Notable Concrete in Salt Lake City

Examples of concrete construction in the vicinity of the ACI convention

As ACI prepares to meet for The Concrete Convention and Exposition, March 25-29, 2018, at the Grand America and Little America Hotel, in Salt Lake City, UT, here are several nearby projects of interest.

Thanks to Michael Paul of ACI Committee 124, Concrete Aesthetics, and Tammy Meldrum, Executive Director, Intermountain Chapter – ACI, for compiling this information.
111 S. Main Street
Salt Lake City, UT 84111

This 24-story, Class-A office building has a hat truss design that eliminates perimeter columns and allows the structure to overhang an adjacent building by 43 ft (11 m) while appearing to float above the lobby. Two concrete features make this possible. The foundation placement included a thermal control plan that circulated 19 million gal. (72 million L) of chilled water through the concrete while it cured to ensure long-term strength. The concrete core in the center of the building has 31 in. (787 mm) thick walls that rise over 450 ft (137 m) and support the 1900 ton (1700 tonne) hat truss system that carries almost half of the building’s total load.

Project credits: City Creek Reserve, Developer and Owner; Skidmore, Owings & Merrill, Architect; Great Basin Engineering, Civil Engineer; and Jack B. Parson Ready Mix Concrete, Concrete Supplier.

Submitted by Jared Munk, Marketing Manager, Okland Construction, Salt Lake City, UT, +1.801.486.0144, Jared.Munk@okland.com.
Seeking a building for its own architectural and engineering practice that would be resilient, sustainable, have minimal maintenance, and provide a “wow” factor for clients and employees, the designer chose exposed architectural concrete, inside and out. Both natural and “black” concrete is used. The exposed concrete walls provide the architectural finish, passive solar benefits, as well as all the structural needs for gravity and lateral loads. The back of the building is skewed and cantilevered over the lower portion to maximize views and exposure. The building’s orientation maximizes environmental benefits. The building is an example of sustainable design with low profile solar panels located on the roof.

Project credits: AE URBIA, Architect and Structural Engineer.

This three-story structure demonstrates that a modern office building can be constructed using tilt-up concrete with an abundance of windows providing views and natural light. The sculptural forms of the exposed concrete structure continue through the interior. By integrating architecture and structural engineering, the exterior concrete walls are minimized, thus reducing unwanted seismic mass, while interior walls act as shear walls, bearing walls, and architectural features. The tallest concrete panel is 56.33 ft (17.17 m) and is located at the end of the central atrium, which provides natural light to the core.

Project credits: AE URBIA, Architect and Structural Engineer.

Alta Gateway Station Parking
505 W. 100 S., Salt Lake City, UT 84101

This five-level parking garage sits at the core of the Alta Gateway Station Apartments, which wrap around the garage, hiding it, and allowing residents to park on the same level as their residence. The garage uses precast, prestressed double tees. Their long spans resulted in needing only two precast columns inside the entire garage, maximizing the number of parking spaces. Precast shear walls, each five levels tall, are spaced strategically to allow visibility and light between floors.

Project credits: Rimrock Construction, General Contractor; and Forterra Structural Precast, Precast Supplier. Submitted by Sarah Sutherland, Business Developer, Forterra Structural Precast, Salt Lake City, UT, +1.720.245.4599, sarah.sutherland@forterrabp.com.
Artesian Springs Tower
4205 S. Main St., Murray, UT 84107

Murray Laundry was originally a large, industrial laundry facility that operated for approximately 50 years and was abandoned in 1977. It was part of the once thriving Fireclay area in Murray. After years of exposure to the elements, the cast-in-place concrete tower was refurbished by Parley’s Partners as part of an extreme makeover of the 200 acre (81 ha) site that included the construction of a 244-unit luxury residential community. To create replica glass fiber-reinforced concrete (GFRC) for the top of the tower, the existing art deco panels were carefully removed and transported to the GFRC shop in Salt Lake City. The crumbling panels were patched and repaired to restore the essence of their original design. Then rubber molds were taken off the old panels to create new GFRC panels that were installed later in the project.

Project credits: Think Architecture, Architect; Kier Construction, General Contractor; and Unlimited Designs, GFRC Fabricator.

Lana Mousley, Business Development, Unlimited Design, North Salt Lake, UT, +1.801.355.3221, lana@unlimitedesign.com.
Bangerter is one of Utah's busiest corridors, and the grade-separated interchange project at 600 West improved traffic safety and alleviated congestion. The functional and cost-effective final design used partial-depth precast deck panels (11,000 ft² [1120 m²]), mechanically stabilized earth walls (7000 ft² [650 m²]), and prestressed concrete girders (UTB-82, 16 each at 170 ft [52 m]). Solutions to project challenges included working around an existing sewer line by shifting the bridge alignment, avoiding settlement issues by taking 600 West underneath Bangerter, and dealing with a water table only 2 ft (0.6 m) below the road base by using larger subgrade rock and raising the height of Bangerter. The project also used 87,000 yd³ (73,000 m³) of lean concrete base course, 83,000 yd³ (70,000 m³) of concrete pavement, and 1478 yd³ (1130 m³) of concrete bridge deck.

Project credits: UDOT, Owner; Wadsworth Brothers Construction with Wilson & Company, Design-Build Team; Horrocks Engineers, Program Manager; Gerhart Cole, Geotechnical Engineer; and McNeil Brothers, Concrete Paving Contractor.

Submitted by Layne Fullmer, Project Manager, Wadsworth Brothers Construction, Draper, UT, +1.801.509.1076, layne@wadsbro.com.
The Central Davis Gymnasium is constructed of cast-on-site, integrally colored, tilt-up concrete panels. Going beyond the architectural monotony of typical rectangular tilt-up panels, these panels were meticulously designed and constructed into the shape of giant basketballs that appear to be bouncing along the front façade. The heaviest panel weighs more than 39 tons (35 tonnes), while the tallest panel stands more than 39 ft (12 m) high. The basketball-shaped panels were cast simultaneously and adjacent to each other to provide consistent color and texture and to ensure proper fit of panels once erected.

Project credits: Naylor Wentworth Lund Architects, Architect; and Hughes General Contractors, General Contractor.

Submitted by Amber Ridings, Marketing Communications Specialist, Hughes General Contractors, Inc., North Salt Lake, UT, +1.801.292.1411, amber@hughesgc.com.
Church of Jesus Christ of Latter-Day Saints History Museum  
45 N. West Temple, Salt Lake City, UT 84150

Talk about a building that broke the mold. The beautiful Church History Museum has nine custom murals at the entrance. The mold for each mural broke as the precast concrete was removed, as was expected with the bespoke, highly detailed molds. Precast concrete clads the museum, built in 1984. All aggregate was sourced from Little Cottonwood Canyon to match the Salt Lake City Temple nearby.

Project credits: Forterra Structural Precast, Precast Supplier.

Submitted by Sarah Sutherland, Business Developer, Forterra Structural Precast, Salt Lake City, UT, +1.720.245.4599, sarah.sutherland@forterrabp.com.
City Creek Building
50 S. Main St., Salt Lake City, UT 84101

City Creek Center is a mixed-use development near Temple Square with an upscale, open-air shopping center; office and residential buildings; fountain; and simulated creek. Precast and glass fiber-reinforced concrete (GFRC) for the exterior façade of this six-story, 35,000 ft² (3250 m²) building include spandrel panels at the base of each window, window surrounds, cornices, and caps, and a top band of GFRC corbels and cornices.

Project credits: ZGF Architects, Architect; Jacobsen Construction, General Contractor; and Unlimited Designs, Precast and GFRC Fabricator.

Clyde Office Building
730 N. 1500 W., Orem, UT 84057

This is the first three-story tilt-up concrete office building constructed in Utah. Large portions of the wall panels have been omitted, accommodating views, reducing seismic mass, and providing natural light. The tallest panel is 7-1/4 in. (184 mm) thick and 50 ft (15 m) tall, arched with a circular penetration. Some precast panels are offset, allowing continuous glass at each edge for a floating panel appearance. Several walls were constructed of nonconventional shapes. The 26 ft (8 m) tall canopy is supported along the exterior edge, while the interior edge is curved and free-floating. Floors are composite, and both interior and exterior tilt-up walls are designed for gravity and lateral loads. Portions of the interior concrete walls and floors are left exposed.

Project credits: AE URBIA, Architect and Structural Engineer.
Ensign Plaza
2225 Washington Blvd., Ogden, UT 84401

The Ensign Plaza South is a four-story structure with underground parking, two outdoor plazas, a fountain at the main entrance, and a glass exterior with gold- and red-toned stone. The building is part of Ogden redevelopment efforts and is a beautiful addition to the downtown area. The glass fiber-reinforced concrete (GFRC) cornice that decorates the upper parapet gives the building a distinctive appearance.

Project credits: Zion Securities Corporation, Owner; MHTN Architects, Architect; Jacobsen Construction, General Contractor; and Unlimited Designs, GFRC Fabricator.

The Entrata Building is the first four-story, Class A, tilt-up concrete office building. The structure has an abundance of floor-to-ceiling glazing and a glass-to-wall ratio matching the Class A designation. The building shell was erected in 10 days using 60 ft (18 m) tall wall panels. Although the exterior appears to have various finish materials, the shell is mostly exposed concrete with a variety of textures created using multiple formliners and reveals, plus some cast-in thin brick. Reinforcing in the wall panels provides strength for lifting and for resisting wind and seismic forces, plus crack control for watertight concrete.

Project credits: AE URBIA, Architect and Structural Engineer.

The Gateway is a popular upscale shopping mall. The retail design featured many precast features, such as wainscots, window sills, and window surrounds and trim, plus a glass fiber-reinforced concrete (GFRC) cornice to match the precast. Precast construction also included a large amount of Rocky Mountain Stone cast stone.

Project credits: Vestar Development Co., Owner; Jerde Partnership, Architect; Layton and Jacobsen Construction, General Contractor; and Unlimited Designs, Precast and GFRC Fabricator.

George S. and Dolores Dore Eccles Theater
131 S. Main St., Salt Lake City, UT 84111

The Eccles Theater is a state-of-the-art, 2500-seat Broadway-style venue in the heart of Salt Lake City on a tight 60,000 ft² (5570 m²) site, which created challenges with placing concrete. There are no columns in the main theater. The balcony loads are carried on the building’s massive concrete shear walls, which reach over 100 ft (30 m) in height. Five different crews worked at the same time to cast the main walls of the theater. The crews used 20 ft (6 m) jumps and placed two to three times per week. Due to the compressed space and the height of the walls, the walls could not be braced as usual, using guy wires or heavy pole braces. Instead, the concrete crew and steel erectors had to work hand in hand. The concrete crew would form and cast particular wall sections, then the iron workers would erect that zone of structural steel outside the wall, tying in when concrete reached specified strength. The process kept repeating, requiring constant close coordination.

Project credits: Pelli Clarke Pelli Architects with HKS Architects, Architect; Thornton Tomasetti and Reaveley Engineers + Associates, Structural Engineers; Layton Construction, General Contractor; and Geneva Rock, Concrete Supplier.

Submitted by Alan D. Rindlisbacher, Director of Corporate Communications, Layton Construction Company, LLC, Sandy, UT, +1.801.563.3722, arindlisbacher@laytonconstruction.com.
Hale Centre Theatre
9900 S. Monroe St., Sandy, UT 84070

Hale Centre Theatre is a one-of-a-kind facility that includes two theatres for a total of 1361 seats. The theater-in-the-round boasts 900 seats while the separate proscenium-thrust theater holds 461 seats. Because of the high water table, 225 piles were driven approximately 95 ft (29 m) below grade. Piles were tied and topped by grade beams. Concrete walls were built on the grade beams, using gang forms with a jump system. Some walls are over 100 ft (30.4 m) tall, which made concrete pumping tricky and required substantial bracing. Approximately 10,000 yd³ (7600 m³) of concrete was used in the theater.

Project credits: Beecher Walker Architects, Architect; Dunn & Associates, Structural Engineer; Layton Construction, General Contractor; and Geneva Rock, Concrete Supplier.

Submitted by Alan D. Rindlisbacher, Director of Corporate Communications, Layton Construction Company, LLC, Sandy, UT, +1.801.563.3722, arindlisbacher@laytonconstruction.com.
Hillcrest Junior High School
178 E. 5300 S., Murray, UT 84107

All main floors other than the classrooms within Hillcrest Junior High School use a patented process called MagicSlab™. This process creates a saw-cut-reduced, crack-resistant, and virtually maintenance-free concrete slab. The school includes 11,000 ft² (1020 m²) of this concrete slab in an approximately 125 x 90 ft (38 x 27 m) section without a single joint or crack. The colored sections of blue, gray, and charcoal form decorative patterns throughout the concrete that ties in with the theme of the building.

Project credits: Naylor Wentworth Lund Architects, Architect; and Hughes General Contractors, General Contractor.

Submitted by Amber Ridings, Marketing Communications Specialist, Hughes General Contractors, Inc., North Salt Lake, UT, +1.801.292.1411, amber@hughesgc.com.
Honnen Equipment is a tilt-up concrete office and warehouse building, designed for the sales and service of heavy earth-moving equipment. The exterior exposed concrete walls use both natural and “black” concrete. Some of the surfaces are also partially sandblasted, creating subtle stripes. Post-tensioning was used on the floor slab to minimize the number of control joints, and colored concrete was used for the polished finish.

Project credits: AE URBIA, Architect and Structural Engineer.

The overpass was the first UDOT bridge to meet the seismic design designation of “operational,” meaning that the bridge must remain functional in the event of an earthquake. The bridge is made up of 92 precast concrete girders. Some girders span 198 ft (60 m) to minimize disruptions to the trains below and the vehicles above. Precast elements also included partial-depth panels for the composite bridge deck.

Project credits: UDOT, Owner; Parsons, Engineer; Kiewit/Clyde, General Contractor; and Forterra Structural Precast, Precast Supplier.

Submitted by Sarah Sutherland, Business Developer, Forterra Structural Precast, Salt Lake City, UT, +1.720.245.4599, sarah.sutherland@forterrabp.com.
The reconstruction of 7 miles (11 km) of I-215, encompassing over 43 lane miles (69 km), replaced aging pavement with high-quality, durable concrete. The project’s seven bridges each received various treatments, such as new superstructure, widening, and hydro-demolition. Concrete used on the decks was reinforced with both macro and micro fibers. The bridge at SR-201 used a lightweight fiber-reinforced concrete deck.

Project credits: Ralph L. Wadsworth Construction and Staker Parson Companies, Joint Venture General Contractor; A-Core Concrete Cutting and Comers Concrete, Concrete Contractors; Jack B. Parsons Ready Mix, Concrete Supplier; and RLW Concrete, Batch Plant Supplier.

Submitted by Betty Purdie, Ralph L. Wadsworth Construction, Draper, UT, +1.801.553.1661, bpurdie@wadsco.com.
This 3-year project included replacing 43.4 lane miles (69.8 km) of aging pavement with new, long-lasting concrete, adding auxiliary lanes between interchanges, improving on and off ramps, and rehabilitating seven bridges. The project used 150,000 yd³ (114,680 m³) of concrete for paving and 4600 yd³ (3517 m³) in structures. This was Utah Department of Transportation’s (UDOT) top 2016 project with an extensive scope combining four separate initial projects into one cohesive design and construction effort.

Project credits: UDOT, Owner; and Wadsworth Brothers Construction and Staker Parson Companies, Joint Venture General Contractor.

Submitted by Jon Ogden, Resident Engineer, UDOT Region Two, Salt Lake City, UT, +1.801.910.2580, jogden@utah.gov.
Jordan River Pedestrian Bridge and Trail
Jordan River between 200 South and North Temple,
Salt Lake City, UT 84116

The final connector that completes the Jordan River Parkway Trail picks up the north end of the existing trail just south of the Utah State Fair Grounds and extends south, paralleling the Jordan River, past an electrical substation, crossing over two railroad corridors, through an industrial property, and skirting the historical Fisher mansion. The trail becomes a 16 ft (5 m) wide, elevated concrete ramp for one quarter mile (0.4 km), including a 280 ft (85 m) steel arch bridge over the railroads. The connector ends with 120 ft (37 m) of concrete sidewalk as it meets 200 South. The ramp used 1600 yd³ (1220 m³) of concrete; 350 yd³ (268 m³) of concrete were used in the ramp columns and caps and the bridge abutments, and 682 yd³ (521 m³) of concrete were used in the ramp and abutment foundations.

Project credits: Salt Lake City Corporation, Owner; Gerber Construction, General Contractor; Stanley Consultants, Engineer; and American Eagle Ready Mix, Concrete Supplier.

Kent’s Market
2600 N. 3600 W., Plain City, UT 84404

Kent’s Market used the patented concrete system MagicSlab™, which eliminates joints and reduces cracks and visible saw-cuts. The market floor used a single placement of 34,000 ft² (3160 m²) of this concrete slab and eliminated more than 9000 ft (2740 m) of saw-cut joints.

Project credits: Design Sequence, Architect; and Hughes General Contractors, General Contractor.
Submitted by Amber Ridings, Marketing Communications Specialist, Hughes General Contractors, Inc., North Salt Lake, UT, +1.801.292.1411, amber@hughesgc.com.
**Krishna Temple**  
8628 S. State Rd., Spanish Fork, UT 84660

The Sri Sri Radha Krishna Temple was built to meet the needs of the Hindu community in Utah County. The temple hosts seasonal festivals, weddings, receptions, and weekly services for prayer and meditation. A color festival is held annually to celebrate the arrival of spring and the passing of winter, raising funds for the construction. The temple is adorned with ornate glass fiber-reinforced concrete (GFRC) assemblies including the balustrade, canopies, turrets, and domes.

Project credits: Sri Sri Radha Krishna Temple, Architect and General Contractor; and Unlimited Designs, GFRC Fabricator.

Living Planet Aquarium
12033 Lone Peak Pkwy., Draper, UT 84020

The Shark Tank is 81 ft (25 m) long, 40 ft (12 m) wide, and 14 ft (4 m) deep. It has a 40 ft long acrylic tunnel and three 20 ft (6 m) wide by 9 ft (2.7 m) tall observation windows. Two of the observation windows are separated by a 4 ft (1.2 m) wide by 2 ft (0.6 m) thick reinforced concrete jamb which resists 146,765 lb (653 kN) of shear and 684,900 lb-ft (930 kN·m) of bending. The window jambs cantilever from the foundation and are unbraced. The mat foundation is 2 ft thick. Walls are 18 to 24 in. (457 to 609 mm) thick. The tank is reinforced for water-tightness in addition to strength, resisting water pressure as high as 870 lb/ft² (42 kPa) and 200,000 lb (890 kN) column loads.

Project credits: AE URBIA, Structural Engineer.
Midvale Middle School
7852 S. Pioneer St., Midvale, UT 84047

The Midvale Middle School project is a creative, yet functional showpiece. Some of the concrete elements featured in this building are the joint-free MagicSlab™ concrete plaza and the prefabricated geometric flower beds. But what makes this building so unique are the artistic “cube” walkways in the front and back courtyards. Special techniques were used to achieve this creative design. First, onyx-colored, joint-free concrete was placed, then, using a series of light and heavy sandblasting, light and dark shades were produced in the concrete, giving the walkway the appearance of three-dimensional trompe l’oeil cubes.

Project credits: VCBO Architecture, Architect; and Hughes General Contractors, General Contractor.
Submitted by Amber Ridings, Marketing Communications Specialist, Hughes General Contractors, Inc., North Salt Lake, UT, +1.801.292.1411, amber@hughesgc.com.
The expansion project consisted of two new six-story buildings that serve primarily as classroom space. The exterior of these buildings is comprised of a combination of masonry, architectural precast concrete, and glass fiber-reinforced concrete (GFRC). The precast was used mainly as a wainscot around the base of the building and in other bandings and trims. The GFRC, cast to match the color and texture of the precast, was used for the large pilasters and entry surrounds of the buildings. The landscape design included monument signs, benches, and planters that were all made of precast.

Project credits: ZGF Architects and FFKR Architects, Architect; Okland Construction, Jacobsen Construction and Layton Construction, Joint Venture General Contractor; and Unlimited Designs, Precast and GFRC Fabricator.

This project added 2 miles (3 km) of outside freeway lanes, 14 mainline bridges, seven pedestrian bridges, walls, a single-point urban interchange, and a shared-use path, encompassing over 40,000 yd³ (30,580 m³) of concrete. Steel fiber reinforcement was used on two bridges, the first application of this technology on a bridge in the United States.

Project credits: Ralph L. Wadsworth Construction and Staker Parson Companies, Joint Venture Design-Build Contractor; Dry Creek Structures, Concrete Contractor (Bridge); Harper Precast and Forterra Structural, Precast Suppliers; Contech Engineering Solutions, Precast Material Supplier; and Utah Pacific, Precast Material Supplier.

Submitted by Mike MacArthur, Ralph L. Wadsworth Construction, Draper, UT, +1.801.617.1774, mmacarthur@wadsco.com.
Mountain “S” Home
Park City, UT 84098

Stepping and twisting around its mountain site, this resort home is an S-shaped concrete structure with 30 individual kite-shaped roofs. Roofs are 16 in. (406 mm) thick and cantilever as much as 21 ft (6.4 m) while supporting a 235 lb/ft² (11 kPa) snow load while tapering to a 1-in. (25 mm) thick razor-edge along the lower eaves. Roofs are supported on 32 in. (813 mm) long concrete piers averaging 16 ft (4.8 m) in height, designed for gravity and seismic forces. Interior concrete chimneys and hearths appear to float above the floor. They are cantilevered from the ends of shear walls. The main level floor is constructed of suspended reinforced concrete with a maximum span of 45 ft (14 m), allowing the lower-level driveway to extend through the house.

Project credits: AE URBIA, Structural Engineer.
This architect’s building is an historic warehouse that has been preserved and converted into a two-realm office space. The bowed wooden ceiling and the exterior brick masonry walls were specifically preserved from the original design. The flooring features the patented MagicSlab® process, producing joint-free polished concrete floors with a predicted indefinite service life. The 180 x 60 ft (55 x 18 m) floor slab has only two saw cut joints.

Project credits: Naylor Wentworth Lund Architects, Architect; and Hughes General Contractors, General Contractor.

Submitted by Amber Ridings, Marketing Communications Specialist, Hughes General Contractors, Inc., North Salt Lake, UT, +1.801.292.1411, amber@hughesgc.com.
The renovation of the world headquarters for this international company included complex concrete hardscapes as part of major landscape improvements. Cast-in-place concrete included sandblast-finish bands for several intricate walking paths, several thousand square feet of sub-slab, and several thousand feet of planter wall. The most demanding elements were the fountain stepping blocks, where tight placements left little room for finishing. The stepping blocks were cast in one placement and used a dampproofing admixture and a surface retarder to aid the sandblast finish. The plaza sub-slab served as the base for intricate arrays of heat tube embedded in concrete bands that made up part of the finished paving. The concrete bands had to be isolated from the sub-slab controls joints, and the forms needed to stay laser straight to minimize lippage with the pavers. Monolithic placements of sub-slab and curb wall on the front reduced 4 days off the schedule.

Project credits: Big-D Construction, General Contractor; Green Construction, Concrete Contractor; Geneva Rock Products, Concrete Supplier; and Xypex, Dampproofing Admixture Supplier.

Submitted by Morgan Green, CEO, Green Construction, Kaysville, UT, +1.801.643.8599, morgan@gci-utah.com.
Odyssey Elementary School features concrete benches and planters in various sizes and designs, each one constructed in a single concrete placement. These unique arching and curving benches and planters were designed to correspond with the school's “Bodies in Motion” architectural theme. The spiral and zig-zag benches symbolize a springing motion that coincides with other flying, swimming, and running elements. Many of the planters also serve as benches, adding function and visual aesthetic to the courtyard.

Project credits: VCBO Architecture, Architect; and Hughes General Contractors, General Contractor.

Submitted by Amber Ridings, Marketing Communications Specialist, Hughes General Contractors, Inc., North Salt Lake, UT, +1.801.292.1411, amber@hughesgc.com.
Payson Utah Temple
1494 S. 930 W., Payson, UT 84651

To achieve a high level of ornate detail and quality, precast concrete is consistently used to build stunning temples across the United States. This temple is no exception. Aggregate was imported from California and panels were sandblasted to achieve the exact finish desired. The precast roof and wall panels cover a steel frame structure, increasing the speed of enclosure after the supporting structure is in place.

Project credits: Architectural Nexus, Architect; Reaveley Engineers & Associates, Structural Engineer; Wadman Corp., General Contractor; and Forterra Structural Precast, Precast Supplier.

Submitted by Sarah Sutherland, Business Developer, Forterra Structural Precast, Salt Lake City, UT, +1.720.245.4599, sarah.sutherland@forterrabp.com.
The Prestige building is the second four-story, tilt-up, Class A office building, the first in Utah to not rely on any structural steel for lateral load-resisting systems. The building shell was erected in a 2-week period using 12 in. (305 mm) thick by 58 ft (17.6 m) tall wall panels. Although the exterior of the building appears to have various finish materials, the shell is exposed concrete with a variety of textures created using multiple formliners, reveals, and thin brick. The concrete has excellent fire-resistant properties, sound-mitigating properties, mold resistance, thermal properties, durability, and minimal maintenance.

Project credits: AE URBIA, Architect and Structural Engineer.

This 6 million gal. (23 million L), post-tensioned concrete water tank (AWWA D115) is a perfect marriage of architectural might and aesthetics. The unconventional tank corridor design required post-tensioning in the floor, walls, and roof. The roof and floor, both 355 x 100 ft (108 x 30 m), had to be placed monolithically—1000 yd³ (765 m³) for each placement. The walls facing the street were cast with a rock design and stained to give the appearance of a retaining wall supporting the sloped hill. When tested, this water-retaining structure had 0% water loss.

Project credits: Provo City Public Works, Owner; Hansen, Allen and Luce, Enigneer; ProBuild Construction, General Contractor; VStructural, Post-Tensioning Contractor and Designer; and Metro Ready Mix, Concrete Supplier.

Submitted by Tommy Jessup, HR Manager, ProBuild Construction, Inc., West Jordan, UT, +1.801.295.1300, tommy@probuildinc.com.
The Salt Lake City Public Safety Building is the first net-zero energy and LEED Platinum certified public safety building in the United States. It was designed to withstand ballistic impact and meet Antiterrorism/Force Protection requirements, as well as to withstand an earthquake of 7.5 magnitude. Terra cotta imported from Italy was cast into the precast concrete insulated wall panels. The wall panels have an R-value of 19 and incorporate composite pin connectors to minimize thermal bridging. The building was designed with extreme attention to detail in its sustainability performance and aesthetic design.

Project credits: GSBS Architects, Architect; and Forterra Structural Precast, Precast Supplier.

Submitted by Sarah Sutherland, Business Developer, Forterra Structural Precast, Salt Lake City, UT, +1.720.245.4599, sarah.sutherland@forterrabp.com.
Saratoga Springs Marina Secondary Water Pump Station
Saratoga Springs Marina at Pelican Point, Utah Lake, UT 84045

The pump station consists of a wet well, intake structure, and retaining walls—all cast-in-place concrete. The 14 x 44 ft (4 x 13 m) wet well is nearly 28 ft (8.5 m) deep, with 24 in. (610 mm) walls that were placed in two lifts. The intake structure and retaining walls are 20 x 24 ft (6 x 7 m) in plan by 20 ft tall, with walls ranging in thickness from 10 to 14 in. (254 to 356 mm). The intake pipe is 36 in. (914 mm) diameter with a 36 x 30 wye and two 30 in. (762 mm) T-screens, plus high-pressure air lines for screen cleaning. The roof includes grated openings for maintenance. Construction required 24-hour dewatering.

Project credits: City of Saratoga Springs, Owner; Hansen, Allen & Luce, Engineer; Dean L. Webb & Associates, Structural Engineer; and COP Construction, General Contractor.

Submitted by Jeremy D. Lapin, Public Works Director, City of Saratoga Springs, UT, +1.801.766.6506, jlapin@saratogaspringscity.com.
School of Dentistry
530 S. Wakara Way, Salt Lake City, UT 84108

The school features unique decorative glass fiber-reinforced concrete (GFRC) panels as a focal point at the front of the building, using a red color in the GFRC to match terracotta panels in other areas. The pattern cast into the panels using a custom rubber mold has the look of tree trunks and branches with a background of desert cracked clay bed. The panels were integrated with a continuous insulation system to achieve a sustainable design complementing the beauty of the building.

Project credits: MHTN Architecture, Architect; Okland Construction, General Contractor; and Unlimited Designs, GFRC Fabricator.

Springville Public Library
50 S. Main St., Springville, UT 84663

Springville, UT, celebrated its 159th anniversary with the ribbon cutting of a new 70,000 ft² (6500 m²) library, which also housed the city's administrative departments and personnel, the City Justice Court, the City Council chambers, and the police station. Exterior precast elements included many bandings, window surrounds, medallions, and the large arches of the main tower of the building.

Project credits: CRSA Architecture, Architect; Layton Construction, General Contractor; and Unlimited Designs, Precast Fabricator.

The Summit at Snowbird
9385 S. Snowbird Center Dr., Snowbird, UT 84092

The three-level resort lodge is a mountain restaurant and guest services station located at the top of Hidden Peak at 11,000 ft (3350 m) elevation. The kitchen, employee space, ski patrol offices, and mechanical functions occupy the basement. The first floor includes a main dining hall with cafeteria, kitchen storage, service area, restrooms, and outdoor deck. The second floor consists of a private dining room with reception, service areas, and two outdoor decks. The windows are equal in size to two IMAX theater screens, providing 360-degree panoramic views. Aside from weather, the main construction challenge was access to the site, tapping many forms of transportation to get equipment and supplies to the job: Snowbird's tram, a helicopter, snowmobiles, a snow cat, and haul trucks. Concrete trucks had to move slowly up the narrow mountain roads, carrying only about 6 yd$^3$ (5 m$^3$) of concrete. A round trip took just over 6 hours. Excavation for the new foundation spanned the site to the existing tram foundation wall. Because backfilling with excavated soil could put pressure on the existing foundation, geofoam blocks were used, then covered with 4 in. (102 mm) of free-draining gravel and the concrete slab for the patio.

Project credits: GSBS Architects, Architect; Stantec, Structural Engineer; Layton Construction, General Contractor; and Altaview Concrete, Concrete Supplier.

Submitted by Alan D. Rindlisbacher, Director of Corporate Communications, Layton Construction Company, LLC, Sandy, UT, +1.801.563.3722, arindlisbacher@laytonconstruction.com.
Telos U is a five-story, 74,000 ft² (6870 m²) architectural tilt-up concrete structure, with two stories of living space atop a three-story gymnasium. The 60 ft (18 m) tall tilt-up panels incorporate integrally colored concrete and thin-brick accents, resulting in rich coloring and texture. Because the design called for exposed polished concrete floors, special care and consideration needed to be taken not to damage the casting floor while handling the enormous panels.

Project credits: Richardson Design Partnership, Architect; and Hughes General Contractors, General Contractor.

Submitted by Amber Ridings, Marketing Communications Specialist, Hughes General Contractors, Inc., North Salt Lake, UT, +1.801.292.1411, amber@hughesgc.com.
Thanksgiving Point office towers is a 22,000 ft² (2040 m²), mixed-used building with the third floor set aside for executive office suites near I-15, with quick access to many restaurants and hotels. Glass fiber-reinforced concrete (GFRC) column covers are located throughout the interior and exterior. The GFRC has a high-end, hen-picked finish to match natural stone. The GFRC and the high-quality woodwork in the lobby impart eloquence and class.

Project credits: Thanksgiving Park Development, Owner; Beecher Walker Architects, Architect; Big D & Jacobsen Construction, General Contractor; and Unlimited Designs, GFRC Fabricator.

The most striking architectural features in this office-warehouse are the integrally colored exposed tilt-up concrete panels. These trinity white and dark gray panels are staggered and stepped to create depth and intrigue in the façade. Because the panels are integrally colored and sealed, they will never need to be painted. The smooth, white concrete panels were particularly challenging to produce because they require a completely clean batch plant and a tightly controlled process at every stage of fabrication.

Project credits: AE Urbia, Architect; and Hughes General Contractors, General Contractor.

Submitted by Amber Ridings, Marketing Communications Specialist, Hughes General Contractors, Inc., North Salt Lake, UT, +1.801.292.1411, amber@hughesgc.com.
The Tickville Wash culvert was designed to tame Utah's 100-year floods. The design featured 4000 ft (1219 m) of 96 in. (2438 mm) diameter reinforced concrete pipe capable of carrying 966 ft³ (27 m³) of water per second with an average grade of 1% and with a maximum joint gap of 0.5 in. (13 mm). Each pipe segment weighed 44,000 lb (20,000 kg) for a total pipe weight of just under 4,000,000 lb (1,800,000 kg). The design featured a public park directly over the culvert, with walking paths, dog parks, skate parks, water features, antique tractors, and beautiful landscaping.

Project credits: City of Saratoga Springs, Owner; LEI Engineering, Engineer; Noland & Son, General Contractor; and Geneva Pipe and Precast, Concrete Pipe Supplier.

Submitted by Jared Johnston, Corporate Sales and Marketing Manager, Geneva Pipe and Precast, Orem, UT, +1.801.900.2944, jjohnston@genevapipe.com.
University of Utah Business Loop Parking Structure
Campus Center Dr., Salt Lake City, UT 84112

This four-level concrete parking structure at the University of Utah provides almost 800 stalls and includes concrete ramps, decorative suspended architectural concrete panels, glass stair enclosures, and concrete stair structures. On top of the structure is a synthetic turf playing surface with a drainage system over the entire roof level and playfield lighting on 70 ft (21 m) poles, which are mounted to concrete columns within the structure. Like other parking garages, one of the unique challenges was making sure the car barrier cabling was properly placed in the concrete walls and columns, working cabling sleeves into formwork and around reinforcing bars.

Project credits: VCBO Architects, Architect; Reaveley Engineers + Associates and Envision Engineering, Structural Engineers; Layton Construction, General Contractor; and Altaview Concrete, Concrete Supplier.

Submitted by Alan D. Rindlisbacher, Director of Corporate Communications, Layton Construction Company, LLC, Sandy, UT, +1.801.563.3722, arindlisbacher@laytonconstruction.com.
University of Utah Shoreline Ridge Parking Structure
85 S. 2035, East Salt Lake City, UT 84112

This six-level, concrete-based garage uses a precast concrete panel and masonry exterior, making it aesthetically pleasing and space efficient. The exposed concrete on the garage's interior complements the precast concrete panels, masonry, and stainless steel exterior. The sloped-site project includes a cast-in-place retaining wall with an architectural finish.

Project credits: Ralph L. Wadsworth Construction and Staker Parson Companies, Joint Venture General Contractor; RLW Concrete and Altaview Concrete, Concrete Suppliers; and Gerdau Reinforcing Steel, Reinforcing Steel Supplier.

Submitted by George B. Smith, Ralph L. Wadsworth Construction, Draper, UT, +1.801.553.1661, gsmith@wadsco.com.
What is more exciting, the virtual reality games taking place inside or the fact that this unique building is made out of precast concrete? Board-finish form liners were used to create a wood-like exterior finish on insulated structural precast panels.

Project credits: Forterra Structural Precast, Precast Supplier.
Submitted by Sarah Sutherland, Business Developer, Forterra Structural Precast, Salt Lake City, UT, +1.720.245.4599, sarah.sutherland@forterrabp.com.
The W. W. Clyde Corporate Office is a 26,441 ft² (2460 m²), Class A office building featuring carefully crafted board-form concrete tilt-up panels and streamlined glass detailing. The tilt-up concrete panels display the shape and texture of the cedar wood used to line the forms. These exposed board-formed walls were also strategically placed on the interior for architectural intrigue. Adding to the construction challenges and design excellence, some panels were formed with a 90-degree return to eliminate typically visible joints on the corners of the building.

Project credits: Method Studio, Architect; and Hughes General Contractors, General Contractor.
Submitted by Amber Ridings, Marketing Communications Specialist, Hughes General Contractors, Inc., North Salt Lake, UT, +1.801.292.1411, amber@hughesgc.com.
The 60,000 yd³ (45,870 m³) placement for the supermarket slab prompted an aggressive plan for a 1-day operation that broke company records. The slab placement required 98 concrete trucks, four crews of over 60 workers, and 28 hours—all of which saved 2 weeks on the schedule. The cost to bring in crews from across the country was more than recovered in saved labor costs. More important was the chance to have employees from across the company work together and spend time catching up.

Project credits: Phaze Concrete, Concrete Contractor.
Submitted by Paul J. Beagley, President, Phaze Concrete, Inc., Hilldale, UT, +1.435.656.9500, paulb@phazeconcrete.com.