

NOTABLE CONCRETE in Pittsburgh and Vicinity

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Comments, suggestions, or additional submissions?

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PORTICO RESTORATION, MARGARET MORRISON CARNEGIE HALL, CARNEGIE MELLON UNIVERSITY, MARGARET MORRISON AND TECH STREETS, PITTSBURGH, PA

Submitted by: Castcon-Stone, Inc., Saxonburg, PA, and Larry Rowland, Manager, Marketing & Technical Services, Lehigh Cement, White Cement Division, Allentown, PA, 610-366-4600, lrowland@lehighcement.com



Margaret Morrison Carnegie College opened in 1906 as a vocational school for women. Now called Margaret Morrison Carnegie Hall, it hosts facilities for Carnegie Mellon University's School of Architecture and Design. Cast stone was used for the restoration of the striking and welcoming portico.

ALLEGHENY RIVER BRIDGE, PENNSYLVANIA TURNPIKE AT CHESWICK, PA (NEAR EXIT 48)

Submitted by: Charles Parish, Project Manager, Walsh Construction Company, Canonsburg, PA 15317, 724-745-6039, cparish@walshgroup.com



The Allegheny River Bridge is 2350 ft long, carrying the Pennsylvania Turnpike over the Allegheny River near Cheswick. This bridge is a segmental concrete structure built using the cast-in-place, balanced cantilever method—the first in Pennsylvania. Construction used over 47,000 yd³ of concrete, 8,250,000 lb of reinforcing steel and 3,000,000 lb of post-tensioning strand. Contractor: Walsh Construction Company. Owner: Pennsylvania Turnpike Commission. Design Engineer: Figg Engineering. Consulting Engineer: McTish, Kunkel & Associates.

OAKMONT RETAINING WALLS, PENNSYLVANIA TURNPIKE MP 48.5 EASTBOUND, OAKMONT, PA

Submitted by: Charles Parish, Project Manager, Walsh Construction Company, Canonsburg, PA 15317, 724-745-6039, cparish@walshgroup.com



The Oakmont retaining walls were constructed to allow the widening and upgrade of the Pennsylvania Turnpike through Oakmont. The walls comprise shotcrete, both for structure and aesthetic. The top layer was carved while wet to simulate the natural rock formations and strata. After curing, stains were applied to enhance the carved surface and mimic local colors. Contractor: Walsh Construction Company. Shotcrete Contractor: Cemrock Landscapes, Inc. Staining: Bella Vernici Decorative Concrete. Owner: Pennsylvania Turnpike Commission. Design Engineer: Geo-Mechanics, Inc. Consulting Engineer: McTish, Kunkel & Associates.

MON-FAYETTE EXPRESSWAY, SECTION 51H ACROSS THE MONONGAHELA RIVER, BROWNSVILLE, PA

Submitted by: Charles Zugell, Project Manager, Walsh Construction Company, Canonsburg, PA, 724-745-6039, czugell@walshgroup.com and Brice Urquhart, Regional Director, Figg Bridge Engineers, Inc., Exton, PA, 610-594-2460, burquhart@figgbridge.com



Long, arching spans and tall, slender piers create an elegant concrete structure across the Monongahela River. The 3200 ft bridge consists of seven spans. The 518 ft main span, built using balanced cantilever segmental construction, crosses the river, two active rail lines, and local roads. Cast-in-place construction is used for the 89 ft wide, dual-cell box girders and for the unique C-shaped piers that rise over 200 ft above the mountainous terrain. The bridge includes over 7,000,000 lb of reinforcing steel, 3324 linear ft of drilled shafts, 51,000 yd³ of concrete, and 3,000,000 lb of post-tensioning strand. The concrete structure was bid as an alternate design, saving the Pennsylvania Turnpike Commission more \$8 million over the steel bridge design.

I-476 BRIDGES OVER THE LEHIGH RIVER AND POHOPOCO CREEK, LEHIGHTON, PA

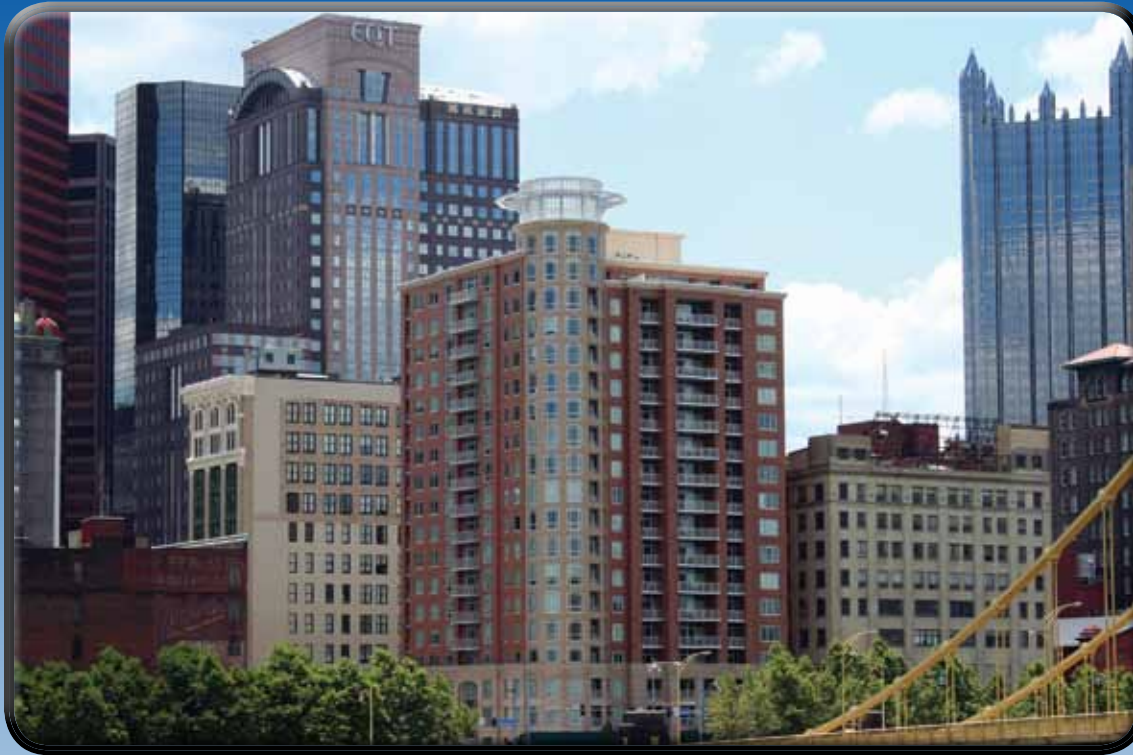
Submitted by: Brian Neckermann, Project Manager, Walsh Construction Company, Canonsburg, PA 15317, 724-745-6039, bneckermann@walshgroup.com



The existing 53-year-old steel girder bridges are being replaced on I-476 for The Pennsylvania Turnpike Commission. Each of the 31 new piers consists of a drilled shaft and column with a hammerhead cap. Because all of the shafts are drilled in the river or creek, concrete is placed by tremie. The shafts vary in diameter from 7 ft to 11-1/2 ft and are up to 60 ft deep. The piers carry 8 ft tall prestressed concrete bulb-tee beams manufactured by Northeast Prestressed Products using self-consolidating concrete. The 175 beams are up to 165 ft long and weigh up to 234,000 lb. The new bridge deck will be high-performance concrete supplied by Rock Hill Materials.

THE ENCORE ON 7TH, 100 SEVENTH STREET, PITTSBURGH, PA

Submitted by: Jill L. Barker, Marketing Administrator, Mascaro Construction Company, LLC, Pittsburgh, PA, 412-321-4901, jbarker@mascaroconstruction.com;
Contact: Michael Ellis, Director of Business Development, melis@mascaroconstruction.com



The Encore on 7th Street was one of the first buildings in Pittsburgh constructed in the past 20 years that used a post-tensioned, cast-in-place concrete frame. Its 18 stories rise 190 ft above the street, creating 208,000 ft² of interior space. The ground floor provides 5270 ft² for retail use. The floors above hold 151 apartment units. The concrete structure minimized the depth of the floor assembly, “freeing” 14 to 18 in. per story, creating spacious rooms with generous 9 ft, 4 in. ceilings. The Encore won the 2009 GreenSite Award in the Multifamily Residential Category.

ST. MALACHY CATHOLIC CHURCH, 343 FOREST GROVE ROAD, CORAOPOLIS, PA

Submitted by: Joseph J. Balobek, Jr., RA, Owner, Joseph J. Balobek and Associates, Pittsburgh, PA, 412-928-0210, jjbdabarchdev@msn.com; Architect: Joseph J. Balobek and Associates; Contractor: Mellon-Stuart Company



St. Malachy Church, a poured in place reinforced concrete structure dedicated in 1972, was one of the first Catholic churches in the U.S. to be designed as a shrine to Jesus Christ. The converging folded-plate roof permits full glass walls behind the altar, beyond which a 10 ft statue of the crucifixion cantilevers from an exterior concrete platform exposed to the elements. By creating this expanse of glass, the concrete roof structure permits indirect natural light to radiate out from above the altar, illuminating the entire sanctuary. The glass walls are etched with more than 50 full-size images of the saints. When an exterior electrical transformer was hit by lightning, causing an explosion of flames from the main service panel in the mechanical room, the church was saved by its reinforced concrete construction. Many parishioners consider their church the eighth wonder of the world.

