



Notable Concrete in

Greater Detroit

Recent high-profile construction projects in the vicinity

C.S. Mott Children's Hospital

1540 E. Hospital Drive, Ann Arbor, MI 48109



This large, complex project included a new 348-bed hospital in 775,000 ft² (72,000 m²) and 11 levels and 225,000 ft² (20,900 m²) of outpatient and office space in 10 levels. A freeze-resistant mixture was used to place concrete in extremely inclement weather, including temperatures as low as 15°F (-9°C).

Project credits: HKS, Architect; Barton Malow, Construction Manager; Spence Brothers and Walbridge Concrete Constructors, Concrete Contractors; and Doan Companies, Concrete Producer.

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The Eli and Edythe Broad Art Museum

Michigan State University, 556 East Circle Drive, East Lansing, MI 48824



Designed by Pritzker Prize-winning architect Zaha Hadid, more than 70% of the 46,000 ft² (4270 m²) facility is dedicated to exhibition space. Self-consolidating concrete was a critical part of the structure.

Project credits: Integrated Design Solutions, Associate Architect; SDI Associates, Engineer of Record; Barton Malow, Construction Manager; Granger Corporation, Concrete Contractor; and Consumer's Concrete, Concrete Producer.

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Library Lane Parking Structure

345 S. 5th Avenue, Ann Arbor, MI 48104



Designed for a 100-year service life, this project used more than 50,000 yd³ (38,230 m³) of high-performance, low-shrinkage, post-tensioned concrete. One of the most significant placements required 5600 yd³ (4280 m³) placed over 36 hours. (See *Concrete International*, October 2012, for a full description.)

Project credits: Luckenbach/Ziegelman Architects, Architect; Carl Walker, Engineer of Record; The Christman Company, Construction Manager; Christman Constructors, Concrete Contractor; and Doan Companies, Concrete Producer.

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Multipurpose Indoor Facility

Wayne State University, 5210 Gullen Mall, Detroit, MI 48202



To minimize the number of joints in the concrete slab for four tennis courts in a 30,000 ft² (2800 m²) field house, the concrete included a shrinkage-reducing and -compensating admixture and the slab was reinforced with polypropylene-polyethylene macrofibers in addition to welded wire reinforcement. Twenty-eight-day shrinkage values were 0.0160%, and only one saw-cut joint was placed down the length of the tennis court nets. The inspector found no random cracks in the entire slab during the playing surface pre-installation inspection.

Project credits: NTH Consultants, Engineer; Turner Construction and Amalio, Contractors; and Superior Materials, Concrete Producer.

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Ross School of Business

University of Michigan, 701 Tappan Street, Ann Arbor, MI 48109



This included a comprehensive renovation of the Kresge Business Administration Library, demolition of the Computer and Executive Education Building, construction of a new academic building, and the addition of exterior building finishes to Sam Wyly Hall, the Business Administration Executive Dormitory, and the Hill Street Parking Structure to create a unified look for the entire complex. The project's 2100 yd³ (1600 m³) of cast-in-place concrete included synthetic macrofibers.

Project credits: Kohn Pedersen Fox Associates, Architect; Thornton Tomasetti, Structural Engineer; Walbridge Aldinger, General Contractor; Spence Brothers, Concrete Contractor; and Doan Companies, Concrete Producer.

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Vehicle Alignment Pit, FCA Windsor Assembly Plant

2199 Chrysler Center, Windsor, ON N8W 3Y3, Canada



During production shutdowns beginning with Christmas 2014 and continuing through the 14-week new model launch from mid-February to the end of May 2015, a major project at the Fiat Chrysler Automobiles Group assembly plant was the pit construction; underground utility rerouting; and column extensions for new caster, camber, and toe-in alignment stations. Originally built for the 1982 minivan models, the alignment stations needed to be expanded from three to five within four 20 x 40 ft (6 x 12 m) bays. The ambitious schedule involved around-the-clock execution, with demolition in February, construction in March, and equipment installation in April.

To fast track concrete operations, high-early-strength concrete was used, allowing the work to proceed per cylinder test results at critical stages. Base slabs and walls were reinforced with polypropylene-polyethylene synthetic macrofibers in addition to steel reinforcing bars. Because of high wheel loads, floor slabs were reinforced with steel fibers.

Project credits: FCA USA Corporate Building Group and FCA Canada WAP Facilities, Owner; SNP Technical Services, Inc., Architect-Engineer; Alberici Global Automotive, Construction Manager; and Elmara Construction, General Contractor.

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