EPICENTER Spring 2016

Inside This Issue:

IHC's Riverton Hospital Expansion Complete

On February 24th Intermountain Healthcare held an open house and ribbon cutting for the new 4-story Outpatient Building expansion of the Riverton Hospital. The new 120,000 square foot expansion will house additional services such as rheumatology, pulmonology, a senior clinic, ophthalmology and podiatry. As well as the inpatient laboratory, endoscopy and an expanded physical therapy facility. In 2014, McNeil Engineering was commissioned by HDR Architecture to provide Landscape Architectural consulting services for this new expansion. This addition included the expansion of parking lots and landscaping as well as the development of an outdoor Physical Therapy Courtyard.

Back in 2006, McNeil Engineering was commissioned by the San Francisco based architectural firm, Anshen + Allen (currently Stantec) as the Landscape Architectural consultant for the original Riverton Hospital construction. Located just off Bangerter Highway and 12600 South, Riverton, Utah in the rapidly growing section of Salt Lake County, this facility serves individuals throughout Salt Lake and Utah Counties to better serve the increased demand for health care needs along the Wasatch Front.

The hospital is located on a sixty-seven (67) acre site and provides southwest valley residents with access to a full range of clinical services from outpatient radiology to general surgery to women's and birthing services. The campus includes a four-story hospital, a four-story Primary Children's Medical Center outpatient facility and a four-story physician office building and the new outpatient building. The owner's goal was to create an environment that while functional, will also serve as a healing and soothing space for patients and visitors. The owner and consultant team worked closely with the city to meet local ordinances as well as develop a facility that will stand as a beacon to quality healthcare for years to come.

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The Entrada Institute in Southern Utah

Don't you just love Capitol Reef and the surrounding area? This certainly is one of the more beautiful parts of Southern Utah. The Entrada Institute, located in Torrey, Utah loves the area. In fact that is the whole reason the institute is in existence.

The Entrada Institute was founded in 1992 by a group of desert lovers who wished to share their enthusiasm for the Capitol Reef area with like-minded arts and outdoor lovers.

The Robber's Roost Bookstore, home of the Entrada Institute was recently renovated including a new roof, windows, and flooring. The Entrada Institute has purchased property adjacent to the Bookstore. A capital campaign is in place to develop this new property into a cultural center.

So how does McNeil Engineering fit into the Entrada Institute? McNeil Engineering's Survey Department completed an ALTA Survey on the new property. The survey included topographic and utility information.

Entrada Institute is building a new cultural center on the new property and McNeil Engineering's Civil Engineering Department is completing the civil engineering design on the center, that includes an outdoor stage. The center will host performing art events, as well as other events related to the mission of Entrada Institute.

Helping the Next Generation of Engineers

City Academy, a charter school, located in downtown Salt Lake City wants to build an atrium to connect their two buildings. Jeff Hart, City Academy's STEM Center Director and teacher of their engineering classes, is making this a student driven project.

Mr. Hart reached out to Mike Hoffman, McNeil Engineering's Survey Manager for help with the first phase which is gathering necessary as-built data through the use of 3D laser scanning technology. Hoffman agreed to donate time and resources to help students learn about this amazing technology.

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In November a small group of students, from City Academy, visited McNeil Engineering's office to begin the process of learning about laser scanning technology. In February, Hoffman loaded a scanner and went to City Academy to scan the two building and the space in between.

Over a two day period and with the help of several students, Hoffman completed several scans to capture the necessary data.

The data captured will be used by students and other mentor companies to design the atrium.

Students Getting Hands-On with 3D Laser Scanning






FUN FACT

The Burj Al Arab is a 5-star luxury hotel located in Dubai, United Arab Emirates. At 321 m (1,053 ft), it is the fourth tallest hotel in the world. The shape of the structure is designed to mimic the sail of a ship.

In The News:

Panama Canal Expansion Due to Open in June

The new expansion of the panama canal is due to be complete the end of June 2016, two years behind schedule. The expansion of the Panama Canal was necessary to accommodate the larger vessels that have become more common in the shipping

industry.
The expansion may shift international trade routes, allowing ships to reach Asia from the U.S. Gulf Coast more than two weeks faster than they would going east through the Suez Canal. This expansion will make room for vessels with the capacity to carry 12,600 containers, almost three times what the existing locks allow.

America's Water Infrastructure Almost Receive a Failing Grade

Our country must do better than nearly failing when it comes to something so vital and fundamental as water. Yet a D is our nation's water infrastructure grade from the American Society of Civil Engineers. It has taken the lead contamination scandal in Flint, Michigan to focus the attention of Congress and elected officials across the nation, but Flint is only the tip of the iceberg.

Hollow Columns Holding Up Bridges in Washington State Could Implode in Major Quake

Some of Washington state's busiest bridges have a surprising design feature deep inside their massive structures. It's air. The concrete columns supporting these bridges are hollow, and it could mean big trouble in a big earthquake.

If a severe earthquake hit, there's a high risk that the inside could break loose, and

World-Class Archery Training Facility

On April 15, 2014 Easton Foundations opened a new state-of-the-art archery training facility in Salt Lake City, providing Utah with one of the world's premier archery training centers. This world-class facility boasts one of the largest dedicated indoor ranges in the world and also has outdoor and 3D ranges. The Easton Salt Lake Archery Center will provide exceptional training for teams and individuals locally as well as internationally.

Easton Salt Lake Archery Center

This $12 million training facility includes a dedicated indoor archery range with 92 shooting lanes to 18 meters or 30 shooting lanes to 70 meters. The center also has a transition room which allows archers to shoot from the indoors out.
Additionally, the center includes:

- Classrooms allocated for coach training and seminars
- Sports medicine room
- Gym
- Locker room with showers
- Full kitchen (vending machines)
- Observation deck with a great view of the range
- Workshop with the necessary tools for equipment maintenance, repairs and tuning

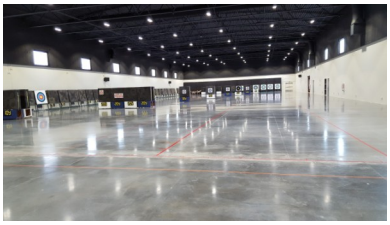
In addition to the indoor ranges, there is an outdoor archery range on an artificial turf field, with a shooting distance out to 90 meters (64 targets) and a dedicated Field and 3-D archery range.

Outdoor Shooting Range

McNeil Engineering provided the surveying and civil engineering for the original construction of the facility in 2014. Currently, McNeil Engineering is providing the surveying and civil engineering for a proposed expansion to the outdoor archery range. This expansion is necessary in order to accommodate world class archery competitions in the future

The past couple of years Utah's archery community has benefited from this training facility which provides open shooting, leagues, regional and national and international events, specialty camps and clinics, instructor certification courses and opportunities to train one-on-one with certified instructors and coaches.

The Easton Salt Lake Archery Center is a project of the Easton Foundations, which has a network of regional training facilities working together. These combined training facilities serve the needs of shooters whether the goal is recreation, Olympic gold, or anything in between.



Indoor Shooting Range

This facility has certainly placed Utah on the international archery map!

Making A Difference in Utah For 100 Years

2016 marks an important milestone in the ASCE Utah Section's history. Yes, ASCE Utah Section is celebrating 100 years of engineering success in Utah. In those 100 years ASCE Utah Section has seen and been a part of so many engineering wonders. I-15 expansion, Central Utah Water Project, the State Capitol retrofit, 2002 Winter Olympic venues and the Salt Lake City Library just to name a few. So many amazing engineers have made these and so many other projects possible. Let's tip our hats to the many engineers that have been a part of and built the ASCE Utah Section for the past 100 years.

ASCE
UTAH SECTION
Celebrating 100 Years of Excellence

Join us in wishing ASCE Utah Section a happy 100th birthday! Visit their website for information on celebration events during this centennial year. ASCE Utah Section is building the foundation for the next 100 years. http://sections.asce.org/utah/

Employee Anniversaries this Quarter		
Employee	**Date Started**	**Years of Service**
Dan L Schaugaard	4/21/1999	17
David B Draper	5/22/2000	16
Walter C Travis IV	4/26/2006	10
Jacob H Felshaw	4/7/2008	8
Elizabeth A Draper	6/7/2010	6
Tevi Lawson-Avla	5/7/2012	4
Becky Scholes	5/6/2013	3
Noel A Enriquez	6/4/2014	2
Keatyn Smith	6/15/15	1

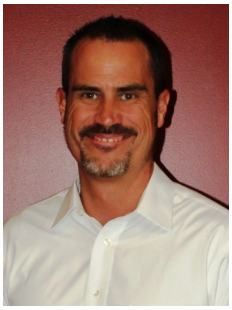
Downtown Living

Downtown Salt Lake City is going crazy with new residential and multi-use facilities going up. Over the last several years McNeil Engineering's Civil and Structural Engineering and Survey Departments have played a role in several of these projects.

One of these new luxury apartment projects that was recently completed is the Encore Apartments. The six-story, 189-unit apartment building will bring new residents to a growing section of Salt Lake City. The main entrance will front the northwest corner of the 500 East and 400 South intersection.

Included amenities include a rooftop courtyard with a pool, spa, dog park, outdoor fireplace and barbecue areas.

The design team worked to design the structure using CAD software Revit Structures; fully integrated physical and analytical modeling software for use in BIM design.



The project was constructed with post tensioned floors for the parking and podium levels with concrete walls and columns and 2x timber walls with prefabricated trusses for the floor and roof structure and masonry stair and elevator towers.

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Humanitarian Project

Rod Davis, McNeil Engineering's Consulting Manager, recently returned from a humanitarian trip to the Dominican Republic, with his wife's company doTERRA. During this trip the group of almost 800 doTERRA employees and their family members assembled and distributed 200 bicycles, 200 wheel chairs and 200 school supply backpacks.

Rod says, *"by participating in projects such as this you truly gain a greater appreciation for what you have."* He went on to say what a privilege it was to participate in such a *"wonderful opportunity."*

There will be a lot of happy kids riding their bike to school with a backpack full of school supplies.

Thanks Rod and doTERRA for making a difference!

10 Construction Trends Shaping the Industry in 2016 and Beyond

From cutting-edge building technologies to innovative construction methods and better decision-making systems, projects are getting smarter. Given the rapid development of emerging construction opportunities, owners should demand faster projects, lower costs and better buildings. Here are 10 trends that will shape and improve construction projects in 2016 and beyond.

- **Detailed 3D BIM modeling**

Architectural models have changed. Instead of 2D drawings, 3D computer designs using Building Information Modeling (BIM) are becoming the standard, providing owners better visualizations. And today, these are no longer limited to architectural models but also models of specific building systems.

- **Cost and schedule modeling with 5D Macro-BIM**

More and more design firms are adopting 5D Macro BIM at the earliest stages of design. These models show owners how early design concepts affect cost, schedule and constructability, allowing them to evaluate large-scale options and make informed decisions.

- **Pre-fabrication**

Owners are increasingly realizing value as construction firms pre-fabricate building elements off-site. Instead of sequentially constructing facilities, contractors are starting to deliver multiple project elements at the same time to streamline schedules.

- **Energy-saving building systems**

Design and construction firms are increasingly bringing energy-efficiency analysis into the early design and construction process. Builders, owners and architects have increasing opportunities to model how different energy-efficient solutions affect a build.

- **Smart buildings**

Buildings are becoming increasingly connected, with systems that provide data monitoring and remote access. Technologies are emerging to allow owners to not only track their facility's systems but also automate them.

- **Integrated mobile technology and information on jobsites**

Construction teams are increasingly using mobile devices to file reports and share information on jobsites, streamlining the construction process. The use of this technology reduces costs while improving the reliability of reports and jobsite documentation.

- **Robotic automation**

Some jobs in a construction project involve repetitive manual labor and can be automated. Robots and automated technology are emerging to handle certain tasks, such as robotic masonry and brick laying, and will be integrated into projects over the next few years.

- **Unmanned Aerial Vehicles (UAVs)**

Unmanned Aerial Vehicles (UAVs) are small devices with rotors and an on-board camera that takes stills or sends video to a live feed. Some can be piloted from an iPad, iPhone or Android device.

- **3D Printing in construction**

A 3D printer is a machine that connects with a computer interface to process 3D designs. Then, using an extruder filled with a hot, liquid material (almost like a glue gun), prints the 3D design layer by layer. In the future, this technology may impact construction.

- **Enhanced jobsite safety**

As technology moves workers further and further away from the most dangerous tasks, construction projects should get safer.