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Hanley Wood's Commercial Construction Group is pleased to present the winners of the 2015 Triad Award, sponsored by Concrete Construction, The Concrete Producer, and Public Works magazines. This annual award honors outstanding publicly owned concrete projects that demonstrate innovation, sustainability, and leadership.

In 2015, the Triad Award program highlights projects employing portland limestone cement (PLC) as a key element of success, especially in infrastructure construction. PLC is a proven material recognized by engineers as an ingredient that creates structures with long service life and reduced carbon footprints.

Projects were submitted from across the United States, highlighting a wide range of PLC applications: interstates, a main street revitalization, a county judicial building, a bridge, pervious pavement, and a football stadium. All projects were completed between 2013 and 2015.

The Triad Award jury selected one overall winner and identified three additional projects for special recognition, based on project team coordination, innovative use of materials, and sustainability.

For more project details, photos, and Triad Award activities at World of Concrete 2015, visit www.triadaward.com.

2015 TRIAD AWARD WINNER

Peña Boulevard PLC Paving Project • Denver, Colorado

RUNNERS-UP

Davis Wade Stadium (Mississippi State University) • Starkville, Mississippi

Illinois Tollway I-90 • Northeast Illinois

Union Pacific Overpass at State Route 193 • Davis County, Utah

ENTRIES

Clark Park Boat House • Chicago, Illinois

Colorado DOT Paving Projects • Denver, Brush, and Greeley, Colorado

Dennis Maes Pueblo Judicial Building • Pueblo, Colorado

I-70 Blanchette Bridge • Missouri River, between St. Louis and St. Charles Counties

Lehi Main Street Beautification • Lehi, Utah

2015 TRIAD AWARD JURY

Mary Anderson is Director of Public Services for the Village of Niles, Illinois. Anderson has also served as Public Works Director for the communities of Highland Park and Champaign, Illinois and Port Orange, Florida. She has been a member of several American Public Works Association committees, and is former chair of the APWA sustainability committee.

William Palmer, Jr. P.E., FACI is Editorial Director of Hanley Wood's Commercial Construction Group and Editor in Chief of Concrete Construction magazine. Palmer is a professional engineer, writer, editor, and program developer with more than 25 years of experience in the construction industry, specializing in concrete, masonry, building design, and public works. He has served as director for American Concrete Institute's educational programs, executive vice president of the American Society of Concrete Contractors, and executive director of The Masonry Society.

Luke Snell. P.E. is currently a Construction & Materials Consultant and is an Emeritus Professor at Southern Illinois University Edwardsville. Snell is a well-known concrete historian, past chair of ACI's International Committee, and has recently worked with ACI chapters in Asia and Africa to introduce new equipment and technology to their engineers and contractors.

Rick Yelton is Editor at Large for World of Concrete, an Informa Exhibitions U.S. Construction and Real Estate event. He has been a contributing editor to Concrete Construction, Concrete Surfaces, Masonry Construction, and The Concrete Producer magazines with an engineering background in the aggregates and concrete products industries. Yelton is an active member of several ASTM committees and the American Concrete Institute. He also represents World of Concrete on the Strategic Development Council and on the National Steering Committee of the Concrete Industry Management program.


Denver International Airport

Peña Boulevard PLC Paving Project
Denver, Colorado

Replacing the main roadway to the busy Denver International Airport required close coordination between project principles and a high level of technical expertise. Castle Rock Construction replaced the existing concrete pavement, which had severe alkali-silica reactivity damage, with 11-inch dowelled concrete. The airport's heavy use of magnesium chloride deicer required effective drainage features, to minimize chemical concentration in specific areas. Roadway improvements included adding a trench drain along the entire roadway, and a 12-foot shoulder with curb and rail for safety.

The existing concrete roadway was crushed in place for road base and topped with a portland-limestone cement concrete designed for consistency, and ultimately providing a smoother ride for drivers.

JURY COMMENTS: The project team solved many technical problems, considering the scope of the job. They successfully addressed the unique issues involved in completing a project near an airport.

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PROJECT PARTNERS

Owner: City and County of Denver

Contractor & concrete suppliers: Castle Rock Concrete Construction Co. of Colorado (Centennial, Colo.), Plum Creek Structures (Littleton, Colo.)

QC testing: Cesare, Inc. (Centennial, Colo.)

Materials suppliers: Aggregate Industries (Bedford, Mass.), Euclid Chemical (Cleveland, Ohio), Headwaters Inc. (South Jordan, Utah), Holcim (US) Inc. (Bedford, Mass.)

A Davis Wade Stadium Expansion and Renovation Starkville, Mississippi

Between fall 2012 and summer 2014, the Davis Wade Stadium at Mississippi State University was expanded to add more than 6,000 new seats and a new concession concourse — making it the largest football stadium in Mississippi. The challenge was to use sustainable concrete mixes in a wide range of applications (pilings, structural beams and columns, elevated slabs, slab-on-grade) without sacrificing performance and constructability.

MMC Materials and the university's Construction and Materials Research Center collaborated on testing and evaluating various concrete mixes throughout construction. The project offered an ideal opportunity for field evaluation of portland-limestone cement (PLC) with supplementary cementitious materials in concrete, as well as comparing the performance of traditional and PLC concretes.

JURY COMMENTS: The university, contractor, and producer worked together in an interesting way, resulting in a unique material selection process.

PROJECT PARTNERS

Owner: Mississippi State University

Structural and architectural design: LPK Architects (Meridian, Miss.), Three-Sixty Architecture (Kansas City, Mo.), and Walter P. Moore (Houston)

Contractor: Harrell Contracting Group, LLC (Ridgeland, Miss., now part of Roy Anderson Corp. Contractors)

Concrete producer: MMC Materials, Inc. (Ridgeland, Miss.)

Cement & SCM suppliers: Headwaters Resources, Inc. (South Jordan, Utah), Holcim (US) Inc. (Bedford, Mass.)

B Illinois Tollway I-90 Westbound Mainline Paving Upgrades Northeast Illinois

As part of a 15-year, $12 billion capital program, the Illinois Tollway commissioned 60 miles of three-lane highway upgrades on the Jane Addams Memorial Tollway (I-90) between Rockford and Elgin, Illinois. Four contractors widened and replaced the corridor with two-lift concrete construction: "black-rock" recycled asphalt mix covered by a typical paving mix without recycled aggregate.

The project required approximately 325,000 cubic yards of concrete, including a significant portion containing Type IL portland-limestone cement — the first time this new AASHTO M 240 (ASTM C595) material had been used on a major project in Illinois.

JURY COMMENTS: The involvement of multiple contractors required a high level of coordination. The owner took the initiative to find an environmental solution, and the concrete producer made the extra effort to produce an unconventional mix.

PROJECT PARTNERS

Owner: The Illinois State Toll Highway Authority

Contractors: K-Five Construction (Lemont, Ill.), FH Paschen/SN Nielsen (Chicago), Plote Construction (Hoffman Estates, Ill.), R.W. Dunteman (Addison, Ill.)

Concrete producer: Ozinga Ready Mix Concrete (Mokena, Ill.)

Materials suppliers: Holcim (US) Inc. (Bedford, Mass.)

C Union Pacific Overpass at State Route 193 Davis County, Utah

SR 193 is a major corridor in Northern Utah connecting Hill Air Force Base and Freeport Center, a major industrial park located on the Union Pacific Rail Road line. The Utah Department of Transportation (UDOT) decided to construct an overpass at a railroad crossing that had caused significant safety concerns and traffic delays.

UDOT chose Mesa Block retaining wall block to construct ramps tall enough to clear rail traffic without impacting adjacent businesses, and compensate for potential soil settlement. In four months, the project team constructed three, 32-foot ramps with two styles of block for aesthetic design. Masonry units produced with portland-limestone cement reduced the project's environmental impact.

JURY COMMENTS: The project team provided an aesthetically pleasing, well-engineered solution that clearly had a significant impact on the community. The timeline was impressive, especially with the amount of engineering and testing required.

PROJECT PARTNERS

Owner: Utah Department of Transportation

Architect: IGES (Salt Lake City)

Retaining Wall System Designer: Tensar International Corp. (Alpharetta, Ga.)

Contractor: Granite Construction (Watsonville, Calif.)

Concrete block producer: Beuhner Block Co. (Salt Lake City)

Materials suppliers: Holcim (US) Inc. (Bedford, Mass.), Kilgore Companies (West Valley City, Utah)


A
Tim Cost/Holcim (US) Inc.
MISSISSIPPI STATE


B
Courtesy of Ross Bentsen, Illinois Tollway


C
Todd Laker/Holcim (US) Inc.
CLIPPER

A Clark Park Boat House Chicago, Illinois

The Chicago Park District's Clark Park Boat House is a rowing training, boat storage, and rental facility. A large staircase with 20,000 square feet of pervious concrete pavement using portland-limestone cement concrete filters and conveys surface water into subsurface gravel where it is retained to percolate into the soil below or flow to the river.

As storm water percolates and recharges the groundwater, it undergoes a process of filtration and microbial conversion of hydrocarbons, thus reducing the environmental impact of the pavement that is used by rowers to transport their boats between the river, street, and boat storage building. Constructing a large staircase with pervious concrete was challenging due to the incompatibility of conventional stair forming and the required pervious concrete compaction equipment. Brick and grass pavers were utilized to enhance the pavement's beauty.

JURY COMMENTS: The strength gain generally required for pervious concrete might normally preclude the use of portland-limestone cement, but the concrete producer's willingness to try something different was successful.

PROJECT PARTNERS
Owner: Chicago Park District
Architect: Studio Gang Architects
Civil Engineers: Spaceco Inc.
Civil Engineers: AECOM
Contractor: Schaefges Brothers Inc.
Concrete Supplier: Ozinga Chicago RMC.Inc.

B Colorado DOT Paving Projects Denver, Brush, and Greeley, Colorado

Colorado Department of Transportation (CDOT), Castle Rock Construction and Holcim (US) Inc. have taken the initiative to be leaders in innovation and sustainable pavement construction, while lowering the environmental impact associated with concrete construction, through the use of portland-limestone cements.

In 2007 Holcim (US) Inc. and Castle Rock Construction (CRCC) were part of a collaborative partnership to provide CDOT with a sustainable concrete pavement solution to help with the governor's initiative to lower the environmental impact of construction. The industry task force created the "Green Concrete" specification that allowed portland-limestone cement in concrete paving. CDOT approved the use of portland-limestone cements in 2008 and today there are over 500 lane miles of concrete paving in the state.

JURY COMMENTS: A lot of concrete paving has been done in Colorado, and the efforts of these project partners to promote innovation and sustainability are noteworthy.

PROJECT PARTNERS
Projects: I-225 (Denver), I-76 (Brush), US HW 85 (Greeley), and SH 34 (Greeley)
Owner: Colorado Department of Transportation
Contractor: Castle Rock Concrete Construction Company of Colorado LLC (CRCC)
Concrete Supplier: Castle Rock Concrete Construction Company of Colorado LLC
Cement Supplier: Holcim (US) Inc.

C Dennis Maes Pueblo Judicial Building Pueblo, Colorado

The Dennis Maes Pueblo Judicial Building is Colorado's newest courthouse, and one of Pueblo's significant civic structures. The five-story, 170,000 square-foot courthouse houses 17 courtrooms, chambers for judges and magistrates, jury assembly and deliberation rooms, offices, training rooms, and holding cells. The LEED-registered facility was designed with an emphasis on sustainability.

Concrete is an integral part of the building, which includes nine elevator shafts and lightweight concrete floors on each level. The materials suppliers worked together to provide innovative and sustainable concrete mixes containing portland-limestone cement and Class F fly ash. There are more than 2000 cubic yards of portland-limestone concrete in the piers, foundation, above grade structural (including self-consolidating concrete), lightweight structural floors, and exterior concrete (curb and gutter, flatwork).

JURY COMMENTS: The concrete producer and cement provider collaborated effectively to produce mix designs to meet challenging weather conditions as well as sustainability goals. It is an aesthetically impressive showcase of alternative materials.

PROJECT PARTNERS
Owner: Pueblo County, Colorado
Contractor: HW Houston Construction Company
Ready Mix Concrete Supplier: Transit Mix Concrete Company
Cement Supplier: Holcim (US) Inc.
Architectural Precast Concrete Panels: Rocky Mountain Prestress
Underground Utility Concrete: Boughton Precast

D I-70 Blanchette Bridge Missouri River, between St. Louis and St. Charles Counties

The original westbound I-70 Blanchette Bridge spanning the Missouri River between St. Louis and St. Charles counties was built in the late 1950s using 20 beam spans and three main steel-truss river spans. Replacing the 4,000-foot-long bridge entailed removing and reconstructing all driving surfaces and barrier walls, existing center steel trusses, and the structural steel in the first nine spans on the west side.

The project also included converting three of the east spans to roadway on embankment, repairing or replacement of existing concrete substructure units, and painting all structural steel. Since the original structure was built with a lightweight concrete deck, and most of the original substructure was to remain in place, the new bridge deck and barriers required lightweight concrete. Concrete work began in the spring of 2012 and the bridge reopened in late 2013.

JURY COMMENTS: The project team met tight technical limits using lightweight concrete; their use of a 1,000-foot conveyor to place concrete for the bridge deck was impressive.

PROJECT PARTNERS
Owner: Missouri Department of Transportation
Structural design: Jacobs Engineering Group
Contractor: Walsh Construction Company
Concrete supplier: Western Ready Mix Inc. (part of Metro Materials, Inc.)
Cement Supplier: Holcim (US) Inc.

E Lehi Main Street Beautification Lehi, Utah

For decades Lehi, Utah's Main Street has been a major corridor connecting Interstate 15 with rural communities. As the surrounding population has dramatically grown, new high occupancy corridors have lowered traffic on Main Street but business along the historic route has declined. In order to help maintain this important business district and to preserve the rural feel of historic downtown, the city initiated a beautification project of its Main Street.

New sidewalks and roadway medians constructed with concrete pavers create a pedestrian-friendly atmosphere. Concrete masonry units were used to build planter sitting walls and caps separating walkways and new curbside parking. Lehi Main Street is an impressive example of how renovating with sustainable and durable concrete pavers and masonry units can revitalize an existing space.

JURY COMMENTS: In this successful partnership, concrete building materials were carefully selected to create a sense of community.

PROJECT PARTNERS
Owner: Lehi City, Utah
Contractor: JC Landscaping
Concrete Masonry Unit Supplier: Lehi Block Company
Cement Supplier: Holcim (US) Inc.

Robert Weber Photography

Courtesy of Castle Rock Concrete Construction Co.

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