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# BACK TO SCHOOL

**LIVING AND LEARNING**  
at Vanderbilt University  
PG. 26

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Where innovation meets expertise

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## A Message from JIM AND BOB

Fall is synonymous with “back to school,” but this year, of course, things look a lot different. Who would have thought back in March that the COVID-19 pandemic would still be affecting our schools, our workplaces, and our way of life?

Like all industries, academia has had to completely revamp its operations to respond to the ever-changing circumstances of the pandemic. In this issue, we highlight some of the projects our education clients have been able to move forward, as well as hear from facilities executives at several higher education institutions about the challenges of managing their campuses throughout the pandemic.

Another focus of this issue is, in a way, a byproduct of education: innovation. Academia helps shape and foster the big thinkers of the future, and we're working to put that creativity into practice every day in our projects and on our jobsites. From finding creative solutions to unique project challenges, to exploring new technologies, to bringing ex-

pertise together in a whole new way, as our STO Mission Critical team is doing (see page 18), we encourage and embrace innovation at every level of our organization.

We are constantly learning and improving, and we hope this issue gives you a glimpse into how we're doing that, both internally and in partnership with our clients.

James K. Donaghy  
Executive Chairman

Robert Mullen  
CEO

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# COVID AND THE CAMPUS: An Insider Perspective



When students don't return to campus, what happens to the buildings? Here, facilities executives from three higher education institutions shed light on how COVID-19 has affected the physical campus and their predictions on what's to come.

## The experts:



**ANNE PAPAGEORGE,**  
Vice President for  
Facilities & Real  
Estate Services,  
University  
of Pennsylvania



**DAVID QUINLIVAN,**  
Director of  
Operations  
& Logistics,  
University of Utah



**SUSAN SMYTHE,**  
ADA Program  
Manager/Senior  
Project Manager,  
Swarthmore College

ensure all systems were functioning properly. We also created housekeeping guidelines and signage guidelines for the campus and our off-campus portfolio.

### How did your institution "return" this fall?

**Papageorge:** The decision early on was to go hybrid. But about two weeks before move-in, because of the challenges in testing availability and reliability and how fluid everything still was, the university decided to go all virtual for undergraduates. What we had planned was to house returning students in singles, keeping freshman and sophomores on campus and housing juniors and seniors through our master-leased products in the area.

**Smythe:** There was a recognition that being in person is very important to developing a sense of Swarthmore values and the educational and co-curricular model. A desire to maintain staffing levels also means it's important to have some students in person. Ultimately, we ended up with about 625 students doing a hybrid model of instruction.

**Quinlivan:** Our decisions are based on State of Utah COVID rules, as we are under direction from the governor. We had about 20% of classes in person and then what we call a "circuit breaker" for two weeks in late September. The vice presidential debate was hosted on campus, though, which posed all kinds of logistics challenges for hosting crowds safely. Students will move to full-time remote learning from Thanksgiving until their return in January.

### What are some of the biggest changes you've had to make on campus?

**Papageorge:** We've been able to do lots of preventative maintenance, work on the buildings that aren't in use, and other work order backlog. Some faculty are still using their classrooms to teach even though they're virtual, so the individual schools are working with building administrators and us to tailor an enhanced housekeeping plan—what we call the "road map"—to their specific operations, plus using the social distancing signage kit we developed for the campus.

**Smythe:** Mostly it's been about "de-densifying"—removing furniture from spaces, going down to all single rooms, blocking off plumbing fixtures, and adding plexiglass barriers and a LOT of signage. We've been changing to all MERV 13 filters, reprogramming HVAC systems to change the balance of outside air/air changes, and remove touch where we can, like adding automatic door openers, new door handles for "hands-free" operation, and turning off all hand dryers.

### Is the pandemic affecting your capital plans?

**Smythe:** Yes. We have already deferred a few projects, and timing is uncertain on others.



Swarthmore's campus plan focuses on developing sustainable facilities, such as Whittier Hall, also built by LF Driscoll

**Quinlivan:** It's still unknown at this time. We did cut a small percentage for Fiscal Year 2021, but it will all be reviewed in the January 2021 legislative session.

**Papageorge:** We approve our budgets in June, so we were just starting that process when COVID-19 hit. The plan went from \$600M to \$238M. We didn't put a lot of projects on hold, just pushed some out. Retail has taken a big hit. We have done some rent abatements to try to keep retailers here. One of the benefits of our retail strategy is we have a balance of local and national retailers. The national ones tend

to retract during these recessions since they have so many assets. But it's also an opportunity. Those who are surviving are those who had already made the transition to online retail. That will be even more so.

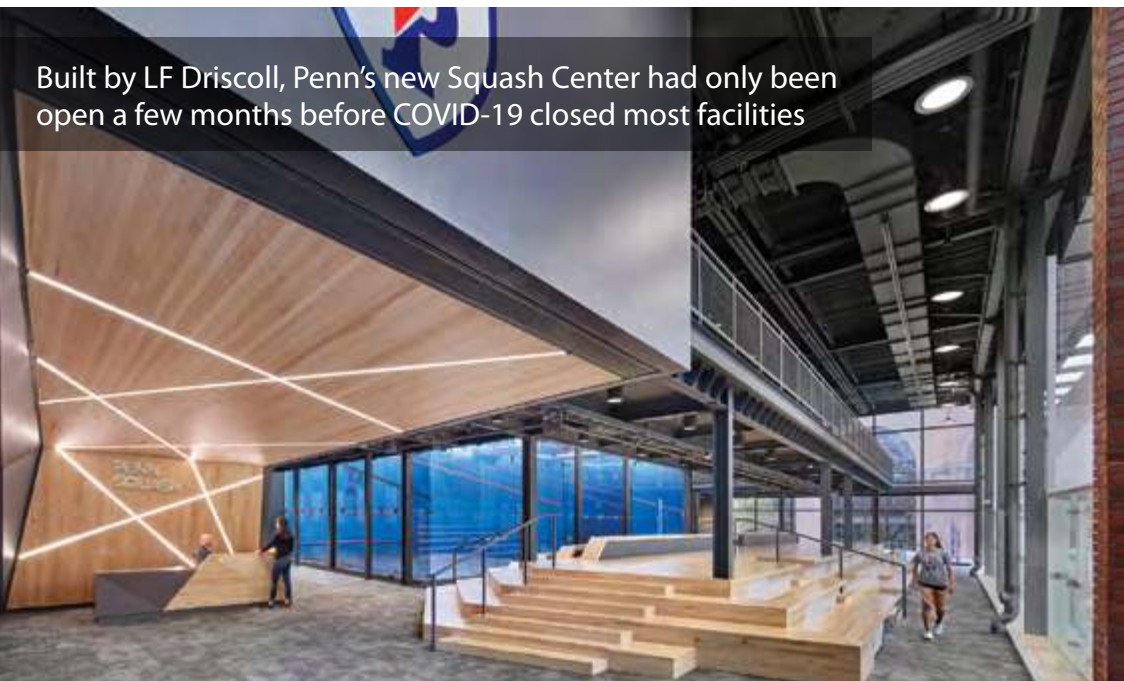
### What other long-term effects do you foresee for the physical campus?

**Smythe:** We may never go back to having all staff on campus, which might be an opportunity to convert some current office space into academic or student support functions. That may, however, have an impact on sustainability efforts. Plus, the overall financial hit of addressing pandemic needs coupled with investment losses might lead to longer-term lessening of capital funding.

**Papageorge:** In our residences, we were already trending toward single-residence suites because that's what students want. We may also rethink if we still really need swing space during construction projects, which could be a positive since finding swing space is always a challenge. Some efficiencies will definitely come out of this.



Layton Construction is helping University of Utah renovate Rice-Eccles Stadium, which has not held events during COVID-19



Built by LF Driscoll, Penn's new Squash Center had only been open a few months before COVID-19 closed most facilities

### How was your institution affected last spring when the pandemic first took hold?

**Papageorge:** During our spring break, we informed students that they should not return. Construction projects were halted, and 500 students received exemptions to remain in campus housing. The facilities department went to a skeletal crew of about 10% of our housekeeping and trade staff, on a rotating basis, to ensure the campus was covered for emergencies and to make sure our workforce was safe.

**Smythe:** We also went virtual during spring break—which was complicated for many reasons. The biggest issue was many students had left campus fully expecting to return, so most left their belongings. On the flip side, we had a lot of students who stayed on campus during break and were now expected to leave on short notice. The residence life staff turned into combination movers, travel agents, and overall supply chain managers, helping students book flights and pack and ship their belongings.

**Quinlivan:** In March we had a hard stop for in-person classes and moved to online learning for the rest of the semester. Our faculty and IT staff were incredible in creating these platforms in just two weeks.

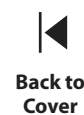
### What measures did you take from a facilities perspective?

**Quinlivan:** We closed and disinfected most buildings and complied with the State of Utah's protocols for working from home. Our skilled trades and facility engineering staff were split into two crews and alternated weeks on campus.

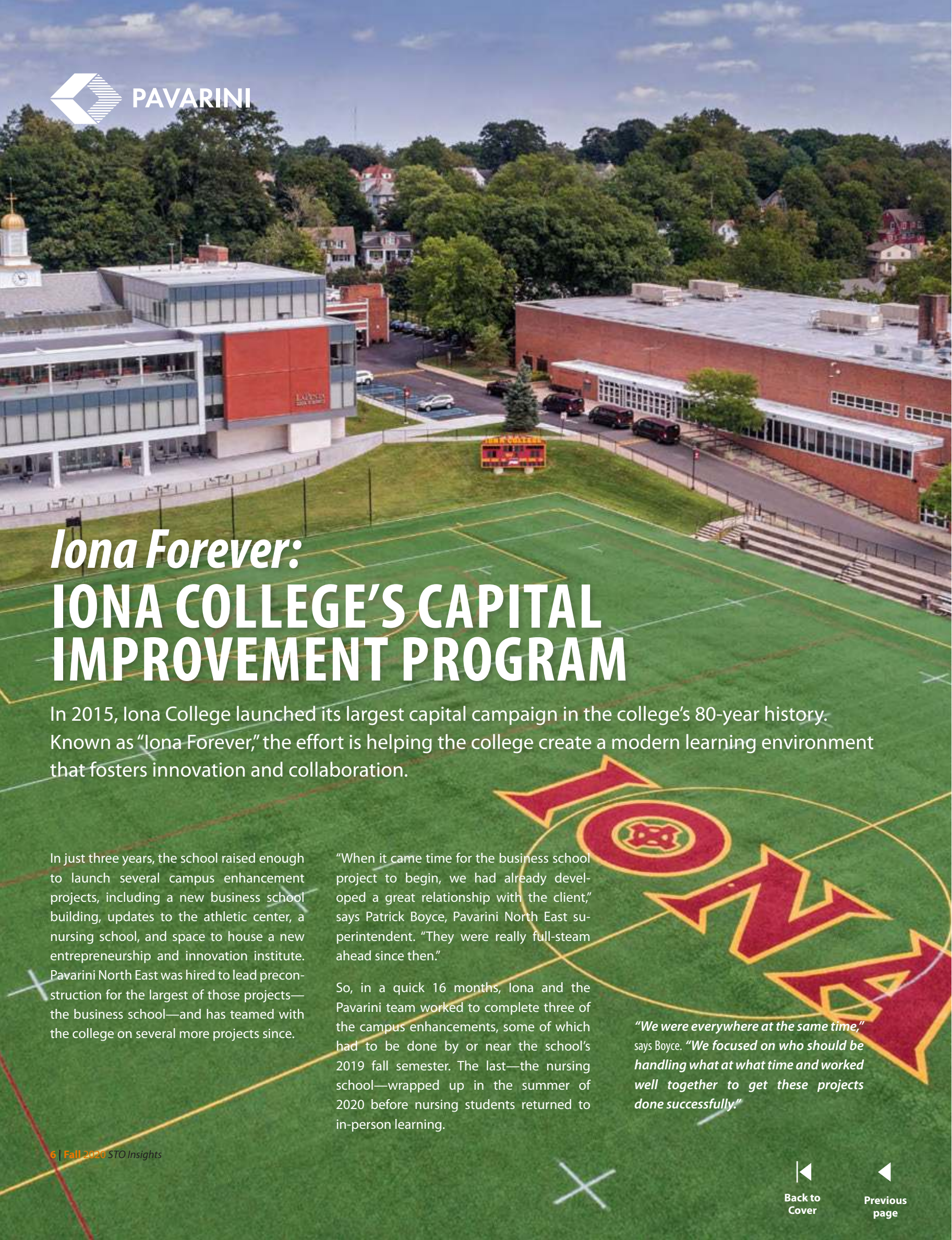
**Smythe:** It was a matter of securing all locations, checking for stocked dorm fridges and open windows, water testing, and setting new criteria for HVAC systems. We also used that period to address deferred maintenance issues and to implement some energy-saving projects, such as converting to LED lighting and upgrading some mechanical systems.

**Papageorge:** The institution created a Recovery Planning Group. I co-chaired the facilities operations subcommittee. We developed HVAC guidelines, we put many of our buildings in unoccupied mode, and as decisions were made to bring people back, we worked to flush the building water and

PHOTO, LEFT: ©HALKIN MASON PHOTOGRAPHY; PHOTO, ABOVE: CENTER: ©CHARLES UNIAKOWSKI; PHOTO, RIGHT: ©RICHARD BART GREEN/DON GREEN PHOTOGRAPHY







# Iona Forever: IONA COLLEGE'S CAPITAL IMPROVEMENT PROGRAM

In 2015, Iona College launched its largest capital campaign in the college's 80-year history. Known as "Iona Forever," the effort is helping the college create a modern learning environment that fosters innovation and collaboration.

In just three years, the school raised enough to launch several campus enhancement projects, including a new business school building, updates to the athletic center, a nursing school, and space to house a new entrepreneurship and innovation institute. Pavarini North East was hired to lead preconstruction for the largest of those projects—the business school—and has teamed with the college on several more projects since.

"When it came time for the business school project to begin, we had already developed a great relationship with the client," says Patrick Boyce, Pavarini North East superintendent. "They were really full-steam ahead since then."

So, in a quick 16 months, Iona and the Pavarini team worked to complete three of the campus enhancements, some of which had to be done by or near the school's 2019 fall semester. The last—the nursing school—wrapped up in the summer of 2020 before nursing students returned to in-person learning.

*"We were everywhere at the same time,"* says Boyce. *"We focused on who should be handling what at what time and worked well together to get these projects done successfully."*

## LAPENTA BUSINESS SCHOOL

The project involved building a brand-new, four-story extension to the existing business school, in addition to fully renovating the existing building. The new facility features all new curtainwall made of stone, brick, and metal panels as well as a new terrace roof on the third floor and a striking atrium at the main entrance. The team also led all new site work, including a plaza, parking, and signage.



### PROJECT DETAILS

**Size:** 68,000sf  
**Architect:** Gensler  
**Engineer:** Langan Engineering  
**Owner's Rep:** JLL  
**Completion:** January 2020

## ADDITION TO SPELLMAN HALL

This project added a vertical extension to the existing Spellman Hall to house the new Hynes Institute for Entrepreneurship & Innovation, which supports innovative thinking and projects across all academic majors. Construction involved adding 3,500sf of offices atop what was the building's roof, including new curtainwall, structural steel, and elevator services.



### PROJECT DETAILS

**Size:** 3,500sf  
**Architect:** David A. Tetro, Architect P.C.  
**Engineer:** Langan Engineering  
**Owner's Rep:** JLL  
**Completion:** September 2019

## ATHLETIC CENTER UPGRADES

Iona competes at the Division I level, meaning their athletic facilities need to attract and support high-level athletes. This upgrade project involved installing all-new stadium seating in the gymnasium, new scoreboards and lights, and new doors and hardware on the building's exterior. The plan also called for rotating the basketball court's position, including installing and painting all new wood flooring.



### PROJECT DETAILS

**Size:** 20,000sf  
**Architect:** David A. Tetro, Architect P.C.  
**Completion:** October 2019

## NURSING SCHOOL

To support its new nursing degree program beginning the fall 2020 semester, the college converted former church elementary school classrooms into a dedicated nursing program facility. The 7,000sf second floor was gutted and renovated into classroom and hospital simulation spaces that allow nursing students to learn and practice in a hospital-like setting. Pavarini also built a chair lift to bring handicapped students from the first-floor lobby to the new second floor.



### PROJECT DETAILS

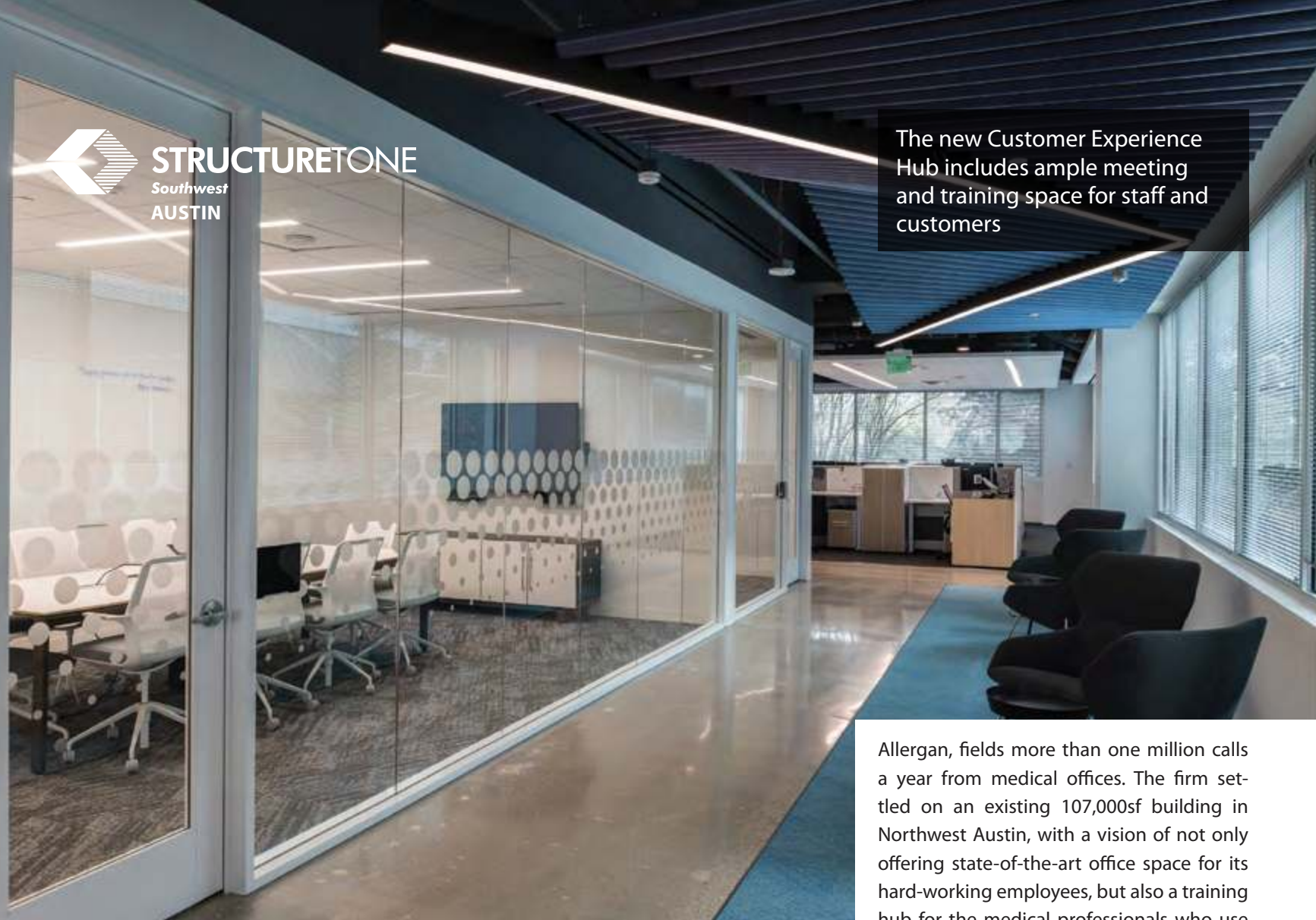
**Size:** 7,000sf  
**Architect:** David A. Tetro, Architect P.C.  
**Completion:** September 2020

Needless to say, in this intensive period of campus construction, the Pavarini and Iona teams forged a strong relationship that they expect will endure as the college continues their quest to offer a state-of-the-art learning environment.

*"We've gotten to work on all types of construction projects here and strengthened our relationships with both new and old partners,"* says Boyce. *"We really value that."*

ALL PHOTOS THESE PAGES WITH THE EXCEPTION OF THE LAST PHOTO TO THE RIGHT: © JOHN BAER/BUILDING IMAGES PHOTOGRAPHY





The new Customer Experience Hub includes ample meeting and training space for staff and customers

more to basic components of the construction process: permitting and labor.

“The way the city handles permitting meant this project had to be broken down into six individual building permits,” McGovern says. “We had to be a little more deliberate in our planning on the front end to make sure we followed the plan our permits allowed.”

Like many cities across the US, skilled labor also became a challenge. High-end, qualified subs were in short supply, and the Structure Tone Southwest team had to put in extra effort to ensure the project was built to the level of quality the client—and the company itself—expected.

“With this ongoing shortage, it’s really been incumbent on our folks to plan, schedule, and sequence everything very proactively,” says

McGovern. “We’ve had to constantly think ahead and get creative to make sure things move forward smoothly.”

Despite these trials, however, Allergan and the Structure Tone Southwest team were able to open the new space on time as planned, which McGovern, for one, is especially proud of.

*“Completing this project for a valued repeat client was a nice milestone for our team,” McGovern says. “It was rewarding to not only see a satisfied client, but also to see how our team has really come together as a unit.”*

### PROJECT DETAILS

- Size:**  
107,000sf
- Client:**  
Allergan (now AbbVie)
- Architect:**  
Perkins & Will
- MEP Engineer:**  
Bay Engineering
- Sector:**  
Life Sciences
- Completion:**  
January 2020

# THE AUSTIN TREATMENT: Allergan’s Customer Experience Hub

Within the last few years, Austin, Texas has emerged as one of the US’s hottest tech towns, drawing in big firms and key talent due to its favorable market, arts and culture, and quality-of-life perks. Life sciences and healthcare organizations are following suit, including pharmaceutical company Allergan, which recently joined global firm AbbVie.

Allergan—the maker of Botox and other medical aesthetic, eye care, nervous system, and gastro-related products—has been in Austin for years. But as the company

has grown, it needed to expand, engaging Structure Tone Southwest to help assess potential buildings for its growing customer experience center which, according to

Allergan, fields more than one million calls a year from medical offices. The firm settled on an existing 107,000sf building in Northwest Austin, with a vision of not only offering state-of-the-art office space for its hard-working employees, but also a training hub for the medical professionals who use one of its products.

The project scope included fitting out four full floors of high-end interior office space, as well as updating the main-floor lobby, fitness center, conference center, and café area. About 9,000sf of that space was also dedicated to Allergan’s CoolSculpting University—a training center for doctors, dermatologists, aestheticians, and other professionals to become certified in Allergan’s patented fat treatment procedure.

*“People can fly in from all over the country for seminars on the procedure and to learn how to do it in a hands-on setting,” says Ryan McGovern, Structure Tone Southwest senior project manager. “The training space includes simulation areas with associated video cameras and AV systems so others can watch a procedure in progress.”*

While the nature of Allergan’s work is complex and highly technical, the most challenging aspects of the fit-out were related

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# PLANNING THE PERFECT SPACE WITH ZOLA

After spending their early years in a 15,000sf space at 150 Broadway, wedding start-up Zola knew it was only a matter of time until their modest NYC digs could no longer accommodate their expanding team. So, in 2019 the company inked an 11-year lease at 7 World Trade Center and set out to transform the 39th floor into an office that would reflect their vibrant company culture.

From customizable invites and wedding websites, to their online gift registry tool, Zola knows how important it is to have a clear vision—and when it came time to build their dream space, the team came prepared. The company partnered with HLW International and Structure Tone New York to design and build a fun, collaborative, and creative workplace that prioritizes flexibility and puts their love for all things wedding on display.

## AT FIRST GLANCE

As soon as they saw the plans, the Structure Tone team was anticipating some pretty significant construction challenges, but thanks to an exceptional project team—from client to sub-contractors—each obstacle was identified, thought out, and tackled as efficiently as possible.

- 1. Location.** The World Trade Center campus is owned and operated by The Port Authority of NY & NJ, and after 15 years of project experience in 7WTC, the team knew what to expect. "Working with Port Authority requires lots of inspections and coordination," says Andrew Smith, Structure Tone New York senior project manager. "Small coordination issues are almost a given, but the team we had in place knew the processes and we were able to move through them together quickly."
- 2. Schedule.** The team was operating on a tight 14-week timeline within an occupied building. Not to mention, the executive suites of the building owner, Silverstein Properties, sat directly below the Zola site. Structure Tone kept construction as quiet as possible, especially during business hours, and carefully planned out any plumbing or electrical work that needed to be done from the floor below in order to minimize disturbances. The design also called for exposed concrete floors, which is a lengthy process that had to be carefully timed-out and coordinated with the rest of the work happening within the space.
- 3. Special features.** The office includes a multi-purpose space, complete with a movable partition that allows Zola to transform the area into an event space, meeting area, or expand it into a full café and pantry in a matter of minutes. But this now effortless space was tricky from a construction perspective. "The glass, modern fold wall expands and collapses through a track in the floor," Smith says. "Installing that track required careful coordination between the steel, flooring, and glass vendors, as well as the carpenter."

## ALL IN THE DETAILS

Zola's open-plan headquarters features exposed ceilings with pendant light fixtures, benching system furniture, and carpet tiles to highlight the incredible floor-to-ceiling windows that offer 360-degree views of NYC. The entire floor is furnished and lit by products that are sold on Zola's website and were hand-picked by the Zola team.

## PROJECT DETAILS

**Size:**  
40,500sf

**Client:**  
Zola

**Architect:**  
HLW International

**Engineer:**  
Robert Derector Associates

**Owner's Rep:**  
Colliers International

**Sector:**  
Commercial

**Completion:**  
April 2019

The "Townhouse" showcases some of Zola.com's most popular products



- 40,500sf flexible office space
- Features Zola's own products
- Wedding-themed details
- 14-week schedule

PHOTO THESE PAGES: MIKE VAN TASSEL

Inspired by the company's passion for weddings, each conference room is named after a favorite wedding movie or meaningful custom from around the globe. For instance, the Mehndi room displays photos of a beautiful Indian wedding tradition where Mehndi, a paste made from dried and powdered henna leaves, is applied to the bride's hands and feet.

One of the most unique areas within the office is Zola's product showcase room, referred to as the "Townhouse." The area is connected to the office lobby and feels like a studio apartment with exposed brick and rose gold and copper accessories and appliances. Zola.com carries more than 60,000 products from upwards of 1,000 brands, and the Townhouse allows the company to display some of their new and most popular items.

## HANDS ON

For Zola, this project was a labor of love. From walking through the site as often as twice a week, to choosing the movie titles and traditions that go with each conference room, to staying late one Friday night to install their own wall coverings as a team, the finished office is truly a reflection of their company's culture and enthusiasm.

A glass partition transforms the office café into a versatile meeting and event space

"This was Zola's first major construction experience and this project is their first large headquarters," says Chris Maierle, Structure Tone New York superintendent. "We worked so well with Zola's team—it was really fun for us to experience the whole process with them."

Since Zola moved into the space in May 2019, the feedback from staff has been exceedingly positive.

*"The whole company was completely blown away by the new office, and we're so thankful to Structure Tone for all their hard work and support,"* says Kate Furst, Zola SVP of operations. *"Seeing everything come to life has been incredible."*





# 826 VALENCIA

## Building Writing Skills for Bay Area Students

The mission is simple: To support overburdened teachers and connect caring adults with underserved students who need help developing their writing skills. Since 826 Valencia was formed in 2002, that mission has evolved into creating fun, quirky-themed, brick-and-mortar tutoring and writing centers across the United States, which has inspired similar education centers around the world. In San Francisco, BCCI Construction has been the build partner to help 826 Valencia with its vision for expansion.

BCCI president and CEO Michael Scribner galvanized the local construction community to pitch in and help build two of the nonprofit's writing centers, the Tenderloin Center in 2016 and, most recently, the Mission Bay location, which opened last year. Located on the ground level of an affordable housing complex, the Mission Bay Center includes Woodland Creature Outfitters, a retail storefront for the community, and an enchanted-forest-themed writing and tutoring lab for students ages 8 to 18. The center also serves schools in the nearby Bayview and Potrero neighborhoods.

The five-month build-out was a labor of love, with all of the team members—including WRNS Studio, graphics designer Office, Tipping Structural Engineers, and many local subcontractors and artists—working together collaboratively to realize 826 Valencia's vision, connecting learning to fantasy, creativity, and play.

*The rewarding part is the ability to give back to the community and see the results," Michael Scribner says. "With a project like 826, you see the children in the space and the benefits that they're getting, and you feel like you've actually accomplished something to help support the cause in an area that really needs it."*

BCCI's internal community service committee, Community Builders, continues to support 826 Valencia's mission by volunteering at its centers periodically to work one-on-one with students on writing skills and story development.



### PROJECT DETAILS

**Size:**  
5,000sf/2,500sf

**Client:**  
826 Valencia

**Architect:**  
MKThink, Jonas Kellner, INTERSTICE Architects, Gensler, WRNS Studio

**Sector:**  
Nonprofit

**Completion:**  
May 2016/October 2019

### PROJECT HIGHLIGHTS

- ✓ Winner of three awards from AIA San Francisco, IIDA-NC, Contract Magazine
- ✓ Built in 1908, the historic Tenderloin space was once a carriage workshop and movie film storage space
- ✓ 30+ firms provided pro bono services to build these education centers

PHOTO: THESE PAGES: ©2019 CELSO ROSAS



[Click Here to learn more about the 826 Valencia organization](#)

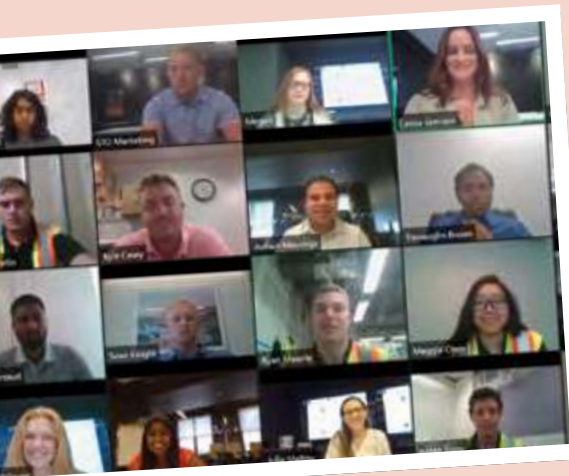


# STO CARES: Supporting Students

For decades, STO Building Group companies have supported dozens of students through a robust internship program where students can gain valuable hands-on experience working with experts in different departments across the organization. When COVID-19 put the world on hold, many universities shut down unexpectedly, and many companies suspended their internship programs.



Click Here to see a video of our interns in action



But not at STO. In an effort to support students in their education and career development, the company worked hard to continue its internship program. Across the organization, STO hosted 30 interns in departments ranging from operations and estimating to human resources, IT, business development, and marketing.

“Safely maintaining our internship program at some level, even during a pandemic, was really important to us,” says Keith Lodge, Structure Tone vice president of human resources. “Our people love to work with up-and-coming generations, and this program is an important pipeline for us to find new talent across the organization.”

Despite this summer’s internship program taking place in a time where there were a lot of restrictions, STO’s intern experience was in no way limited. A handful of interns were able to visit the TSX Broadway jobsite in Times Square, one of our largest, most high-profile projects in New York. STO’s corporate marketing interns also joined the team in virtually attending the SMPS Liberty Ball, where the company won five awards.

One of Structure Tone New York’s estimating interns, Adrian Mayorga, worked on another high-profile project and says the experience was definitely worthwhile.

“Interning here at Structure Tone has been an all-around notable experience,” he says. “Working with people of different backgrounds, knowledge, and experience has been beyond beneficial for me. I never thought I would go into construction, but now I can’t see myself not in it.”



Wall textures and patterns create a uniquely modern work environment

## WILLIS TOWERS WATSON: Built to Flex

After spending 45 years in the Centre Square complex, Willis Towers Watson, a global advisory, broking, and solutions firm, decided to move just a few blocks away to another one of Philly’s premiere office buildings: 1735 Market Street. With two other offices located across the greater Philadelphia area, the relocation provided the company with an opportunity to modernize while maintaining their presence in the city’s central business district.

### DYNAMIC DESKING

With over 45,000 employees located across the world, Willis Towers Watson has first-hand knowledge of how their people work best within a space, and flexibility is key. Their new workplace utilizes the Activity-Based Working concept, which allows employees to work where and how they want, while minimizing wasted space that would ordinarily be allocated to personal desks.

Activity-Based Working can look different from company to company, but for Willis Towers Watson, the concept was brought to the life in the form of a modern floorplan with collaboration rooms that vary in size. For instance, huddle rooms can seat two to three people, team rooms seat six, and larger, more traditional conference rooms can accommodate bigger groups. For heads-down work and private conference calls, there are single-person focus rooms scattered throughout the space. Even the desk areas were thoughtfully planned out. From three-person, angled desk clusters to rows of six-person workstations, each area offers a slightly different atmosphere.

There are no private offices on any of the three floors—and no one has dedicated workspace. Instead, when employees en-

ter the office in the morning, they head to a monitor that displays the office’s entire floorplan to see which desks and rooms are available. Separate locker room areas allow employees to leave their personal items or work equipment in the office when it’s convenient.

### BOLD BY DESIGN

Willis Towers Watson and Vocon Architecture incorporated bold colors, unique patterns, and interesting textures to give the office the feel of a truly modern workplace. Even the office’s structure was designed to be one-of-a-kind. The corridors, for example, are all angled, which adds to the unique layout but was complex to coordinate.

*“The carpenter and mechanical contractor needed to be working at the exact same angle in order to ensure the MEP systems, walls, and carpets were all perfectly aligned,”* says Rocco Novellino, Structure Tone Philadelphia senior project manager. *“The process required a lot of field coordination to make sure all trades were working at the correct angle.”*

Another unique structural component is the staircase that connects the third and fourth

floors. Installing this stair meant the team had to demo out the slab and redo several structural elements beneath it. Partially dedicated to bench-style seating, the staircase is another example Willis Tower Watson’s commitment to flexibility within the space.

### COVID COMPLICATIONS

Construction began in the fall of 2019 and was inevitably disrupted during the COVID-19 outbreak. Philadelphia’s jobsites were shut down for a full six weeks, during which the project team was creating a schedule that would get the job done in a timely fashion, while still allowing for the required physical spacing of the workforce. When the site finally reopened, the supply chain posed another challenge. “Certain finishes and furniture were coming from New York, which was shut down for even longer than Philadelphia,” Novellino says. “While the site was closed, our team was working around these supply chain issues behind the scenes to make sure we were ready once construction could start up again.”

Despite these unforeseen scheduling issues, Willis Towers Watson’s new space was completed within budget and delivered in June. The company is looking forward to moving in.

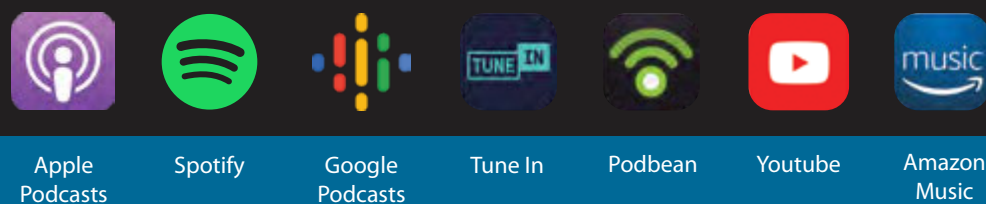
### PROJECT DETAILS

- Size:**  
3 floors
- Client:**  
Willis Towers Watson
- Architect:**  
Vocon Architecture, Inc.
- Engineer:**  
Clifford Dias, PE, PC
- Owner’s Rep:**  
Macro Consultants
- Sector:**  
Commercial
- Completion:**  
June 2020



## STO Building Conversations Podcast: Tune in to the STO podcast to hear about today’s construction challenges from the top minds in the industry.

Where to listen to STO Building Conversations:







The CyrusOne Dublin campus will house three data centres across 23 acres

# POWER PARTNERS: CyrusOne's Dublin I Campus

## PROJECT DETAILS

**Size:**  
205,000sf

**Client:**  
CyrusOne

**Architect:**  
Hyphen Architects

**Engineers:**  
Pinnacle Consulting Engineers;  
J Dunton Associates

**Sector:**  
Mission Critical

**Completion:**  
March 2021

With now over 50 data centres across the globe, CyrusOne knows what it takes to design, build, and operate mission critical facilities. They frame their philosophy around three main principles: lowering capital and operating expenses for their clients, reducing risk through redundancy, and building scalable facilities that allow clients room to grow.

Making all of this work means finding partners who understand those principles, data centre infrastructure needs, and the necessity of high-quality but highly efficient construction. STO Mission Critical has been one of those partners throughout this growth, including one of their largest colocation projects to date, a 23-acre campus in Dublin, Ireland built to ultimately house three data centres offering an IT load of 54MW.

While speed to market has always been a major priority for CyrusOne, their continued honing of their design model and advancements in data centre technologies have raised the bar even higher. Efficiency has become central to their success—and part of that comes from having consistent service providers who can serve as consultants and partners on projects all over the world. With a portfolio of dozens of projects together in Texas, New Jersey, and other US locations, the STO Mission Critical team was ready, willing, and able to extend that expertise and lessons learned

to their Dublin colleagues to ensure this purpose-built campus was a success.

**Global understanding, local knowledge.** With so many projects under their belts, the extended STO team was able to offer tips and insights into how to execute CyrusOne's design model. However, every location has its own regulations and codes, which is where the local Dublin team came in.

*"One size doesn't fit all, even within the European Union," says Philip Harrington, senior surveyor for STO Mission Critical in Dublin. "Thanks to our involvement during preconstruction, we were able to get heavily involved in the details to help the UK-based design team work through a few challenges in localizing the design."*

**Supply chain relationships.** Since the mission critical market is so hot, the demand for skilled labor is higher than ever. Projects in the US, in particular, have engaged most of the major subcontractors and vendors in the sector, which has posed some challenges for building a local Dublin workforce. But STO leaned on their long-time local relationships to secure a first-rate project team. "We engaged with our own supply chain from a long way out," says Harrington. "We've nurtured our relationships with these trusted partners so they stayed invested in the project, and that's been very rewarding for all of us."

**Power players.** The Dublin campus is massive, and CyrusOne initially requested a 80MW supply of power to service the three facilities if they ever reached full capacity. Local power authorities aren't typically willing to make that level of power available on a permanent basis, so STO stepped in to help find a solution.

"Our local relationships with ESB, the transmission asset owner, and Eirgrid, the transmission system operator, have been very helpful," says Martin Donnelly, STO Mission Critical senior project manager. "We were able to work with them to determine what level of power was feasible, and with CyrusOne to add a substation to the initial rollout to ensure they'd have the power they need."

**From the inside, out.** In many markets, Structure Tone is synonymous with interior fit-out expertise. The Dublin team put that expertise



△ The project involves both core-and-shell and interior fit out of the new data centre



△ The STO Dublin team helped tailor the CyrusOne model to Irish building codes

to work on the CyrusOne Dublin campus, in particular helping deliver the signature green feature wall of the office area. "We've built several green walls, so we were able to advise on planting, growth structures, secondary steel support, and irrigation," says Harrington. "It's an integral part of the office façade and we were able to help organise solutions to deliver the design."

When COVID-19 shut the site down for several weeks, Structure Tone put its health and safety plans into action, identifying hazards, mitigating risk, and assigning COVID-19 compliance officers to each subcontractor

to make sure everyone on-site followed such protocols as wearing proper PPE, getting their temperature checked daily, and keeping proper distance.

When completed, the Dublin campus will plant a flag for CyrusOne in one of Europe's premier data centre locations. But it's also a major source of pride for the STO Mission Critical team. "We get challenged every day, which is what makes it fun," says Harrington. "We've enjoyed working with our US colleagues, building our relationship here with CyrusOne, and proving that we are capable of taking on a job like this and excelling at it."





Click here for a message from our CEO



Martin O'Neill, Sr. VP, STO Mission Critical

"The evolution and demand of cloud providers has had the single-largest impact on the Mission Critical sector. Scale and speed are more important than ever."



Terence Deneny, VP, STO Mission Critical

"Speed to market and cost per megawatt have always been key drivers, which led to massive data centers in rural locations. But that model is changing, thanks to edge computing. More owners and providers are looking to build several smaller, distributed facilities just outside of major population centers to create onramps to larger centralized data centers."



John White, Jr., Regional COO, Structure Tone

"We're starting to see completely premanufactured data centers and components becoming mainstream products in the US, further reducing the time and logistical requirements of building data centers." (see sidebar at right)



Joseph Cribbin, President, Structure Tone Southwest

"In the early days of data centers, mechanical and electrical systems were centralized and facilities were designed to the hilt from day one. Now the design is all about efficiency, pushing the envelope and designing toward the outside of tolerances."



Eric Nay, Dir. BD and Nat'l Client Support, Layton

"Virtually every industry now has a Mission Critical component, and our 'new normal' makes it all that more essential to keeping our economy and society moving forward. Data center infrastructure must keep up with the demand that will only continue to grow."

# THE FUTURE OF PREFAB

Prefabrication and modular construction have become more prevalent than ever in many types of construction.



△ Modular construction can help make the Mission Critical construction process more efficient

STO Mission Critical is helping several clients with large-scale modular projects across the globe. In some cases, the work includes installing prefabricated MEP components into a new facility. In others, nearly the entire data center is delivered in prefabricated components. The STO team is currently working on several 1MW prefab data centers in which the team prepares the pad for the components, then manages the delivery, rigging, and assembly, as well as connects all the systems and oversees start-up and commissioning.

Coordination for this level of installation is crucial. The STO team has relied on virtual design and construction (VDC) to help ensure everything is aligned well before installation begins—from the MEP systems, to the foundations and anchor points, to the structural grid components will sit on.

*"Some people have the impression that 'modular' means simply dropping components onto the site," says Terence Deneny, STO Mission Critical vice president. "But there's a tremendous amount of coordination that goes into the process. It's a complex puzzle, but it's exciting to see all that planning go into effect as the pieces come together."*

## WHERE INNOVATION MEETS EXPERTISE

The last 20+ years have seen incredible changes in the way businesses approach data processing and storage. What started as extremely redundant, bunker-like facilities have evolved into the sleek, flexible, and energy-efficient data centers we see today. This evolution continues, and the unprecedented pace of technology will undoubtedly drive even more changes to data center design and construction. STO Mission Critical's focus is to keep up with this unrelenting change, bringing together the local market understanding of the STO Building Group family of companies with the specialized Mission Critical expertise throughout the organization.



*proud to support*  
**biodiversity**

Bees contribute to the biodiversity of our ecosystem and support the growth of plants, trees and flowers.

**Gbees**

Govan Brown's commitment to the environment inspired the transformation of our Toronto office courtyard into a sanctuary for our 50,000 GBees. Bees travel in a 5km radius around their hive to forage for their nectar and pollen contributing to the pollination and biodiversity of our neighbourhood.

Our GBees were able to produce 100 jars of honey for us to enjoy.



Forcepoint's Showcase space brings customers through the full product experience



# THE PEOPLE PARADIGM: Forcepoint's Cyber Experience Center

When most people think of cybersecurity, they think of dark, shadowy forces and firewalls—not people. Cybersecurity firm Forcepoint is disrupting that preconception, both in their behavior-based approach to protecting data and the building they created to showcase it. ▶





The atrium space links the two historic buildings into one



## PROJECT DETAILS

**Size:**  
53,000sf

**Client:**  
Forcepoint

**Architect:**  
Gensler

**Engineer:**  
NV5

**Showcase AV:**  
Design Communications Ltd

**Owner's Rep:**  
Cushman & Wakefield

**Sector:**  
Tech

**Completion:**  
April 2020

The new facility provides abundant meeting space, including the signature Executive Briefing Center



*“Forcepoint is redefining cybersecurity to be human-centric,” says Chris Staal, vice president of global real estate and facilities at Forcepoint. “Our company vision is to understand the world’s cyber behaviors so we can ‘stop the bad and free the good.’ People are at the center of that.”*

Accordingly, the company wanted to create a space where they could connect with their clients face-to-face and demonstrate the power of their solutions. The first step in that process was choosing a location. Based in Austin, Texas, Forcepoint was looking to add an East Coast location that could better suit the busy schedules of their C-suite clientele in the Eastern US and in Europe. Boston fit the bill perfectly.

“Boston’s Innovation District was a natural fit for us,” says Staal. “We’re literally driving innovation, and a brick-and-beam structure that’s been there since 1907 seemed like a perfect accent to speak to our authenticity.”

### THAT “AHA” MOMENT

With Gensler as their design partner, Forcepoint focused on what they wanted this client briefing center to be, visiting a number of briefing centers in New York and Northern California for inspiration. Those visits then drove the focus of their visioning session which, says Staal, made their purpose abundantly clear: it’s all about the experience.

“The centers that gave us an ‘aha’ experience were the ones we liked best,” he says. “We always knew we wanted an ‘aha’ moment of our own, and as we got to the top of the staircase in the atrium of our building, we knew that spot was it.”

Forcepoint brought in Structure Tone to help them build out that vision, which included a two-story atrium entrance that leads users to

the second-floor “Showcase” space. There, visitors are surrounded by floor-to-ceiling glass panels that demonstrate the full impact of the company’s systems. The rest of the 53,000sf facility includes a large briefing center, office space for Forcepoint’s behavioral analytics team, and several smaller break-out rooms, meeting spaces, and even private offices, all tailored to the needs of the executives who, in many cases, traveled from afar to be there.

### NEW MEETS OLD

Bringing this people-first, forward-looking vision into an historic building took some creative thinking. First, the area for the Showcase is actually a two-story infill building between two existing five-story buildings, which includes independent rooftop units. As part of the new lease with Forcepoint, the building owner replaced those units with new, more efficient equipment. As the team started building out the Showcase space, it became clear that vibration from the AC units above could affect the vision, calling for suspending projectors from the ceiling. Forcepoint brought the project team together to brainstorm and test options that could make this suspended Showcase vision viable.

“The first thought was to add extra structural steel to bolster the support,” says Mike Ryan, Structure Tone senior vice president. “But we advised that would be complicated and expensive, with no guarantee it would completely solve the issue.”

So the team went back to the drawing board, with Staal particularly working closely with his AV consultant, DCL, to come up with options. Ultimately, they determined that instead of isolating the vibration across the space, they would isolate it at each projector, placing neoprene spacers around each connection point to provide cushion be-

tween the beams and the projector, clamps, and metal supports. At the same time, the landlord upgraded the springs and curbs of the units and rerouted air ducts to avoid the projectors. “We knew this was the experience we wanted, so we didn’t give up,” says Staal. “Structure Tone did not shrink away once, through many rounds of testing and asking them to remove certain things and put others back. Their level of attention, detail, and understanding just came through time and time again.”

Noise was also proving an issue given the building’s high ceilings. With the team’s “we can do this” mentality at work, Structure Tone suggested adding poured flooring insulation to dull the sound travel. And those are just a few examples of creative decision-making on the fly.

“I have to give it to the whole team,” says Ryan. “We just didn’t give up and leaned on each other to figure out a way to make this work.”

### BETTER TOGETHER

Ultimately the team did just that, perfectly blending the aesthetic and authenticity of the historic building with the ultra-modern technology and purpose Forcepoint housed within it.

“The elements I like most are also a bit of a juxtaposition,” explains Jeanne Nutt, principal and managing director of Gensler Boston. “On the one hand, there’s the grand entrance that brings you up the staircase to the Showcase. It really creates the ‘wow’ moment as intended.

The complex, custom lighting system had to simultaneously illuminate certain areas while blocking out light in others.

At the same time, there are so many details from the original building that we were able to retain and integrate into the design.”

In the months that followed the ribbon-cutting—attended by such dignitaries as Massachusetts Governor Charlie Baker—clients were coming, and had the exact experience Forcepoint had hoped for. Then COVID-19 stopped the world in its tracks. Staal and his team discovered an added benefit of their building that they never would have anticipated.

*“With the entire building to ourselves and a dedicated customer entrance, we can tell customers unequivocally that no one has come into that space other than us,” says Staal. “Our space is for them. When customers are ready to come back, we are ready.”*

Despite the unexpected pandemic pause, the entire team—and especially Staal—count the project as a huge success and testament to the power of a great team.

“The project would never have happened if Gensler, Structure Tone, and all of our partners didn’t come together to solve for the problems in front of us,” he says. “How many times in your career do you really get to make a contribution that truly enables your company and drives its revenue? I’m proud and thankful I got to experience that.”



# FSU'S EOAS BUILDING: Where Climate Collides

Home to one of the top planetary science programs in the United States, Florida State University's earth, ocean, and atmospheric science (EOAS) department performs cutting-edge research that helps communities around the country prepare for and respond to natural disasters. But before last year, these intertwined disciplines were scattered across eight buildings on FSU's campus.

Over six years ago, Florida State University (FSU) realized the need to consolidate environmental science, geology, meteorology, and oceanography under one roof. The university partnered with Bohlin Cywinski Jackson Architects and Ajax to create a buildable design that would truly integrate these fields of study, while incorporating the EOAS department's big ideas for the future.

## EARLY ACTION

Knowing labs would be a huge portion of this facility, FSU engaged Ajax early in the design process, which allowed the construction team to advise on constructability every step of the way. The building houses over 30 research and teaching labs—each individually equipped for a distinct purpose.

From compressed air supplies to specialty fume exhausts, all labs required a unique set of systems, which the team coordinated using BIM and installed in the space above the ceilings. "Most of the labs needed several of the same systems, but it wasn't like each lab was a copy of the next," says Quinn Toulon,

senior project manager at Ajax. "Every lab was a coordination effort to make sure that each fume hood, lab bench, and section of fixtures was exactly what the user of that lab was going to need."

And several of the specialty labs called for even more intricate problem-solving. The trace metals lab, for instance, had to be built entirely of non-metal materials so the room wouldn't interfere with the research. The project team worked closely with subcontractors to find non-metal alternatives, like plastic cabinets, plastic faucets, and a non-metal HEPA filtering system.

## NEW ADDITIONS

On top of the labs, FSU wanted to take the EOAS building beyond the basics for both teaching and research. The new facility features a handful of distinct elements to aid the department's world-class studies.

**Science on a Sphere.** In line with the EOAS department's mission for the new building—to better integrate the complex studies of the earth and its systems—Science on a Sphere

uses custom software, computers, and video to display tons of data from across the environmental science spectrum. It looks like a room-sized globe and is meant to help students visualize patterns in the weather, wind, currents, tectonic movements, and more. Ajax helped prepare the space for the sphere, which arrived earlier this year. The team installed a ceiling soffit, the electrical and data infrastructure, and a stainless-steel guardrail to protect the display from passersby.

**Seismometer.** Only one of a handful in the state of Florida, the university now has its own seismometer that can detect seismic activity around the globe. Ajax drilled 150ft down to provide a sleeve for the device, which gathers data for staff and students to study in real time.

**Smart flower.** An impressive solar panel system, FSU's smart flower sits on the roof of the new building and tracks the movement of the sun via GPS location, allowing it to absorb and produce as much energy as possi-



The building houses more than 30 specialty labs

ble. The device is self-cleaning, will fold up automatically in the event of high winds, and produces 2.5kW of electricity. Its data is displayed on the monitors in the main corridor of the building.

**Monitoring well.** Ajax drilled for and installed a casing for a monitoring well, which provides a pathway to Florida's aquifer. EOAS staff and students can use this well to collect samples from hundreds of feet below the earth's surface.

**Observation deck.** 80ft above grade, the building has a 1,400sf rooftop observation deck primarily dedicated to meteorology research.

*"The more we worked on these high-tech elements, the more we learned about each subject and how it's taught at the university level,"* says Dane Chrestensen, assistant project manager at Ajax. *"Building a space meant to bridge the gaps between disciplines, while providing access to some of the most advanced resources, was a very unique and rewarding experience."*

## THINKING GREEN

In a building dedicated to studying the planet, it only makes sense that sustainability was a big focus throughout construction. The facility's LED lighting system controls are tied into the

HVAC system, and a variable air volume system is tied to occupancy sensors. This means the building can detect when rooms are empty and adjust the heating, cooling, and lighting to conserve energy. Together with the construction and design teams, FSU is in the process of securing a LEED Silver certification for the space.

Today, the seven-story structure is a prominent fixture on the FSU campus, surpassing Doak Campbell Stadium as the tallest building on school grounds. The new facility welcomed faculty and students in January 2020.



△ The space allows scientists to collaborate across disciplines

## PROJECT DETAILS

**Size:**  
136,000sf

**Client:**  
Florida State University

**Architect:**  
Bohlin Cywinski Jackson Architects

**MEP Engineer:**  
Affiliated Engineers SE, Inc.

**Sector:**  
Education

**Completion:**  
December 2019

## PROJECT HIGHLIGHTS

- ✓ 23 research labs
- ✓ 8 teaching labs
- ✓ 280-seat auditorium
- ✓ 100-seat active learning classroom
- ✓ Meteorology broadcast studio



Click here for a video of the EOAS ribbon-cutting



# LIVING AND LEARNING AT VANDERBILT UNIVERSITY

It was Layton Construction's version of the Big Bang—the implosion of one of Vanderbilt's four Carmichael Towers in July 2019, an important milestone in the school's Residential Colleges and West End Neighborhood Improvement project. Since then, Layton has made significant progress in moving these campus additions along as part of the company's largest contract value solo project at the date of signing.

With the assistance of industry-leading technology, Layton was able to capture the exciting first step of the project as well as report frequently to the project teams and client on the project's progress.

*"We are utilizing so many great tools to construct the buildings, like BIM modeling," says Layton senior project manager Sean Farrell. "We placed a BIM manager full-time on the project who also became a licensed drone pilot. He handles all of our drone updates to show progress of all work weekly."*

Guided by its Academic Strategic Plan and FutureVU Initiative, Vanderbilt University re-envisioned the West End Neighborhood to have three new residential colleges and a park-like setting in the West End Neighborhood. The Nicholas S. Zeppos College is the first of this trio and was completed in time for the 2020 academic year. As a part of this plan, the university decided to implode and mechanically demolish Carmichael Towers West, built in the 1960s, to make room for the structure of Residential College B, set to be completed in 2022.

The residential colleges create a unique, on-campus student residence that integrates students' academic experience into their residential lives and creates communities and opportunities for learning outside the classroom among a diverse student body.

ALL PHOTOS THESE PAGES: ©AARON SHAW

## LIVING PRETTY, INSIDE AND OUT

The preconstruction and construction project involves three residential colleges that will house more than 1,300 beds. The residential colleges will all include multi-use spaces, lounges, game rooms, and collaborative spaces, while the design includes an ornate, Gothic interior and exterior style to reflect Vanderbilt University's 150-year-old aesthetic. Additionally, the residential colleges will include kitchen and dining areas, common space, and a courtyard. The structures will largely be made of concrete—Layton's specialty. Spanning over half a million square feet, the students are sure to live comfortably in the beautiful student residential colleges.

In addition to the residential colleges, the university used the opportunity to launch a beautification effort for the neighborhood. Performing various upgrades, Layton reconstructed 500,000sf of outdoor community space, including the former Kensington Place and 24th Avenue South, from a concrete jungle into pedestrian and bicycle-friendly pathways as well as green spaces. The project also included infrastructure upgrades such as stormwater, sanitary, electrical, and hot water utilities throughout the neighborhood.

## THE LOCAL IMPACT

All three residential colleges were designed to achieve LEED certification and will include chilled and hot water lines feeding into the various neighborhood buildings via underground piping connected to the university's main energy plant, cooling towers, and boilers. The piped chilled and hot water that feeds the buildings were in-

stalled during the neighborhood's development upgrade, which took place in unison with Nicholas S. Zeppos College. The upgrade supports Vanderbilt University's sustainability goal to reduce its energy consumption and become carbon neutral by 2030. The three new residential colleges are examples of how the university is keeping sustainability in mind from start to finish in all their capital projects.

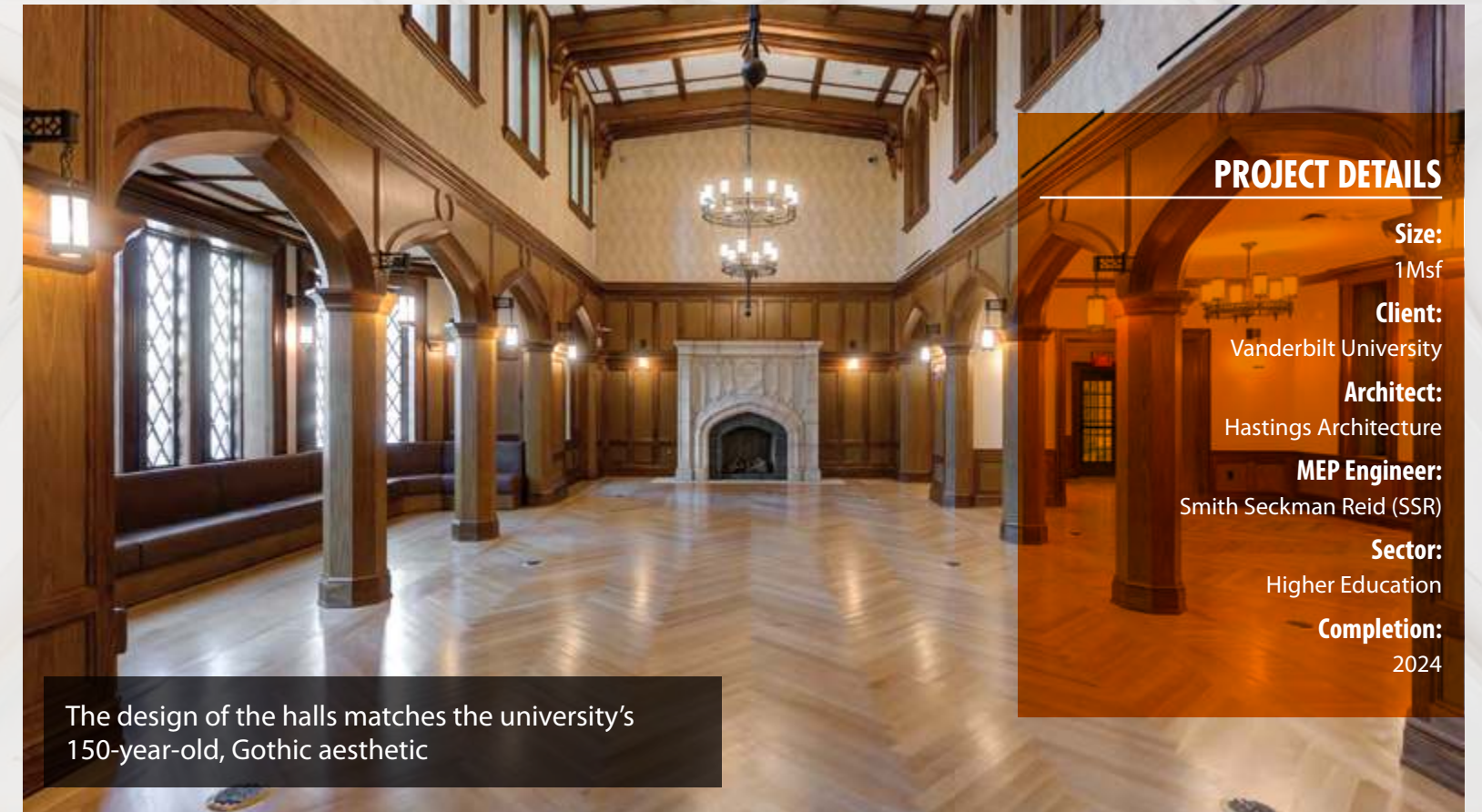
Layton strives to employ local subcontractors when building for clients to support local economies, and this project is no exception. Layton is taking advantage of the Nashville market in conjunction with national teams, all while working within the client's budget to provide a target value design approach to construction.



All told, the project will offer 1Msf of new space to Vanderbilt students

"Our Layton team is incredible," said Farrell on working with the numerous local and cross-national manufacturers and subcontractors that were key to the project. "They all witnessed Layton's sincere approach to their success as it relates to our success. We considered this a key management approach and it has served us well and looks to continue to serve the project needs to completion."

Residential College B is currently under construction and is expected to be completed in July 2022. In August 2021, the last two existing Carmichael Towers are tentatively scheduled to be imploded, which will launch Residential College C into construction in early 2022. Though the team faces challenges for the project, including the large amount of masonry detail and roof structure, the project is still on schedule to be completed by 2024.



### PROJECT DETAILS

- Size:**  
1Msf
- Client:**  
Vanderbilt University
- Architect:**  
Hastings Architecture
- MEP Engineer:**  
Smith Seckman Reid (SSR)
- Sector:**  
Higher Education
- Completion:**  
2024

The design of the halls matches the university's 150-year-old, Gothic aesthetic

**STO insights**  
Click here to see a video of this project  
AUGMENTED REALITY ENABLED PAGE



# WHEN THE STUDENT Becomes the Teacher

While the construction industry has been notoriously slow to embrace change, the advent of construction technology, new legislation, and increasingly global project teams have highlighted the importance of education. Critically examining existing methodologies and looking for ways to advance do not always have to take place in a classroom—but a willingness to learn is integral in transforming the industry for the better. Here Jennifer McCoy, Govan Brown’s national business process manager, discusses the role education has played in her professional journey and how she pays that forward to help her clients.

**Can you speak a little bit about the evolution of your career at Govan Brown?**

My career at Govan Brown began in the spring of 2008. I was employed with another GC in Toronto, and the year marked a major boom to the city’s construction industry. Govan Brown was competing for a large portion of the RBC Dexia project (830,000sf/\$57M CDN) and reached out to see if I was interested in joining the team. The prospect of being part of an industry-leading team was too tempting to pass up. The project was coupled with the recent integration of CMIC. I was in a position to familiarize myself with this new reporting tool and took the opportunity to learn the ins and outs of the platform. The project and the technology helped me gain a lot of experience in reporting, process devel-

opment, contracts, and legal documentation, all of which have played a significant role in my career evolution. The seeds planted at that time have led to my growth and current role as national business process manager.

**What drove your decision to further your education while maintaining the demands of a senior position at the company?**

I was transitioning into more of an operational role and was excited at the potential to apply all my learnings from my project management experience to improve business efficiencies across each of our offices, nationally. While I had a solid foundation, I felt a sense of responsibility to critically examine and be informed of the latest industry developments and business practices. Govan Brown definitely encourages contin-



Jenn McCoy, National Business Process Manager, Govan Brown

ued education, and I felt certain that further education would support my new role. I enrolled at the University of Toronto, where I recently completed a 1.5-year Business Process Management Certificate. The course has helped me define my responsibilities and sparked a newfound enthusiasm. While committing to education at this stage could be daunting, I felt it was the right decision and spearheaded a major turning point in my professional career.

**How has your role as a student influenced the way you operate in your day-to-day responsibilities at Govan Brown?**

Some of the strategies of business process management are to see things from different perspectives and examine the relationships between unique branches of a company. Each

individual role has a tremendous impact on the overall efficiency of a company. The coursework and classroom gave me the opportunity to see outside of my own experience. My classmates and I were attending the same course and learning the same theoretical content yet had such different practical applications of those teachings. I gained a more well-rounded perspective from just hearing other people’s challenges and points-of-view.

**Conversely, you also have taken on the role as an educator within the industry at large. Can you walk us through that decision and what it entails?**

2019 was a significant year in Ontario’s construction industry as major amendments to our Construction Act were introduced, including strict prompt payment legislation. I wanted to contribute to the industry and support my fellow colleagues in understanding how the Act would impact their business operations. My fluency in the new legislation, coupled with my educational path, primed me to help prepare designers, third-party PM groups, and others ensure they are well-versed in the changes to payment schedules and understand the opaquer aspects of the laws. I conducted a series of workshops throughout the province and was engaged as a speaker at industry events to help inform the community of the upcoming legislative implications to our business. I also have partnered with JACO, Junior Achievement Central Ontario, which is a charitable organization that inspires and educates young people about business. It has been especially rewarding speaking directly to future generations about the impact that can be made through construction.

**How has the dichotomy of being both student and teacher informed the way you learn and/or apply your knowledge?**

One of the greatest strengths I have observed in the most effective teachers has been their approachability, and it’s the same quality that has helped me to flourish as a student. Being able to create an environment where people can contribute their ideas freely and be heard is essential in pushing the needle forward. As a business strategy, my education has given me an understanding of how critical each team member is to the greater good of the company. But it’s more than just a philosophy for me—I truly believe it. I have been able to apply this in training new and current employees on our systems and processes. As both a student and teacher, I am always open to having my ideas challenged and feel I have become a better listener and leader as a result.

**What’s on the horizon for Jenn the student and teacher?**

As Govan Brown continues to take on new markets and different construction sectors, and as our portfolio changes, I’ll continue to evolve with it. One thing that I love about this industry is that it continues to surprise me. As soon as you get comfortable, things change. I am fortunate to have spent a significant portion of my career with Govan Brown, and I believe in the brand and want the company to continue to be a leader in the industry. I wholeheartedly believe that Govan Brown is not simply what you do, it’s who you are, and that means pushing the boundaries of what is possible to set new standards and deliver exceptional service and spaces.



**PROGRESS UPDATE!** Pavarini McGovern recently joined client SL Green in celebrating the topping out of 185 Broadway in Lower Manhattan. Designed by FXCollaborative, the 34-story, mixed-use tower includes ground-floor retail space, commercial floors, and 209 residential units.





5G will offer businesses a new level of speed and efficiency



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# TECH IN COMMERCIAL REAL ESTATE: Q&A with Jon Schultz

In an age where landlords are more like hoteliers, how can commercial real estate technology enhance the tenant experience? How is the pandemic shaping that experience? Real estate expert and early-stage seed investor in the CRE tech space, Jon Schultz, has spent the last 30 years of his career incorporating technology into his real estate assets, as well as his personal life. He's the cofounder and managing principal of Onyx Equities, a top real estate firm in the New York metro market, and is a true thought leader when it comes to CRE tech adoption, business strategy, and commercial real estate.

## Why have you dedicated your career to real estate and technology?

I like having an impact on everything I'm involved in. Through real estate, not only do I have the opportunity to learn about other businesses, but I'm able to impact them through the physical space they interact with every day. Technology makes that role even more exciting.

## How do you determine whether a CRE technology platform is going to be successful?

Commercial real estate is my core business, so the technologies I invest in are usually experiments to make what we do better. That means I get involved in a lot of front-facing tech—technologies that are really going to help the tenants, our customers, be successful in their spaces. People are already entrenched in technology in their personal lives, so the goal is to give our customers that same feeling, just within the four walls of our building.

## What is 5G and how will it impact the corporate real estate market?

Similar to 3G and 4G, 5G is the next generation mobile network technology. It's millimeter technology that won't penetrate walls or glass, so we're going to have to retool all of our facilities worldwide to utilize 5G. I think everyone is still trying to educate themselves at this point. As owners, we need to understand how to get infrastructure ready for this. However, once it's implemented, the speed and efficiency 5G will offer businesses is going to be game-changing.

## What advice do you have for businesses trying to incorporate new technologies into their day-to-day operations?

I'm a firm believer in point solutions, meaning you examine your business's biggest pain points and decide what you think is solvable over the next year. Once you decide on the problem and research a solution, you need to find the right early adopters within your organization who have the passion and energy to take it on. People don't love to change, and integrating something new into your current processes usually creates more work upfront. It's key you choose the right people to test the platform or software first and, if it's successful, communicate it to the rest of your employees. It can't be a top-down process—

PHOTO, LEFT: ADRIAN WILSON



Jon Schultz, Cofounder and Managing Principal of Onyx Equities

the adoption of new technology must be an "everyone-up" approach in order to succeed.

## A current pain point that spans the entire construction industry is the shortage of skilled labor. Is that something technology might be able to address?

Millennials and Gen Z are going to make up over 50% of the workforce very soon, and the majority of those generations attended college, rather than trade schools. As skilled tradespeople start retiring, the industry is going to have to get creative in order to fill that gap, whether that means leaning on technology and robotics to automate certain processes, providing incentives for young people to enter the trades, or a combination

of the two. Either way, I believe technology is going to play a huge role in helping the construction industry maintain the pace of work they've set over the last several decades.

## How are you preparing your commercial buildings for the return of the workforce and is technology playing a role?

Safety has always been a top priority, but now we're looking at safety through a health and wellness lens. We're rethinking our cleaning processes, HVAC airflow, and air quality, and we're implementing touchless technology solutions to reduce touchpoints. On top of that, we're ironing out plans to make people aware of these changes and help them understand the new flow within our buildings.

## How is the pandemic reshaping what people want from their physical workplace?

Right now, we're all experiencing dramatic change—and it's forced change. People have a completely different idea of what "work" looks like now than they did even six months ago. Our job as owners has always been to understand what people care about and be open minded enough to deliver that experience. This global event is obviously pushing the needs and desires of our tenants in a certain direction, but the nature of what we do remains the same. We're here to serve our customers, and today, that means listening to what is going to make them feel comfortable and safe in our spaces.



Tech could play a role in filling the labor gap



# PUSHING BOUNDARIES WITH UNT HEALTH SCIENCE CENTER

The University of North Texas Health Science Center at Fort Worth (HSC) is about to launch a research study that could transform the way Alzheimer's disease is diagnosed—but before the research team could change the face of medicine, the school had to make a few changes of their own.



△ The team installed four new imaging machines

Currently, Alzheimer's disease plagues more than five million Americans and can only be detected through a series of expensive tests, including MRIs, PET scans, and sometimes even a lumbar puncture. Dr. Sid O'Bryant, PhD, professor of pharmacology and neuroscience, and the lead researcher on the study, believes a biomarker protein in the blood might be the key to diagnosing patients earlier and at a much lower cost. This three-year study is the first of its kind and, if successful, will allow medical professionals to detect Alzheimer's with a simple blood test in a primary care setting.

HSC partnered with Structure Tone Southwest and Boulder Associates, Inc. to turn 12,580sf of their campus into a state-of-the-art research space designed to suit the specific needs of the study.

## ON A MISSION

In order to confirm the effectiveness and accuracy of the blood test in detecting Alzheimer's disease, the study requires two separate areas—a space where the research team will draw blood from participants and process those samples, and a diagnostic imaging area where the team will compare the blood test results with each patient's brain scans. To satisfy grant requirements, the research space needed to be complete in just six months, so Structure Tone Southwest developed a unique approach to meet HSC's tight timeline.

Rather than building the entire space from a construction perspective and moving the four massive pieces of imaging equipment—two 3T MRI machines and two PET/CT machines—into the space afterwards, the project team decided to move the huge

MRI magnets into the rooms while the facility was still under construction. This meant they wouldn't have to remove completed work when it was finally time to install the machines, but it also led to a few challenges:

- 1. Gaining buy-in.** Siemens Healthineers, HSC's imaging equipment supplier, has a standard process for installing any of their machines to ensure the equipment isn't damaged in the process, and they almost never allow their products to be brought in while construction is still in progress.

"On 99% of jobs, Siemens will not bring a piece of equipment in until they have a completely built room," says Rylan Yackey, Structure Tone Southwest project manager. "We brought the Siemens team on within the first two weeks of construction to start that conversation early on."

Siemens was included in page-turn meetings with subcontractors from the get-go, and having worked with Yackey before, agreed to allow the magnets to be brought in earlier than usual.

- 2. Managing the risk.** Once Siemens was on board, the team needed to ensure the magnets were protected. Typically, they would build a box around the magnet to minimize the risk of damage while the trades continued working around them. In this case, the project team waited until the walls and ceilings were built. Then, all the team needed to do was patch the walls where the equipment had been brought in so the trades could continue installing the ceiling grid, millwork, and painting the final space.

## LEANING ON TECH

Working on this accelerated, six-month schedule, the project team engaged STSW's BIM experts to coordinate the building's mechanical systems. They used BIM visualization to find an entry point and travel path before moving the heavy machinery through the building so the structure wouldn't be compromised. The team also used a Matterport 3D camera to capture the post-demo ceilings and later used the tool again to conduct the above-ceiling inspection.

## CAMPUS CONSTRUCTION

Work on the university's new research facilities was supposed to occur while school was still in session—meaning the team was prepared to work on an occupied campus. However, construction kicked off right as COVID-19 reached the US and students were soon sent home. This allowed the team to build during the day, regardless of the noise level.

Despite the project's intense timeline, construction wrapped up on time in mid-September. "It's been an honor to be part of something that could potentially be a game changer in the race to find a cure for Alzheimer's disease," says Greg Francis, Structure Tone Southwest VP of healthcare. "This was a team that had never worked together before and I'm so proud of how everyone came together to execute—it was amazing to see a brand-new team pull off a job like this."

Siemens has begun installing and calibrating the medical equipment. This November, HSC's research staff will have two weeks of user training. The space and staff will be ready to begin their research by the end of the year.

*"We have really appreciated the entire team put together by Structure Tone Southwest, they were a pleasure to work with." says Matt Rowland, HSC associate director of construction. "Their level of professionalism and communication throughout the construction and closeout process stood out, and their detailed weekly meetings were a big help to me in communicating progress up the chain of command."*

# Reoccupying your workplace, the Safety 360° way

This is an article about safety. You probably assume it's about PPE, or fall protection, or confined spaces. Nope, not this safety article. This article is about behavioral changes and how STO's Safety 360° philosophy got us back to work amid a pandemic. But more than that, it's about how Safety 360° is going to get you back to the office, too.

In 2019, STO Building Group launched the Safety 360° initiative developed by LF Driscoll across our entire organization. A behavior-based approach to safety, Safety 360° focuses on empowering all individuals in our organization to become safety champions through training, awareness, and positive reinforcement.

Safety 360° is about more than being safe—it's about a safe and healthy future. From our workplace—whether it's a jobsite or one of our WELL Certified offices—to yours, we're sharing best practices, international partnerships, and vendor relationships to get you back to the office whenever you're ready.

We presume you have the basics in order, like wearing masks and washing hands. Our guidance starts with the minimum operating standard for your building. Buildings were designed to be occupied, and there may have been physical changes to your space while you were out. Our building experts know what to look for and have long-term relationships with building managers and engineers—many of whom already know us as team players. Beyond validating your space is operating the way it should, we can also help with anything from touchless features and UV disinfection lighting to signage and workstation reconfiguration.

Getting a third-party "stamp of approval" can help, too. The WELL Health-Safety Rating is a visual symbol that shows your organization has taken operational policies, maintenance protocols, emergency plans, and stakeholder involvement into account around a best-in-class standard for your facility that not only addresses the pandemic, but whatever else 2020 has to throw at us... earthquakes, hurricanes, wildfires (OK, 2020, that's enough). The STO Building Group has a long-standing relationship with Delos and the International WELL Building Institute (IWBI) and has the in-house consulting services to scale the WELL Health-Safety Rating from one office to an entire portfolio.

At the end of the day, indoor air quality is the most critical design element of your space when it comes to COVID-19 mitigation. Through our partnerships, we can help find the right indoor air quality solution for your space and work with building facilities to determine what changes they may have implemented already and what further actions make sense, including fixing broken operable windows or adding filtration systems.

**!** We're working with our partners on solutions with Germicidal UV lighting, a product with decades of applications from water, air, and surface treatment.





# MAKERS AT WORK: Penn State's James Building

As Pennsylvania's largest university, Penn State is a natural incubator for smart, creative potential entrepreneurs. In 2015, the university launched Invent Penn State to further nurture and harness that creativity through accelerator programs, coworking space, funding, networking, and other guidance.

One of Invent Penn State's newest ventures is the reconstruction of the James Building in downtown State College into a state-of-the-art entrepreneurial hub for students and local start-ups to move their ideas forward. The new 6-story, 85,000sf building features labs and "makerspace," classrooms, collaboration areas, and coworking spaces, as well as university offices and event space.

For LF Driscoll and the project team, building such a forward-looking space on a tight, populated site involved some creativity of their own.

**Rethinking the site.** The former James Building had outlived its useful life, so the university determined a new build was the way to go. After demolishing the existing building, LF Driscoll excavated the site to create an underground parking garage ready to support six additional stories above. But building a space for "makers" isn't a typical project, says LF Driscoll project executive Michael Dolan. "This isn't the usual layout of metal studs, drywall, and an outlet every 8 feet. The space needs to be built specifically to their vision," he says. "The end users developed their program, the design team designed around that, and we need to make sure the fume hoods, exhaust systems, high-voltage electric systems, and everything else are in exactly the right places."

**Reinventing collaboration.** That level of precision meant coordination was critical. LF Driscoll had presented the idea of using an approach they dubbed "IPD lite" in which the entire project team—owner, architect, engineer, contractor—employs some techniques of integrated project delivery (IPD), including early coordination and a "target value delivery" approach. By organizing the project to meet a budget tar-

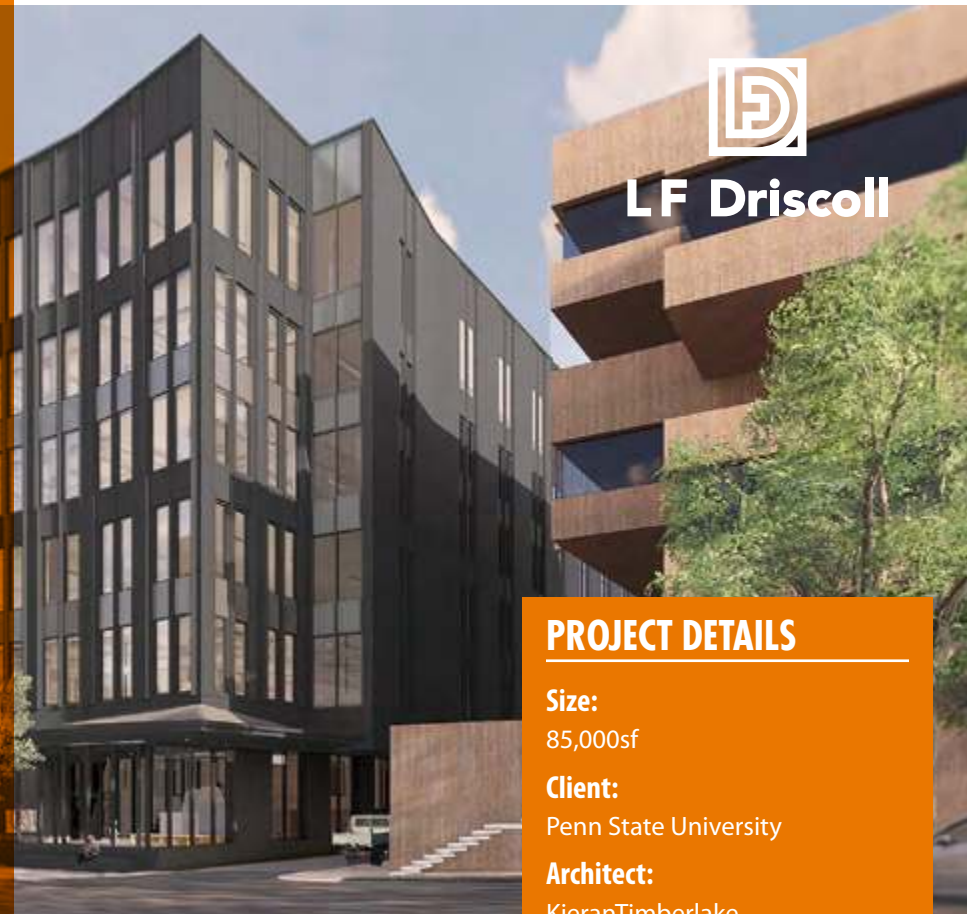
get, the team agrees to work together to make sure any changes to the project are balanced with others to still meet that end goal. "Penn State has very strict standards for their building systems, so that played into the give and take for making the design fit the vision," says Ken Kaighin, LF Driscoll project manager. "Early coordination allowed us to provide input for material and equipment choices that met the performance and aesthetic goals."

**Revising on the fly.** Change is inevitable on a project but in 2020, COVID-19 brought the kind of change no one expected. State mandates shut the jobsite down for about 10 weeks, which pushed the completion date—but it didn't stop the James Building team. They continued to work on shop drawings, submittals, and other processes to keep things moving forward. "That adversity fostered a 'you can't stop us' mentality and really brought the team together," says Kaighin. "We were fully engaged throughout the shutdown and hit the ground running when we were allowed back to the site."

For Dolan, the challenges of building such an innovative facility reinforce why he and his colleagues went into construction in the first place. They're makers too. "I love that this project is helping foster creativity," he says. "Penn State is really proud of what they're creating here, and we're equally proud to help make it happen."

## PROJECT DETAILS

- Size:** 85,000sf
- Client:** Penn State University
- Architect:** KieranTimberlake
- Engineers:** Buro Happold; Keast & Hood
- Sector:** Higher Education
- Completion:** October 2021
- Certification:** Targeting LEED® Silver



# STO BUILDING GROUP

is an employee-owned family of construction companies committed to excellence in everything we do. We believe in building lasting relationships and always putting our clients first.

The diversity of our clients, who range across sectors and geographies, fuels our drive to innovate and provides a powerful platform to leverage expertise and local market knowledge across our companies.

We honor the individuality and entrepreneurial spirit of all of our brands while providing support for collaboration, growth, and future success.

We are proud of our people.

*Jim* James K. Donaghy  
Executive Chairman

*Bob* Robert Mullen  
CEO



RENDERING COURTESY OF KIERAN TIMBERLAKE







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