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On the cover: Grove Tower is the first office building at the 62-acre master planned Valley Grove development in Pleasant Grove. (photo courtesy Beecher Walker Architects)
Rising to Greatness in the Face of Adversity

Anniversary profiles have become a staple of UC&D during our nearly six years covering Utah’s A/E/C industry, and I consider it a privilege to interview the great individuals behind these successful firms—celebrating key milestones, and to find out what drives them, what makes them tick.

The ability to rise above adversity is a common theme for the three anniversary profiles in this issue—Watts Construction (50th), Horrocks Engineers (50th), and Pentalon Construction (25th). Each of the leaders of these firms have overcome significant personal and professional challenges in their lives that ultimately made them stronger, more resilient people.

Watts Construction founder Richard Watts was hit hard by the Savings & Loan Crisis in the late 1980s and ended up relocating his company from northern Utah to St. George, scaling back to 20% of previous capacity just to keep the business afloat. During the last recession beginning in 2008, the company saw revenues bottom out from 2010 to 2012, and second-generation company leader Doug Watts experienced three trying years before tightening the ship. Watts today is the largest commercial GC with headquarters in Utah’s sixth-largest city, with annual revenues over $150 million (page 44).

The story of Horrocks Engineers’ founder Gilbert Horrocks is nothing short of inspiring. He endured a hardscrabble upbringing during the Great Depression, living in a tiny two-room log cabin in rural Duchesne County that was sans running water and electricity, with potable water drawn from a well a mile away. Horrocks’ mother died during his early teen years and he had to forego much of his schooling to help his father tend to the family as the oldest of six children. He ultimately earned a degree in Civil Engineering and founded Horrocks Engineers in 1968, where he specialized in water resources projects, understanding perhaps more than anyone who designs water infrastructure projects how essential they are to our quality of life. The firm ranked as the No. 1 Engineer in Utah this year based on 2017 revenues of $39 million (see page 26).

Pentalon Construction founder Carl Tippets also battled through tough times during the recession, and gained great perspective about life during the economic downturn, partly through his love of long-distance running, a sport he picked up in 2006 at the behest of a subcontractor friend. Pentalon has averaged nearly $100 million the past three years and Tippets, despite turning 65 this year, has plans to grow the firm to $150 million annually (page 45).

The fortitude of these men brings to mind the 1906 poem ‘Worth While’ by Ella Wheeler Wilcox:

It is easy enough to be pleasant,
When life flows by like a song,
But the man worth while, is one who will smile,
When everything goes dead wrong.

For the test of the heart is trouble,
When everything goes dead wrong.

But the man worth while, is one who will smile,
When everything goes dead wrong.

And the smile that is worth the praises of earth,
Is the smile that shines through tears.

This issue of UC&D is also highlighted by our list of 2018 Top Utah Engineering Firms (page 60), an article on Salt Lake based Bodell Construction’s prowess in the heavy industrial market outside of the Beehive State (page 53), and a look at St. John’s Properties (page 36), an out-of-state subcontractor/GC relationship from Utah’s growth market.

It’s hard to believe the final quarter of 2018 is here—is our Most Outstanding Projects of the Year competition here, and we’re excited to host our 6th annual MOP Awards Breakfast Tuesday, December 11 at Little America Hotel in Salt Lake City. We look forward to seeing many of you there.

Regards,

Bradley Fullmer

Publisher/Managing Editor
bfullmer@utahcdmag.com
Promotions, New Hires Dot Local A/E/C Industry

BHB tabs Pettit as CEO; Reaveley announces new hires; Nation named NAWIC President; Horrocks names new Associates.

Salt Lake-based BHB Consulting Engineers recently named Scott Pettit as its new CEO, as co-founder Don Barker is stepping down to dedicate more time serving his clients and mentoring BHB’s engineering team.

During Barker’s tenure as CEO, the 26-year-old firm has established itself as one of the largest structural engineering firms in the Intermountain region with offices in SL C and Boise. Barker graduated with a Master of Structural Engineering from Utah State University in 1983 and has over 35 years of experience. Barker, along with BHB executives Chris Hofheins, President, and Jay Miller, CEO, helped create a culture of responsiveness to clients and a firm capable of designing significant projects in myriad commercial markets.

Pettit, who earned a Master of Structural Engineering (1997) from California State University, has more than 23 years of experience, and has been a Principal at BHB for 14 years. He said he’s committed to BHB’s future development as a firm, and eager to execute its progressive strategies for growth.

“I am honored to serve as CEO at BHB. We are an organization focused on hard work and continual improvement,” said Pettit. “As CEO, I want to elevate our customer service experience, develop our employees, and take BHB to an even higher level of excellence.”

Reaveley Engineers of Salt Lake City recently hired two new Project Engineers.

Tim Strickland is a Salt Lake City native and recently relocated back to the area from California to pursue a career with Reaveley. He holds a Bachelor in Civil Engineering from the University of Delaware and a Master of Structural Engineering, Mechanics, and Materials from the University of California Berkeley. He brings 20 years of prior experience as a project architect for projects such as BYU’s Lavell Edwards Stadium Mezzanine Addition and the University of Utah Orthopaedic Center Skills Lab Addition.

Catherine Tucker graduated from Lewis & Clark College in 1997 with a Bachelor of Art degree. In May 2002 she received a Master in Architecture from the University of Utah, and then pursued a Master in Civil & Environmental Engineering, also from the University of Utah. She is currently finishing her Ph.D. in Civil & Environmental Engineering at the University of Utah. Prior to joining Reaveley, she worked as a project manager/architect for eight years. Tucker brings valuable insight to her projects, given her experience as an architect. She has added expertise to projects such as the Holladay Library Addition and the Capitol Theatre Phase 2 Renovation.

The Utah Chapter of the National Association of Women in Construction (NAWIC) announced that Tracy Nation, a Project Administrator for Salt Lake-based Big D Construction, has been named President of SLC Chapter 90 for 2018-19. She takes the reigns from Karla Steinle-Hunter.

Nation started her career at NAWIC in 1997 and has since held positions of Treasurer and Vice President. She also served as the chapter’s President from 2001-2003. “With more than 4,400 members nationally, I am very excited to guide the SLC Chapter 90 to new heights,” said Nation.

Tracy currently works as a Project Administrator for Big D Construction in Salt Lake City, Utah. She plans to use her experience in construction, and her role with NAWIC to attract more women to the construction industry. “There is potential in the construction industry for women in the Wasatch Front and I hope to empower them to join an organization that believes in them and is here to support them.”

NAWIC also announced the following changes: Jodi Simpson will serve as the Chapter’s Vice President; Patty Waldhouse will serve as the Chapter’s Secretary and Paula Sorensen will serve as the Chapter’s Treasurer.

Salt Lake-based Bowen studios announced two new additions to its staff. Audrey Cross has joined the progressive 3D/graphics firm as its Office/HR Manager, working directly with owner Brent Bowen. She comes to the team with experience and enthusiasm, while also driving in-house excitement.

Pete Kane is the firm’s new Business Development/Project Manager. He worked previously as a Senior Project Manager for an East Coast-based visualization firm and has served on several committees. He earned a Bachelor of Marketing from the University of Utah and is currently pursuing a Master of Real Estate Development from the U of U.

Wickizer has an extensive background in BD/Marketing. She was a Founding Principal and is President of USCIS-approved EB 5 Regional Center, and holds a current license in Real Estate. She is a graduate of UAR Leadership, and Past VP of the Utah Association of Realtors.

The group includes: Austin Chappell, Chris Melander, David Simmons, Dustin Richins, Jared Olsen, Jordan Sheets, Karie Davidson, Kasey Chestnut, Katie Kourounas, Kip Davidson, Leith Sheets, Mark Atencio, Michelle Cranger, Mike Raddon, Steve Bellino, Tony Curtis, Trevor Youd, Tyrone Atkin. ■
Wildlife Crossing at I-80/Parley’s Summit Aims to Reduce Vehicle-Animal Collisions

In an effort to improve traffic safety on Interstate 80 in Parley’s Canyon, UDOT has built a new $5 million ‘Wildlife Crossing’ – a 48 ft. wide by 330 ft. long bridge that crosses I-80 just west of the Parley’s Interchange – the first of its kind in the state.

UDOT worked in collaboration with the Utah Division of Wildlife Resources on this project, which is part of an overall $20 million 'Climbing Lanes' project that includes adding a lane for slower semi trucks, and a sound wall near Jeremy Ranch. Crews from Draper-based Ralph L. Wadsworth Construction placed a total of 12 steel beams (319 ft. long) weighing more than 760,000 pounds.

According to Clint Wiscombe, Project Manager for RLW, this CM/GC project was the state’s first IDC project using a model as the contract document. It added more than three miles of new climbing lane on I-80 through the heavily traveled trucking route from Jeremy Ranch to Parley’s Summit and included the rehab of both eastbound and westbound bridges at Jeremy Ranch.

The new bridge has integral concrete coloring that harmonizes with the existing habitat. Various form liners were utilized, including stacked stone liner on abutments and wood ship liners on parapets, plus v-shaped columns on the pier. RLW collaborated with DWR on migratory paths, aesthetics, and specific needs to help influence wildlife to use the bridge.

The team used models to visualize project improvements before construction started including a visualization of the wildlife overpass, climbing lane, and noise wall and made it available through virtual reality goggles at open houses for the public. This created a sense of understanding and support from members of the community prior to and during construction.

This was also one of UDOT’s first projects implementing the Model Based Design and Construction (MBDC) initiative, where design and construction teams worked together to ensure that models were compatible with a variety of estimating, survey, and visualization packages to gain the maximum benefit from MBDC. The model makes clash detection easily identifiable. This saves significant design costs creating sheets and greatly reduces errors. The 3D model can be imported into a variety of estimating take-off software to more easily calculate quantities, especially earthwork and drainage related items.

Between the 13-mile stretch from Lambs Canyon and Kimball Junction, UDOT reported that vehicles killed an estimated 140+ animals. Additional wildlife fencing is also expected, with the intent of funneling much of the wildlife over the new crossing.

Naomi Kisen, Environmental Project Manager for UDOT, said federal funding was used for this important project.

“We hope it will reduce collisions significantly,” she said. “We plan to monitor the crossing for several years to see how effective it is, and we can determine how well it’s helping with public safety.”

UVU Construction Management Provides Key Training

Utah Valley University’s Department of Construction Technologies recently held a ‘Lean Planning’ training seminar on the UVU campus in Orem. Led by new Department Chair, Rob Warcup, the training was requested by the Utah Division of Facilities Management and the UVU Facilities Management teams. The training provided an interactive simulation intended to streamline construction projects, reducing time, inefficiencies, resources, and budgets.

“The benefit is that it is hands-on learning and participants feel the effects of lean on a project in a nonthreatening, fun environment,” said Warcup. “This helps them internalize the concepts so that when they conduct a pull-planning session on a real project they are comfortable doing so and know what to expect.”

This 7-hour training session included...
SALT LAKE CITY — Lee Warcup, manager of the Salt Lake City Planning Department, said the seminar provided a tremendous opportunity for all team members to interact, get feedback and see how seriously they were taking the training.

"This was a great opportunity for us to share our ideas, insights from this training and I think it will make a big difference for them and their organizations moving forward," Warcup said.

The seminar provided a tremendous opportunity for interaction for the 30+ men and women who participated. The ultimate goal was to more effectively plan a project in a collaborative Lean environment.

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When it comes to capturing existing conditions, a general initial question is “to scan or not to scan?”

With all the technologies out there, the next question is “which tool is best for the job?” Complicating the ability to answer these questions is the accelerated pace at which new technology developments and commercially available products enter the market.

When overwhelmed by choices — especially new, unproven and expensive options — we’re often moved to inaction, making it difficult to invest in proper technology. By not investing now, firms risk falling further behind their competition.

In the past 2+ years we have invested in a wide range of reality-capture technologies ranging from traditional, ground-based survey tools to terrestrial laser scanning to unmanned aerial vehicle (UAV)-mounted capture platforms. We now find ourselves flying drones on jobs that previously may have been captured with terrestrial-based scanners. Drones seem to capture the majority of headlines these days, but terrestrial, tripod-mounted LiDAR scanning is still as important as it always has been, and even more so with the increase in coordinated BIM models.

### Pros and Cons of LiDAR

#### Pros

When considering investing in the purchase and implementation of a LiDAR system, it’s important to understand the pros and cons of such an investment.

**PROS**

- **Amount of Data Captured**
  - Even some of the most basic terrestrial scanners take almost 1 million shots per second — and in color! However, don’t be fooled by the ease with which you can capture these vast amounts of data. Proper scan planning and location placement is key. Remember, successful data capture relies on a clear line of site, so, if you can’t see it, then more than likely the scanner can’t. In addition, terrestrial LiDAR won’t penetrate walls, vegetation, snow, etc.

- **Safety**
  - LiDAR scanning is much less intrusive than traditional survey, and typically faster. A recent detailed mapping scan of a large ammonia plant allowed the plant to be down for only two hours, and required us to wear hazmat suits. We were in and out in 45 minutes and captured all the information needed for proper modeling.

- **3D Models Are Superior**
  - 3D scanning hardware has been pretty simple to learn, and some devices integrate with daily mobile devices. However, it has taken some time for software to catch up to hardware and fully exploit LiDAR technology. There are several software applications available for scan registration, auto feature extraction, viewing, creating classifications, “virtual surveying,” etc. With so many options, it takes effort to determine which software is best for you. Usually you’ll need more than one software application, and each one comes with a slight learning curve.

- **Many Projects, Many Tools**
  - LiDAR isn’t a “one size fits all” tool. As such, we continuously mix terrestrial-based LiDAR scans with UAV-flown projects, or traditional survey with LiDAR- and UAV-captured data. On a recent project for an oil and gas company, we captured in detail the main portion of a building and conveyor belt with our FARO terrestrial LiDAR scanner, and supplemented those data with a flight of the 20-acre site. The combined data resulted in a detailed as-built of the focal area as well as a way for those offline to understand the bigger picture without the cost or time involved in scanning the entire project.

#### Cons

- **Steeper Initial Investment**
  - Although the prices of LiDAR scanners have gone down in recent years, a new scanner can still carry a hefty price tag. Some new systems, like the BLK360 from Leica, can get you into the scan world at a lower investment, but it comes with limitations. Know what you need before you buy it.

- **Learning Curves**
  - Scanning hardware has been pretty simple to learn, and some devices integrate with daily mobile devices. However, it has taken some time for software to catch up to hardware and fully exploit LiDAR technology. There are several software applications available for scan registration, auto feature extraction, viewing, creating classifications, “virtual surveying,” etc. With so many options, it takes effort to determine which software is best for you. Usually you’ll need more than one software application, and each one comes with a slight learning curve.

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At the outset of every project, we always work with the client to clarify the goals and desired end product, the level of detail of the model (will it be used for modeling or only planning?), and whether the client only wants/needs a 3D point cloud or a true horizontal and/or vertical as-built. Most of the time, when a client wants something “LiDAR’d,” they simply want a 3D point cloud. But it’s always good to dig deeper, ask them what the end goal is, and ask about the project’s purpose. Sometimes just a few questions can help decide what tool to use and why. There’s a huge difference between a piping system that needs to be 3D modeled in Revit vs. a piping system where they just want a good representation of the existing features.

It sounds a bit odd, but timeline, cost, data acquisition and turnover all are fairly dependent on just a few simple questions. Being impartial to any specific technology and understanding the strengths and weaknesses of different technologies in our toolbox helps us recommend the most sustainable cost-effective approach to each and every project.

#### Bringing It All Together

Think of using all these technologies like baking a cake. With the proper ingredients and techniques, you can create something amazing. But if you throw an inexperienced cook into the kitchen with shiny tools, you have a recipe for disaster.

Many people, myself included, have invested substantial time in learning technology early on, and have overcome many obstacles that you surely will face.

The market is quickly learning the pros and cons of vehicle-mounted lasers, stationary/terrestrial lasers, dual scan survey equipment, drones and so on. To avoid disappointment, or slow to non-existent ROI (and/or customer disappointments) consult with someone who has done it before, and invest in pots per if needed. Whatever you do, don’t do it alone.

Shawn Herring is a Vice President with Orem-based ProSoft, Inc.
Limitation of Liability
How to ensure your limitation is enforceable.

By Brad M. Liddell

In today’s society the term ‘LOL/’lol’ has become ubiquitous for ‘laugh out loud’ – our response via daily text messaging and emails to something funny or humorous. In the world of construction law, LOL – Limitation of Liability – is a far more serious topic, and one that can be an effective tool to businesses in limiting liability and damages.

In addition, LOL provisions limit a party’s exposure to unlimited liability disproportionate to the party’s fee on the project. LOL provisions can help parties manage their respective risk on a project given the project reward (fee, relationship, marketing exposure, etc.).

LOL provisions are also a way to allocate unknown risk; they must be drafted carefully to be enforceable. As a practical matter, most involve design professionals or subcontractors. This article is geared to A/E/C professionals, but applies generally to any LOL provision.

Not An Indemnification Provision
As an initial matter, a properly drafted LOL provision is not an indemnification provision and should not be viewed as such. It is not intended to relieve the design professional of its obligations for any errors or omissions, but rather is intended to allocate liabilities between the design professional and client.

Utah courts have clarified that limitations of liability are not indemnification provisions and are therefore not against public policy. The Utah Supreme Court has stated “indemnity, where one party agrees to answer for a specified or unspecified liability or harm that the other party might incur, is applicable to a circumstance where… the contracting parties agreed to assign the risk of loss between themselves and limit the damages available.”

Factors for LOL to be Enforceable in Utah
1. LOL Must Be In the Contract
While it may seem obvious, in order to be enforceable, LOL must be in the written agreement between the design professional and the client, hence the need for a signed contract, professional services agreement, etc.

2. Clear Intent of the Parties
Intent of the parties is typically implied where the contract is signed. Plain language of contract terms determines intentions of the parties. The LOL provision must be clear on its face and demonstrate the intent of the parties to limit the design professional’s potential liability arising from all or some circumstances. Courts generally refuse to enforce LOL provisions where the provision is ambiguous or unconscionable.

3. How Much?
Utah courts have recognized and clearly stated that contracting parties “are free to adjust their respective obligations to satisfy their mutual expectations.” However, Utah courts have not offered guidance on how much the LOL provision must be for an amount that creates an incentive to exercise due care, which has been has been interpreted as the design professional, at a minimum, risking its fee for the project.

4. Who?
Utah Code Ann. Section 13-8-2 provides that certain limitations of liability agreements violate public policy. These violations of public policy occur where a LOL provision attempts to limit third-party liability. As an example, under Utah Code Ann. Section 13-8-2, it is against public policy where an owner attempts to limit a third-party design professional’s liability through a contract with a contractor or where a contractor attempts to limit a third-party design professional’s liability through a contract with a subcontractor. Thus, a properly drafted LOL provision should only limit the design professional’s potential liability exposure to the party that the design professional contracts with, i.e. the client.

While some clients may not initially accept LOL provisions, design professionals should always try to negotiate one into contracts.

Brad Liddell is an attorney at Salt Lake-based Jones Waldo Holbrook & McDonough specializing in contract negotiations, risk management, dispute resolution, litigation, and other daily issues faced by A/E/C industry professionals. He can be reached at (801) 521-3200 or www.joneswaldo.com.
By Gerald F. Nelson

Five Reasons to Hire ‘Certified’ Low-voltage System Designers

There are many factors to consider when looking for low-voltage technology design professionals for a project team. Among these include choosing individuals with the appropriate licenses and certifications, and those who can adapt to new technological advances in an efficient manner.

Best of the BEST

A critical factor in choosing a team for effective delivery of low-voltage technology design services should be the certifications of team members. Certifications by leading, third-party industry associations are awarded to individuals who demonstrate through examination and experience that they possess the skills necessary to practice in their area of expertise, and provide a degree of assurance that the individual is qualified.

Professional engineering (P.E.) licensure is the engineering profession’s highest standard of competence, a symbol of achievement and assurance of quality and P.E. stamped drawings have been required for many years. Yet, anyone claiming to be a low-voltage systems designer is able to practice as such. This is disconcerting when one considers the absolute critical nature of low-voltage systems in modern buildings.

Increasing Demand for High Performance

Consider health care’s increasing reliance on electronic health records (EHRs). Compared to paper systems, EHR’s have many benefits. One benefit is the ubiquitous access to large amounts of clinical information. Because of the tremendous amount of information available to many users at any time, system usability and the human interface with the data are essential considerations. Users can quickly become overwhelmed and miss critical pieces of information resulting in life-threatening situations if usability is not optimized. Additionally, imagine the impact to lives if vast amounts of data were lost due to system failure or communication loss.

Less Room for Error

Not always does a low-voltage system failure result in life-threatening situations. More often, the result of poor system design is failed delivery and reception of information by industry or institutions. Business, education, and societal organizations all rely on the successful delivery of information to meet their missions. Appropriate signal transmission and image display, image display device placement and sizing, as well as acoustics, are all critical factors in the successful delivery of information that could be the difference in a company winning a multi-million dollar contract or a student mastering mathematics or a congregation feeling moved.

Credibility

The days when qualifications could be faked are gone. Today, owners require low-voltage technology system designers to be certified, and two of the most common certifications being required is the RCDD (Registered Communications Distribution Designer) and the CTS-D (Certified Technology Specialist-Design).

The RCDD certification is awarded by BICSI, the worldwide association for cabling design and installation professionals. BICSI established its credential programs to provide a level of assurance to the industry that an individual has knowledge in a designated area of information and communications technology design or installation.

The CTS-D is awarded by AVIXA (formally InfoComm), which has offered its certification program for more than 30 years. The CTS-D certification program assesses individuals against peer-developed standards and competencies and provides a credential that is time-limited. Continued competency must be demonstrated through ongoing renewal requirements. The CTS-D must adhere to a strict code of ethics and professional practice.

National & International Recognition

Both the RCDD and the CTS-D are recognized by ANSI (American National Standards Institute), which endorses North American standards, and ISO (International Organization for Standardization), which endorses global standards.

Gerald Nelson is a Principal at Salt Lake-based Spectrum Engineers with 30 years of experience designing technology systems.
The design of the new Salt Lake-based corporate office of Dental Select needed to be different, to match the cavalier, forward-thinking attitude of founder and CEO Brent Williams, who believes in doing things differently and is something of a rebel, if you will, in the otherwise complicated insurance industry.

The company’s underlying philosophy is to make dental simple. Williams is also the kind of leader that understands what it means to stand back and deliver. He allowed his creative team carte blanche with the design, to ensure the road map set early with the C-level team in visioning could be manifested.

When Dental Select’s creative team partnered with method studio of Salt Lake City to design the firm’s new corporate headquarters, they wanted a space that embodied the organization’s approach to business and its internal culture for 145 employees. The space needed to relay a “simplicity that makes you smile” and leave visitors with no question that the space is home to a group of clever rebels that make noise, ruffle feathers, and get things done.

As part of programming, method studio worked to increase efficiency to free up space for more amenity spaces – a key goal for employee recruitment and retention. Spaces were designed to be flexible, serving more than one purpose. Clean, purposeful lines were used to create continuity and flow, simultaneously injecting distinct, canted shapes that highlight key spaces. Many of these spaces were positioned in the middle of major pathways as a strategic way to provide “elevated disruption” – a key visioning concept. The organization’s newly branded “sunny yellow” was used playfully throughout the space to galvanize these paths and navigate circulation to run into the interrupting spaces, ensuring things were slightly off kilter.

Another hot button item for the new environment was to have better transparency, and do away with the sequestered executive office model employees had been living with for the past decade. Executive offices were incorporated within their respective teams with glass facades. This newfound transparency helps build trust and provides more direct connections for team members.

Earhart, Muhammad Ali, Marie Curie, serve as room names and themes for gathering and meeting spaces. The space is still set to receive an integrated branding package (currently in the works) and will add the final touches to the cheeky space.

Marbe Agee is a Principal with Salt Lake-based method studio.

**Dental Select Corporate HQ**

- **Size:** 22,082 square feet
- **Location:** West Towne Ridge Parkway, Tower II
- **Architect:** method studio
- **MEP Design:** Spectrum Engineers
- **GC:** Interior Construction Specialties, a Layton Company
- **MEP:** Rocky Mt. Mechanical
- **Electrical:** Taylor Electric
- **Millwork:** Granite Mill
- **Flooring:** Spectra Contract Flooring
- **Doors:** Architectural Building Supply
- **Painting:** Fisher Painting
- **Window Coverings:** The Right Touch Installs
- **Glazing:** Beautiful Glass, Inc.
- **K-13:** USI
- **Acoustics:** Alternative Acoustics & Drywall
- **Furnishings:** HB Design Group

**Design Viewpoint**

The floor plan above shows areas within the space that are highlighted with the striking yellow accent color. Sleek modern lines and open collaborative areas are hallmarks of the design. (photos courtesy method studio)
Horrocks Engineers marks its 50th Anniversary this year, the Pleasant Grove-based civil engineering firm finds itself at the top of its game as it begins transitioning to its third generation of leaders.

In the past three years, the firm has seen total revenues from its four Utah offices climb significantly, from $25 million in 2015 to a record $39 million in 2017. Company President Jim Horrocks says the firm’s growth has been organic over the years, with executives able to recruit and retain talented engineers into the fold from all sectors of the civil engineering industry, and by starting/acquiring offices in multiple western region markets as opportunities arose, with 14 current offices in eight states.

“Most of those expansions are a result of giving individuals a chance to succeed,” said Horrocks, 67, President of the firm since taking over the reins 20 years ago from his father and company founder Gilbert (Gil) Horrocks, 93. He points to Horrocks’ offices in Albuquerque, NM and Boise, ID, as examples of that natural growth.

“If you look at any statistics and projections, I can assure you that New Mexico is not at the top of the list (economically), but we met a great

50 Years Strong

Pleasant Grove-based Horrocks Engineers has grown into a regional powerhouse, with 14 offices in eight western states and a diverse service portfolio.

By Brad Fullmer

Horrocks Engineers founder Gilbert Horrocks (above), now 93, specialized in water resources projects during his long-time career and is renowned for his kindness. Current board members include: (standing, l to r) Jon Horrocks, Brian Ackman, Ron Mortimer, Bryan Poste; (sitting, l to r) Russell Youd, Matt Horrocks. (photos by John Niederhauser) Top: Engineers consult on SR-193 projects. Opposite: The firm designed the innovative I-15 Auxiliary Lanes/Underpass in St. George.
Gil Horrocks was born in 1925. His dream of starting his own consulting engineering firm, opening Horrocks & Associates in American Fork in 1968, finally finished his degree and gained his Professional Engineering license. In 1968, he and wife Lois finally realized their dream of starting their own consulting engineering firm, opening Horrocks & Associates in American Fork in 1968. Gil developed a passion for water resources projects, understanding the importance of reliable, clean drinking water system infrastructure to communities large and small. He is renowned for his overall kindness and genuine concern for people, and his ability to maximize people’s talents—Gil always knew each employee and their spouse—he was always looking out for everyone, said Dale Harris, a 40-year veteran of the firm. “He is the rock of Horrocks Engineers, the foundation that we have built upon.”

He has always been driven, primarily by his desire to provide infrastructure [design] for communities, as well as meeting his personal and professional goals,” said Horrocks. “He lived through the depression era, so he had great respect for infrastructure and a better quality of life for people.” While Gil specialized in water resources projects, it was Jim who deserves a lion’s share of credit for the firm’s expertise in transportation engineering, which began in the late 80s, and has progressed to the point where more than 60% of its revenues come from transportation projects.

Culture Built on Founder’s Kindness, Strong Work Ethic

Born in 1951, Gilbert Horrocks was shaped by a hardscrabble background growing up in the tiny Utah town of Arcadia in rural Duchesne County, the oldest of six children living in a two-room log cabin with a dirt floor and no running water or electricity. Non-potable water was hauled daily from an irrigation canal 100 feet from the house, while drinking water had to be fetched from a well more than a mile away. At age 13, his mother died, and Gil was thrust into the role of caregiver, often missing school to tend to his myriad chores.

At 17, he left home to find work in Salt Lake City, starting in the brickyards of Sugarhouse, and also working at places like Utah Copper (Kenebecott), Hill Air Force Base, and the state’s Soil Conservation Service, which led to him working as an engineering aid doing surveying work for diversion and irrigation structures, land leveling, drainage and construction supervision.

At age 30, Gil transferred to the Soil Conservation Service’s Murray office, which allowed him to pursue an engineering degree at the University of Utah. He and a partner formed Todd & Horrocks in 1958, and a decade later he finally finished his degree and gained his Professional Engineering license. In 1968, he and wife Lois finally realized their dream of starting their own consulting engineering firm, opening Horrocks & Associates in American Fork in 1968.

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“My intention was to do water resources and general municipal engineering,” said Horrocks. “UDOT started to outsource more work and reduce the number of state employees and let out consultant contracts. We built on one success at a time – we provided good service to UDOT and was given the opportunity to do more and more work over the years.”

With the firm thriving, and as the second decade of the 21st Century draws to a close, Horrocks realizes his time as the top executive of the firm is nearing an end. His son, Matt, 38, is part of the third generation of workers and likely will move into the top role someday, although no decisions have been made in that regard. Jim is confident Horrocks Engineers will be able to maintain its momentum and future growth long after he decides to retire.

“I’m concerned about making sure that I don’t impede the growth of generation three, that I give them the right opportunities, but as the same token I want to stay around long enough to assure there will be continued success at Horrocks.”
Modern technology has made designing and building projects out-of-state no big deal for A/E/C firms headquartered in the Beehive State, but some companies have been successful managing projects from remote locations long before the digital information age kicked into full swing in the mid-90s.

Salt Lake-based Bodell Construction is one veteran Utah general contractor who started transitioning some 30 years ago from working primarily in commercial general building to specializing in heavy industrial work, which in turn has led to more and more out-of-state projects, depending on where repeat client work takes them, and which industries are investing in capital expenditure projects.

In addition to its SLC headquarters, Bodell has offices in Casper, Wyoming and Honolulu, Hawaii.

"Since I’ve been with the company (2002) we’ve been mostly active in the heavy industrial space; we began that shift in the late 80s," said Mike Bodell, Executive Vice President, whose father Michael Bodell Sr. and grandfather James Bodell founded the firm in 1972. "Over time the transition has seen us specialize in and place greater focus more to heavy construction. Our construction team can build just about anything; we’d rather focus in the heavy space because we offer differentiating competitive advantages to those markets as a value-oriented, specialized service provider."

Bodell said the types of projects in the firm’s wheelhouse include those with a manufacturing or purifying process or energy/product output, like power generation, oil and gas refineries, petro-chemical plants, and water infrastructure – projects with highly complex mechanical and electrical processing systems not found on typical commercial buildings.
Reach of Utah Firms

Bodell said, with some 80 maintaining full-time, year-over-year employment. These are the highest caliber of craft labor, workers who consistently perform technical, yet physically demanding work at the highest levels of quality and safety.

“They are aware of what our company is doing - their primary motivator is financial, but they do like working for us for a multitude of reasons,” he said. “For another 100 (workers), we’re one of their favorite three or four companies. It depends on the kind of work, the location, anticipated weekly hours in the work schedule. We get calls all the time from people who want to get their name in our database.”

Bodell said the firm works primarily as a general contractor and is adept at all project delivery types, and also works as a design-builder, specialty subcontractor, or partners with other firms on large joint-ventures.

“We see ourselves as a unique service provider because of our diversity of experience, and our resistance to operating as a commodity/low-bid contractor,” said Bodell. “We’re competitive, but we prefer not to work in solely low-bid, commodity environments. Projects go well when we appear as early in the process as possible and we lead the project, because we want to fully understand client need and foster those relationships.

“We still see general contracting as our most frequent delivery method,” he added. “The more we’re involved with the design team, the better a project is going to go. I think most clients would say that, too. Whether a client puts us in charge of the delivery method like design build, or even if they bring us in early in the cycle as a partner to collaborate with the main engineer during the design phase to consult on constructability, that’s always better than bringing us in later.”

Bodell opened its Mountain Plains Division office in Casper, Wyoming in 2012, with a focus on the region’s energy resources clients, including projects for natural gas/power plants, oil/gas midstream projects, meter stations, pump stations, compressor stations, pipelines and industrial warehouses.

The company is close to finishing its first ever project in Alaska, an $8.7 million contract working as a subcontractor to Seattle-based Osborne Construction on the E1E 406 Arctic Utilidor project at Eielson AFB in Fairbanks.

“The trend we see with our clients is transitioning, upgrading or expanding their facilities to provide cleaner products,” says Dave Freston, Bodell’s Director of Client Services. “Oil, gas and mining are still commodities and clients often add infrastructure due to increased market demand.”

Locally, the firm is close to finishing the Brigham Young University Co-Gen Plant in Provo, a critical $35 million campus infrastructure improvement and one of the more significant projects the firm has built in Utah in recent years.

A renewed, more concentrated focus on municipal and infrastructure projects, and the recent hiring of a new project director, is expected to yield future work and bolster future project backlogs.

“We’re working more in state than we’ve done in a long time,” he said. “Because of our expertise there isn’t always consistent work for us in state. We’re trying to keep more of a local presence and we can do that with an emphasis on infrastructure, municipal, military and federal government work. Our work in Alaska is an example of that.”
St. John’s Bullish on Future in Utah County

Maryland-based firm’s Valley Grove is a 62-acre master-planned development in Pleasant Grove will feature $300 million in capital investments, including six major office buildings and other mixed-used projects.

By Brad Fullmer
Baltimore-headquartered St. John’s Properties is a great example of a well-established, out-of-state commercial developer recognizing Utah’s vast development potential by establishing an office in Utah on sheer speculation and rolling the dice.

Daniel Thomas, a Partner with St. John’s for more than 11 years, established the firm’s office in Pleasant Grove in 2014 after spending seven years working under founder Edward St. John (he established the firm in 1971) in Maryland, where he researched different markets for two years before settling on Utah County.

In July, the firm was named 2018 ‘Developer of the Year’ by NAIOP, the Commercial Real Estate Development Association – the association’s top national honor.

“Given the outstanding and highly-deserving commercial real estate companies competing for this award on an annual basis, our entire organization takes great pride in this achievement,” said St. John in a statement. “I am particularly proud of the work ethic we have instilled into our loyal employees, which places the daily real estate needs of our clients as our number one priority. This national recognition validates our corporate culture of performing to the best of our ability each day and doing what it takes to get the job done right.”

Thomas said Utah’s top-ranked population growth (over 2% the past three years), youthful demographic and >>

Owner Spotlight: St. John’s Properties

“I like that Utah is growing. Whenever you’re adding bodies to a market it takes away risk from what we’re doing. The fact that the market is growing means the product will be absorbed over time without risk.”

– Daniel Thomas

Luxurious interiors at Grove Tower are highlighted by a 30 ft. x 9 ft. LED screen that plays a loop of dramatic Utah scenery, giant 5 ft. x 10 ft. marble-like floor tiles, and rich wood veneer finishes. (photos courtesy “Corey Middleton, Architect/Photographer, Beecher Walker”)
business-friendly environment all factored into the firm’s decision to invest in the Beehive State, evidenced by Valley Grove, a multi-phase, 62-acre master-planned development just east of the Pleasant Grove Blvd./I-15 interchange that ultimately will include 1 million SF of space in six major office buildings, eight different retail sites and 10 additional pad sites. The anticipated $300 million investment is expected to generate $800 million in tax revenue for the state, county, and city, while hosting 7,000+ employees.

“Ed and I are partners, we boiled it down to three markets – Seattle, Portland and Salt Lake, and when it came to making the decision, I picked Salt Lake because of regulatory and business environment and the fact that the population is growing with natural (in-state) growth. We’re a speculative builder, we didn’t have anything pre-leased, no financing, we just started building. We put $35 million into the project before we got any financing. We figured we had this great location that other developers had passed over.” Projects include Grove Tower, a 390,000 SF, six-story Class A office building, and Grove 1, a 210,000 SF office building that broke ground in July and should be completed by August 2019. Designed by Beecher Walker Architects of Holladay and built by Jacobsen Construction of Salt Lake, Grove Tower’s entrances and dramatic six-story edges create angular cutouts that capture natural and man-made light in unique ways. Materials include gunmetal gray and warm wood-colored metal panels – in addition to walls of glass – that reflect and aid in the play of light coming into the spaces of the building at all times of the day. The sensory experience continues into the two-story lobby where visitors are greeted by a sea of reflective finishes juxtaposed to matte ones. The 30’ X 9’ LED screen on the opposite wall can’t be missed as it plays a continual loop of iconic and dramatic Utah scenery. High-end finishes continue with 5 ft. x 10 ft. light-colored, marble-looking floor tiles, the largest of its type available, surrounded by smaller, matte porcelain tiles, which offers a subtle contrast in light reflection. Poured-in-place GFRC panels encasing the elevator have a polished black finish, offering yet more dramatic design contrasts.

St. John’s boasts a notable development portfolio with more than 18 million square feet of space in eight states spanning three regions, including office, flex/research, warehouse and retail, in addition to residential units. Besides Maryland, it has offices in Louisiana, Pennsylvania, Virginia and Wisconsin, Colorado and Nevada are western locations besides Utah. Thomas expects the local economy to hum along, both short- and long-term, and said St. John remains bullish on his Utah investment. “He loves it - he’s spending a lot of money out here and is pretty happy with it.”

“I like that Utah has been growing,” he added. “Whenever you’re adding bodies to a market it takes away risk from what we’re doing. The more new bodies, the more people eating at your restaurant. The fact that the market is growing means the product will be absorbed over time without risk.” He also has enjoyed the relationships he’s built with local contractors and designers, and said St. John’s as a company does well managing the construction of its own projects.

“As we track our construction pricing, we do $400 million a year in new construction. We’ve been able to control our pricing better than some of our competitors. We offer net 10 (10-day) payment to our subs; it’s allowed us to control our pricing. We show a lot of fidelity to our subs that take care of us and we give them a lot of work.”

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Imagine printing bid set renderings and brand image logos all at the same price as black & white. Print up to 30 sheets per minute. All of this and more is possible with PageWide.”
Collins Enjoying Twilight of Career

By Brad Fullmer

A
er nearly four decades as a professional engineer, Michael Collins of Draper-based Bowen Collins & Associates (BC&A) has scaled back to half-time work at the firm he co-founded in 1997, enjoying a more relaxing pace working directly with clients and not worrying about the day-to-day nuances of managing a firm with 19 partners and 70 employees in three offices (St. George and Eagle, Idaho are the others).

Collins, 62, is a native of Caldwell, Idaho and attended Utah State University in Logan, graduating with a Masters in Civil Engineering in 1979. He took a job in Boise with CH2M Hill in 1980 and ended up moving to the Salt Lake office, taking over as manager in ’88. Collins grew that office from three people to over 100 by the time he left in ’97.

He knew Larry Bowen, who worked for another local civil firm, and had tried to hire him in the past. Ultimately, Collins and Craig Bagley (another CH2M Hill engineer) convinced Bowen to team up in starting BC&A. Their collective experience with water districts and municipalities made the firm viable within a couple of years and an immediate contributor to Utah’s water resources infrastructure.

“Probably 70% of our work is repeat clients,” said Collins. “You keep (clients) by doing good work and delivering projects on schedule. Our goal is to make our clients’ managers look good in their organizations.”

Collins points to BC&A’s culture as a reason the firm is able to retain its best engineers.

“Our philosophy has always been to hire good people, spoil them rotten, and let them do their job,” said Collins. One of the annual incentives (10 years in a row now) is a company-paid trip – this year’s destination is Maui.

Collins has designed several large infrastructure projects in his career, including the $125 million Jordan Basin Water Reclamation Facility for South Valley Sewer Improvement District, the first plant owned/operated by the District, and he worked on the Master Plan for system improvements for the Metropolitan Water District of Salt Lake and Sandy – a $300 million project spanning several years.

These huge infrastructure projects will serve Utah communities for decades to come.

The biggest satisfaction is I’ve worked on a number of huge projects for the state that will be in place for (many) years, so I’ve had some impact on the infrastructure,” said Collins. “The enjoyment of engineering is figuring something out on a piece of paper and seeing it built.”

“Mike is visionary and has always led by example,” said Bagley. “He has expectations – he expects a lot out of those that he works with, and is passionate about exceeding client expectations. He has mentored a lot of engineers who are now becoming leaders in the firm.”

“That’s how you keep good people – you have to get them involved in the firm,” added Collins about BC&A’s status as an employee-owned firm. “We have a broad ownership base.”

Collins Enjoying Twilight of Career

Bowen Collins & Assoc. co-founder Michael Collins is nearing 40 years as a professional engineer. He’s designed many important water resources infrastructure projects in Utah, including the Lower Steinaker Canal Enclosure for Uintah Water Conservancy District (below), the Point of the Mountain Aqueduct for MWDSLCS (opposite, left), and the Provo Reservoir Canal Enclosure. (portrait by Dana Sohm; project photos courtesy BC&A)
Carl Tippets likes to run. A lot. Running gives him an emotional outlet, a way to climb into a comfortable zone and contemplate life’s challenges, or ponder the best way to tackle his daily/weekly to-do list. By his estimation, the 65-year-old President/CEO of Murray-based Pentalon Construction has run 94 marathons and 88 ultra-marathons to date, all in the past dozen years since taking up the sport in 2006 at the behest of Joe Larsen, a persistent electrical contractor (and now close friend) who did work for Tippets and kept asking him to go on a run.

“I run a lot, and I don’t run to cross the finish line,” said Tippets. “It’s a great release for me and I’m able to solve a lot of problems on long runs. You run for the experience – the journey is what it’s all about. And I’m still on the journey. I’m not close to approaching the finish line.”

Tippets views his role at the construction company he founded in 1993 – one that has averaged nearly $100 million annually the past three years ($93 million in 2015, $98 million in 2016, $97 million in 2017, good for No. 10 among commercial general builders on UC&D’s list of 2018 Top Utah General Contractors) – in the same light. As Pentalon celebrates its 25th anniversary this year he knows a succession plan is needed, even though he intends to remain in charge well into the next decade.

“If you want to build a successful project, you better hit it hard. If you want to build a successful company, you better still keep hitting it hard,” said Tippets. “I would hope to be associated with Pentalon in some capacity for as long as I can, but there has to be a next generation in place in three years – that’s what my timeframe is.”

Riding the Wave Through Good and Bad Times
Tippets put himself through college working for Alder Construction of Salt Lake, and contemplated law school before realizing it wasn’t a good fit. He ultimately...
Pentalon Construction 25th Anniversary

Projects like the District North Apartments in Salt Lake showcase the firm’s ability to build state-of-the-art, multi-faceted buildings with stylish, high-end finishes.

Pentalon has built a stellar reputation for delivering well-built, high-end multi-family projects in a timely fashion, with more than 6,000 units built in the past decade. In 1993 he launched Pentalon Construction, confident in his ability to navigate the fast-paced, highly cyclical multi-family market, which led to work in other commercial markets including healthcare, resort/hospitality, office/retail, and institutional.

“You have to be optimistic or you don’t get into business for yourself,” Tippets said about his decision to become a commercial GC. “The transition from RK to Pentalon was not that different – paying the bills became the fundamental difference. It was a matter of chasing and finding a job, and we could find small jobs at that point. Where you get scared is hiring the first overhead employee. When you’re a small contractor most issues become code and constructability issues. When you grow in size, you start having banking and bonding issues, and it’s a whole different world.”

Pentalon has built a stellar reputation for delivering well-built, high-end multi-family projects in a timely fashion, mainly along the Wasatch Front, with more than 6,000 units built in the past decade.

As the company grew in size and ability during its first five years, Tippets became active in the Utah Chapter of the Associated Builders and Contractors (ABC), serving on its Board of Directors for several years, including Chairman in 2000-02. He sees tremendous value in participating in local trade associations and appreciates the friendships he’s developed.

Like many local commercial contractors, Pentalon saw revenues peak in 2006-08, followed by 3-4 years of essentially surviving, with Tippets saying, “we lived off our balance sheet for a while - it was a tough time.” Revenues bottomed out at $12 million in ’11, with the rebound beginning in ’12 ($26 million) and ’13 ($41 million), before spiking to $34 million in ’14.

The firm’s operations also essentially switched gears post-recession, becoming a CM firm rather than a general contractor that self-performed a significant amount of work on a project. “At one point we had 130 employees and did concrete, framing, excavation, painting, finished carpentry – we dabbed in all of it, ” said Tippets. “About 10 years ago, as the market was transitioning, we became a construction management firm.”

In 2009, Pentalon brought Cy Waldron on board as its Construction, confident in his ability to manage of Salt Lake, where he oversaw the construction of 3,000+ units.

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Tippets said he and Larsen run about three days a week on average (mixing in some swimming for diversity), and have traveled to many places together competing in marathons and various endurance events, including the famed Ironman Triathlon in Hawaii (Larsen has done 24 of them; Tippets is at 10, and counting).

“We have a good relationship,” said Larsen. “I met him about 15 years ago and every time I see him, I’d say ‘you want to go running?’ Finally he did so, and he’s been running ever since. It’s our way to get away from reality, to talk about everything.”

Tippets added, “It’s taken me to all kinds of places – Hawaii, Colorado, the Wasatch 100 [in Utah] is a great run [he’s done it five times]. Joe convinced me to run a marathon [his first was the Ogden Marathon in 2006], my wife [Michele] wants to know when I’m going to finish the marathon,” he laughed.
From 2010-2012, St. George-based Watts Construction found itself mired in the same boat as many other commercial contractors at that time in Utah, trying to navigate through a choppy, unstable construction market left in tatters by the recession.

Doug Watts, current company President/CEO and the son of founder Richard Watts, served on the board of the Associated General Contractors of Utah during that time prior to his one-year stint as AGC Chairman in 2013. He credits that time – one that had him rubbing elbows with top executives from some of the biggest general contractors in the state – for boosting his morale and reviving his motivation to get Watts Construction back on track.

"The AGC was a real motivator for me," Watts recalled. "I remember driving up to Salt Lake for board meetings, wondering if I was going to be the only contractor to close up shop while serving as the Chairman of the prominent association. Just being around people like (AGC President/CEO) Rich (Thorn), Rob Moore, Randy Okland, Doug Welling – all of those guys were very kind to me and respectful. I give AGC a lot of credit, at least helping with my attitude."

"It boosted his confidence to be around those people at AGC and for him to be in that important position, and also to hear that everybody at that time had similar struggles," said his daughter, Annie Howell, who serves as Chief Financial Officer and joined the firm in June ’99.

In the eight-year period from 2010-17, Watts’ revenues grew steadily over the first four years with surprisingly good gross margins despite the slow economy. In 2016, revenues grew by 25%, while 2017 was the second largest year in Watts’ history in terms of revenues ($36 million) and net profit.

In addition to Watts, who turns 62 in October, and Howell, 42, a third family member, Watts’ nephew Chris Boudrero, 43, started with the firm in 2000 and is currently its Chief Operating Officer, overseeing all field operations.

Having a third generation of Watts’ family members in place makes the company primed to be a major player in the commercial building market for decades to come, especially with the hard lessons learned bouncing back from the recession.

North to South: Cache Valley Roots, Long-time Dixie Presence

Watts Construction was founded in 1969 as the largest commercial general contractor with headquarters in St. George (Utah’s sixth-largest city), Watts Construction has built numerous key public and private projects throughout Southern Utah and the surrounding region. The firm has thrived historically in a host of markets, including hospitality/resort, commercial, office/retail, industrial and municipal. (photos courtesy Watts)

As the largest commercial general contractor with headquarters in St. George (Utah’s sixth-largest city), Watts Construction has built numerous key public and private projects throughout Southern Utah and the surrounding region. The firm has thrived historically in a host of markets, including hospitality/resort, commercial, office/retail, industrial and municipal. (photos courtesy Watts)

NIFTY FIFTY

Optimism runs high at St. George-based Watts Construction as it marks 50 years, third generation of family leaders poised to take the firm to greater heights in the future.

By Brad Fullmer
1964, in Logan by Doug’s father, Richard. Watts, who incorporated the firm in 1968. Richard’s father, Conley Watts, owned and operated a lumber yard – Cache Valley Builder’s Supply – so Richard grew up around construction and realized at a young age its career potential. Richard, 82, started out building residential homes for a short time before switching his focus to commercial projects and finding success in markets like office, retail, higher education and K-12 from ’68-’81. By the end of the 70s, business was rolling along nicely for the senior Watts, who had also started building/developing condominium projects at Deer Valley. When the savings and loan crisis hit, Richard saw the value of his investments plummet, and he was forced to liquidate all assets and re-evaluate the future of Watts Construction. “We had the world at his feet, but that Park City deal knocked him out,” Watts said. “He came to St. George to start over. He didn’t feel bankruptcy, he was able to negotiate his debts and pay them off, which is admirable.”

Richard said his decision to relocate to Southern Utah was partly due to his desire to escape inclement winter weather conditions and having better year-round building conditions, even during the region’s blistering hot summers. “(Weather) had a lot to do with it,” said Richard. “I had a close friend who owned property down here so we moved to St. George. It was one of the best decisions we’ve ever made.”

Doug worked for his father as a youth during summers, spending time in the company ‘boneyard’ pulling nails out of boards or sweeping shop floors, before moving on to carpentry and concrete work. Doug gained valuable experience working for other firms from ’80-’85, mainly building and remodeling homes, including two-plus years in Oregon in ’82 when he got married, went to school and worked for Red Hat Remodeling, and another two years (’83-’85) as a superintendent in Salt Lake.

In 1985, Doug and his family moved to St. George as he re-joined his father at Watts Construction, quickly moving into the role as its top field superintendent for eight years before coming into the office full-time in ’93. Watts credits his father’s confidence, upbeat nature, and ability to sell himself as the primary reasons for the company’s success over its first three decades in Southern Utah. Business was slow during the early years, with Richard landing some condo projects at Brian Head Resort, along with some projects for St. George Federal Credit Union and other local businesses. “We were doing 3% of the volume we had previously done, but it was enough to keep us going,” Richard recalled. “We made it work economically.”

In 1992, a developer from California came to St. George looking at building a sizeable retail project. With Watts as the only significant local commercial builder at that time, Richard negotiated with the owner and ended up constructing the now-iconic Zion Factory Stores and The Promenade on River Road just east of I-15, a milestone project, one that cemented the firm’s reputation in the historical context of Washington County growth.

The company started also started delivering projects via design build and construction management by bringing an architect in-house. Richard said he started doing design-build work in northern Utah after learning about it through an AGC seminar in the 70s. As Southern Utah’s population swelled – Washington County nearly tripled in size from 1990-2010 (48,500 to 138,000 people), Watts’ revenues eventually peaked at $50+ million in 2007 and 2008.

One of the hallmarks of the company over time has been its ability to work in different markets – office, retail, municipal, industrial, hospitality – depending on which ones were most active. Prosperous times would not last, however, and the housing market crash/recession in ’08 had a particularly damaging effect on the greater St. George area, beginning a difficult five-year period. In 2010, a leadership change was made as Richard was bought out, and the firm struggled despite harsh economic conditions.

Howell remembers those difficult times, and credits her father’s resolve in steering the firm through that period: “He’s tenacious in his own way, he’s passionate about our reputation for doing a good job.”

“I remember clearly Doug making that 300-mile trek often in ‘13, in some cases several times a month to carry out his responsibilities as Chairman,” said Thorn. “They’ve been able to weather hard times and turn those hard times into a learning experience. They are a well respected contractor across the Intermountain West, they should be proud of the legacy they’ve created.”

Boudreiro credited the firm’s reputation with repeat clients for getting them through those trying years at the beginning of this decade and is confident in his and Howell’s ability to keep building the firm, even after Doug begins his transition into retirement sometime in the next 5-7 years. “We’re trying to grow right now, but stay lean,” said Boudreiro. “Risk management is a big factor – we haven’t extended ourselves too much. We went from doing design-build to straight bid jobs, but we’re really good with our vetting process and how we assess the job. We’ll take calculated risks. We see some big projects coming to St. George and we’re excited about the future.”
Third Generation and Beyond

Although he hasn’t been involved with Watts Construction the past eight years, Richard has kept tabs on the activities of the firm he founded a half century ago, and is thrilled that it’s set up to remain successful heading into a third generation of Watts family members. He gives Doug, Annie and Chris a tremendous amount of credit for steering the firm through the recession, and rebuilding it back to where it was a dozen years ago.

“You don’t see that happen too often,” he said. “It’s not a high percentage chance that the son is going to come in and take it over, and do anywhere near to what the old man did. But he’s done better – he’s run the company in a successful way and he’s doing a lot of business. It appears he has a couple of good ones in Annie and Chris. They’re very talented.”

Richard paused when asked about the legacy of Watts Construction, now running three generations deep over half a century.

“It’s extremely gratifying, because when you’re going through it – the 70s, 80s, and 90s – you’re really not thinking about that stuff – it just doesn’t enter your mind until you’re ready to step down and retire,” Richard mused. “Frankly, it’s been a pleasant surprise. They have the talent, but you need more than talent to make it work.

“We’ve been lucky,” he added, “and we’ve had the right people. Success of the operation has been the people and the business you’re operating, whether it’s a small business or a large business. You don’t have the right people you’re not going to go anywhere near to what the old man did. But he’s done better – he’s run the company in a successful way and he’s making the firm’s future.

“Annie and Chris have a great accomplishment.”

Richard finds it interesting to watch out. He’s the local guys – we can do anything the biggest contractors in the state can do, in terms of service and project delivery. No fear!”

Watts Construction 50th Anniversary

Richard Fullmer at lmarshall@utahcdmag.com AND bfullmer@utahcdmag.com. Questions may be emailed to Ladd Marshall AND Brad Fullmer at lmarshall@utahcdmag.com AND bfullmer@utahcdmag.com.

All entries must complete the submission overview document. This document may be found at www.utahcdmag.com/events. Entries should be submitted electronically, either by email/mail delivery service (such as DropBox/You Send It, etc.). Submissions emailed should be sent to: lmarshall@utahcdmag.com AND bfullmer@utahcdmag.com. Questions may be emailed to Ladd Marshall AND Brad Fullmer at lmarshall@utahcdmag.com AND bfullmer@utahcdmag.com.

UC&D will host an Outstanding Projects Awards Breakfast, Tuesday, Dec. 11 at Little America Hotel. Registration from 7:00-8:20 A.M., Breakfast at 8:20 A.M. sharp. Program will run from 9:00 A.M. To 10:30 A.M.
I might be apropos to say the design and construction team had to ‘think outside the box’ on the new $275 million ($80 million construction cost), 840,000 SF UPS Regional Hub facility at 380 South 6400 West in Salt Lake City – the firm’s largest hub in the northwest, and one of the largest ever ‘big box’ projects to grace the Beehive State.

The project is a notable investment to the local economy by the international shipping behemoth, as it creates more than 1,500 jobs at this 160-acre site that will process some 69,000 packages – per hour(!) – within a facility that functions as one massive integrated machine, designed to streamline all aspects of the distribution process. The facility is a precursor – the first of what is likely to be many future projects in this area – for the northwest quadrant of Salt Lake, transforming it from a sheep/horse pasture into what will ultimately be an internationally recognized Inland Port, solidifying Utah’s century-old claim as the ‘Crossroads of the West’ and strengthening its economic base.

Poor soil and groundwater conditions challenged contractors from the outset, who came up with a soils remediation plan that included 31,000 CY of grubbing, moving 270,000 CY of earth, and adding 802,000 tons of imported structural fill and compaction.

Tilt-up concrete panels are 25-feet high (clear height), and Layton crews placed an average of 40 panels per day, with a one-day record of 50 panels. The facility’s central core parcel receiving building is connected to five outbound distribution buildings with a complex conveyance system. The system is operated and supported by a decentralized network of 32 independent office areas within the larger hub. Interwoven into the three-dimensional field of conveyors, these “buildings within the building” house a central automated hub control center, administrative offices, engineering and maintenance, locker rooms, etc. Interior office pods are stand-alone spaces that required their own footings and shear walls – essentially separate structures within the main building.

Hunt Electric of Salt Lake installed a 12mw substation for the facility’s massive electrical requirements. During preconstruction, Hunt’s survey team captured accurate underground as-builts to help pre-determine the best routes for laying conduit during the underground phase. The perimeter of the building is approximately 1.3 miles, with the cumulative length of joists measuring an astonishing 23 miles. All joist and decking sections were pre-fabricated on the ground and lifted into place, improving schedule, safety and quality. Hunt also pre-installed interior and exterior wall conduit prior to tilt-up, which helped expedite the schedule.

“It was cool being part of a project of that size and scope, with such a tight schedule,” said Michael George, Project Manager for Layton. “The poor soil conditions were one of the hardest parts of the job. The subcontractors really stepped up.”

According to David Anderson, Principal-in-Charge for Salt Lake-based Babcock Design, design aesthetics operated on two scales. The Guard House and Customer Counter are the two ‘outward-facing’ buildings that interface with employees and the public, respectively. These components provide comfortable, inviting areas – collaborative spaces for people to talk/mingle – in addition to promoting the UPS brand.

“From the very beginning there was a unique and pervasive culture of problem seeking and problem solving. Every assumption was critically challenged and evaluated to see if there was a better solution.”

David Anderson, Principal, Babcock Design
through design, graphics and service. On a larger scale, the brown and gold arcs abstracted from the iconic UPS logo adorn the end of each wing, visible from both the Interstate and on the flight path into the Salt Lake International Airport. The graphic termination to the otherwise crisp, white building wings has become a standard that UPS will incorporate on future projects.

Anderson said there were “numerous unique qualities about this project” including the design-build process that required phased permitting and close coordination between designers and contractors throughout.

“From the very beginning there was a unique and pervasive culture of problem seeking and problem solving,” said Anderson. “Every assumption was critically challenged and evaluated to see if there was a better solution – shorter construction times, lower cost, better functional value to UPS. That process of continuous improvement was initiated by UPS, and executed by the entire team.”

Construction was completed in late spring; the facility is expected to be fully operational in November.

**UPS Regional Hub/Parcel Distribution Facility**

- Location: Salt Lake City
- Cost: $275 Million
- SF: 840,000
- Owner: United Parcel Service

**DESIGN**

- Architect: Babcock Design
- Civil: Dominion Engineering

**ELECTRICAL**

- Mechanical: David L. Jensen & Assoc.
- Structural: Dunn Associates

**CONSTRUCTION**

- GC: Layton Construction
- Electrical: Hunt Electric
- Mechanical: DB Mechanical
- Plumbing: Chaparral Plumbing
- Earthwork/Utilities: Newman Construction
- Tilt-up Concrete: Robinson Bros. Construction
- Masonry: IMS Masonry
- Precast: Olympus Precast
- Drywall: Standard Drywall
- Roofing: Superior Roofing & Sheet Metal
- Painting: Universal Painting
- Steel: Wasatch Ornamental Iron
- Rebar: Western States Rebar Fabrication
- Concrete Paving: Geneva Rock
- Asphalt: Morgan Asphalt
- Truck Entrance 
- Customer Center
- Employment Center
- Employee Parking

*UPS Regional Hub*
Far too few businesses are using big data to support their decision making. In January 2018, a senior analyst with Forbes revealed that business competitors are using data to come after your customers. The Harvard Business Review surveyed Fortune 1000 business executives and found the most common reasons for using big data were to decrease expenses, improve operational efficiency, make more informed decisions, and increase revenue. And 80% say their investments in big data are successful. Basing business decisions on big data is great—except when it’s not. Basing high stakes decisions on poor-quality research is a recipe for financial disaster.

Here are some of the most common big data errors we see:

1. Misleading statistics. You may remember the advertisements claiming 80% of all dentists recommend Colgate toothpaste, leading the consumer to believe 20% of the dentists recommended different brands. The truth, though, was that when the dentists were surveyed about the toothpastes they recommended, they were allowed to identify all of the brands of toothpaste they would recommend, other brands could have been equally as or more popular than Colgate.

2. Failure to test the survey questions. It’s easy to create a set of survey questions and send them out through SurveyMonkey or Qualtrics. But if you haven’t pretested and piloted the questions, you can end up with questions that make sense to you—but not to the person taking your survey. Recently, we were asked to complete a survey about our spending on wine purchases made at wineries. Unfortunately, it was unclear whether our spending was to include—or exclude—wine purchased from the winery as part of a wine club membership. Had the survey been pilot-tested, this flaw would have been quickly identified and corrected before deployment.

3. Biased interpretation of findings. It matters who does the analysis of survey responses to open-ended questions. This is especially true when a survey is conducted in-house because it is difficult for staff to separate themselves from the data. Unless your team has a staff member specifically trained in eliminating bias, it’s better to outsource your research.

4. Lack of candor from survey participants. Your customers generally do not want to hurt your feelings. They are not going to tell you directly your annual customer appreciation event is a dud. This is especially the case where staffing is concerned—and even more so if the staff person administering the survey is also the source of dissatisfaction.

5. Failure to collect data. Fewer than half of all businesses collect data at all. In retail businesses, many do not have any idea how many customers come through the door each day, which means the average sales per customer is also an unknown. You can get a ballpark idea using a people-counting electronic system. Sure, the UPS or FedEx carrier may walk through each day, as may staff, but that number will be fairly consistent and you will have a tangible way to measure growth in the number of customers coming through the door. And you’ll know which staff members are doing the best job selling your product and which may need additional training—or a new line of work.

Chris Cook is the founder of Capiche, a firm specializing in custom marketing and branding. Visit capiche.us for more information.
Utah-based engineers by-and-large enjoyed prosperity last year based on an analysis of reported 2017 revenues by engineering firms in UC&D’s 2018 Top Utah Engineering Firms rankings. Of the 20 firms to disclose revenues earned from Utah-based offices in 2017, 19 other firms submitted surveys without disclosing revenues and are ranked per number of employees, 15 reported an increase from the previous year. Civil engineering firms ranked 1-10 of the top 12 spots, led by Horrocks Engineers at $39 million (up from $32 million), HDR at $35.4 million (up from $32 million), Michael Baker Int. was fifth at $17.1 million (a $2 million increase from $19.6). MEP firm Van Boerum & Frank Associates claimed the fourth overall – and top MEP – spot at $14.8 million (up from $14.3 million). Water was a strong market for Sunrise Engineering ($12.5 million), Terracon at $10.6 million, and Stanley at $11.3 million, and Spectrum Engineers was sixth at $11.2 million.

Civil firms claimed positions 7-12, with Jones & DeMille at No. 7 with $13.8 million, followed by Sunrise Engineering at $12.5 million, H.W. Lochner at $12.2 million, WSP at $11.3, Terracon at $10.6, and Stanley at $9.6. Of those firms, WSP had the biggest growth (a $5.2 million increase).

Structural firm Reaveley Engineers was at No. 10 with $8.4 million, followed by BNA with $6.7 million, Michel Engineering ($6.2 million), Wilson & Company ($4.9 million) and Dunn Associates ($4.6 million) IGEs ($4.5 million), Pismac ($4.4 million) and Royal Engineering ($3.6 million) closed out the rankings. The six firms who did not disclose revenues include: one civil firm (Ensign Engineering), three structural firms (BHB), J.M. Williams, Calder Richards), two MEP firms (Envision, Heath).

A Look at Top Markets
Transportation work was plentiful last year, with Highway roads, bridges, etc. being the top market for 9 of 14 civil firms: Horrocks (64%), WSP (64%), H.W. Lochner (60%), Michael Baker (53%), Jones & DeMille (40%), WSP (66%), Stanley (88%) and Wilson & Company (87%). Water was a strong market for Sunrise (39%), Jones & DeMille (36%), Stanley (34%), Pismac (20%) and Ensign (17%).

For non-civil firms, the top markets were Healthcare, Higher Ed, Civic/Institutional, Office, and Retail: VBFA was strongest in Healthcare (25%), Higher Ed (15%), Retail (13%) and Office (24%), while Spectrum reported significant revenues from Healthcare (22%), Office (19%) and Civic/Institutional (14%). BNA’s top markets were K-12 (26%) and Civic/Institutional (24%). J.M. Williams, Calder Richards was strongest in Multi-Family (30%), Jones & DeMille (30%), Stanley (10%) and Royal Engineering in Healthcare, Higher Ed, Civic/Institutional, Industrial (53%) and Office (24%).

Among non-disclosing firms, BHB’s top market was Healthcare (29%), while J.M. Williams reported Industrial (13%) and Office (15%) as its most fruitful markets last year. Envision posted strong numbers in K-12 (28%) and Higher Ed (21%). Calder Richards had K-12 as its top market (29%).
## Top Overall Engineering Firms

<table>
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<tr>
<th>Firm Name</th>
<th>Address (HQ)</th>
<th>Phone</th>
<th>Website</th>
<th>Annual Revenues (millions)</th>
<th>2017</th>
<th>2016</th>
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<tr>
<td>Sunrise Engineering</td>
<td>25 E. 500 N. Fillmore, UT 84631</td>
<td>(435) 996-7813</td>
<td><a href="http://www.sunrise-eng.com">www.sunrise-eng.com</a></td>
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<td>H.W. Lochner</td>
<td>3995 S 700 E #450 SLC, UT 84107</td>
<td>(801) 715-5223</td>
<td><a href="http://www.hwelchner.com">www.hwelchner.com</a></td>
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<td>488 E. Winchester St. #400 Murray, UT 84107</td>
<td>(801) 362-2375</td>
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<td>Terracon Consultants</td>
<td>6849 S. High Tech Dr. Midvale, UT 84047</td>
<td>(801) 545-8500</td>
<td><a href="http://www.terracon.com">www.terracon.com</a></td>
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<td>$8.9</td>
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<tr>
<td>Firm Name</td>
<td>Address (HQ)</td>
<td>Phone</td>
<td>Website</td>
<td></td>
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<tr>
<td>18. IGES, Inc.</td>
<td>2702 S. 1030 W. #10</td>
<td>SLC, UT 84119</td>
<td>(801) 270-6949</td>
<td><a href="http://www.iges.com">www.iges.com</a></td>
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<tr>
<td>19. Psomas</td>
<td>4179 Riverboat Rd. #200</td>
<td>SLC, UT 84123</td>
<td>(801) 270-5777</td>
<td><a href="http://www.psamcs.com">www.psamcs.com</a></td>
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<tr>
<td>21. Ensign Engineering</td>
<td>40 W 1000 S. #100</td>
<td>Sandy, UT 84070</td>
<td>(801) 255-0529</td>
<td><a href="http://www.esignutah.com">www.esignutah.com</a></td>
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<tr>
<td>22. BHB Consulting Engineers</td>
<td>2786 S. Main</td>
<td>SLC, UT 84115</td>
<td>(801) 355-5656</td>
<td><a href="http://www.bhbengineers.com">www.bhbengineers.com</a></td>
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<tr>
<td>23. J.M. Williams &amp; Assoc.</td>
<td>929 W South Jordan Parkway, South Jordan, UT 84095</td>
<td>(801) 975-6455</td>
<td><a href="http://www.jmwa.com">www.jmwa.com</a></td>
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</table>
### Top MEP (Mechanical + Electrical) Engineering Firms

<table>
<thead>
<tr>
<th>Firm Name</th>
<th>Address (HQ)</th>
<th>Year Est.</th>
<th># of Employees</th>
<th>LEED AP</th>
<th>Annual Revenues (millions)</th>
<th>Largest Project Completed in 2017</th>
<th>2017 (Utah offices)</th>
<th>2016</th>
<th>2015</th>
<th>Top Markets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ensign Engineering</td>
<td>45 W 1000 S, S 500 89 S, 500 S Sandy, UT 84070</td>
<td>1997</td>
<td>101</td>
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### Top Civil Engineering Firms

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<thead>
<tr>
<th>Firm Name</th>
<th>Address (HQ)</th>
<th>Year Est.</th>
<th># of Employees</th>
<th>LEED AP</th>
<th>Annual Revenues (millions)</th>
<th>Largest Project Completed in 2017</th>
<th>2017 (Utah offices)</th>
<th>2016</th>
<th>2015</th>
<th>Top Markets</th>
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</thead>
<tbody>
<tr>
<td>McNeil Engineering</td>
<td>5350 S. Sandy Parkway #200 40 Sandy, UT 84070</td>
<td>1983</td>
<td>14</td>
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### Top Structural Engineering Firms

<table>
<thead>
<tr>
<th>Firm Name</th>
<th>Address (HQ)</th>
<th>Year Est.</th>
<th># of Employees</th>
<th>LEED AP</th>
<th>Annual Revenues (millions)</th>
<th>Largest Project Completed in 2017</th>
<th>2017 (Utah offices)</th>
<th>2016</th>
<th>2015</th>
<th>Top Markets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Royal Engineering</td>
<td>1935 S East Bay Blvd. 29 Provo, UT 84605</td>
<td>1983</td>
<td>14</td>
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<td>8</td>
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