonded strands.

<http://elearning.pci.org>

This is a link to the PCI eLearning Center website, which contains online courses on precast/prestressed concrete elements and materials for the transportation and building industries. These courses are free and satisfy continuing education requirements of engineers in all 50 states.