

WE'RE ALL IN THIS TOGETHER

FIRST RESPONDERS:
Healthcare construction
in a pandemic, PG. 12

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A Message from Leadership

These last few months have been some of the most difficult in our lifetime. Whether we're responding to the life-changing effects of the pandemic or witnessing the injustices of racial inequality, we must listen to and learn from each other.

At this point it's become almost cliché to say it, but COVID-19 upended our world in unpredictable and unprecedented ways. In fact, we postponed publishing our Spring 2020 issue of this magazine as we worked to respond to the rapidly changing circumstances and priorities of our clients, industry, and communities. We are proud and thankful that our employees and our partners have come together so quickly and effectively to implement new safety measures and adjust to new ways of working together.

This issue is focused around the response to and impacts of COVID-19 on our industry, from how constant change affected project sites to the ways we supported each other, our industry partners, and those working on the front lines throughout the first few months of the pandemic.

We also want to use this opportunity to acknowledge the global conversation around social justice. The STO Building Group, by intent, is a diverse family of companies. Diversity brings new perspectives, challenges the status quo, and drives change. As an organization, we are proud of the work we have been doing to become a more diverse community.

But we also recognize there's more work to be done. We are builders, and we are committed to building better and stronger communities. We believe in each other and in effecting positive change. We look forward to working with you to create a more equitable and diverse industry and community that helps each other get through tough times like these.

James K. Donaghy
Executive Chairman

Robert Mullen
CEO

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SHARING AND CARING: Govan Brown's Return-to-Work Strategy

As COVID-19 shifted what a “workplace” should look like, organizations across the globe have mobilized to pull together new protocols and practices for their workspaces as they consider when and how to bring back staff.

In April, the Govan Brown team began discussing this very challenge with clients, many of whom really weren't sure how to approach their return. As Govan Brown's Toronto office organized their own return-to-work strategy, they realized they could offer those same ideas to their clients and partners.

“We started working with our clients to look at their floor plans and make suggestions based on what we did in our own office,” says Jordan Winter, manager of services and special projects for Govan Brown. “Many of them were interested in learning more, so we decided to formalize it.”

The team put together a taskforce to review various options for physical distancing, way-finding, workstation reconfiguration, and other measures, reaching out to vendors for pricing on standard components. The team then packaged that information into a comprehensive return-to-work guide or menu of options that could help walk clients through their decision making.

“We've basically created a playbook they can customize for their own office,” says Winter. “They can use it as a framework to discuss everything from staggered schedules and how to enter the building to specific materials and where to source them. Every client



we've shared it with has wanted to adopt at least some of the suggestions.”

With lessons learned and a strategy formalized, the Govan Brown team took the knowledge they had acquired a step further. The team had been working pro bono with YWCA Toronto—a nonprofit dedicated to improving the lives of women and girls—to renovate their kitchen. When COVID-19 put that project on pause, they shifted to a new approach to giving back.

“We realized we could still help them through our area of expertise by updating their spaces to comply with COVID-19 regulations,” says Sarah Paul, Govan Brown's vice president of human resources and corporate

△ Govan Brown's Toronto office went back on May 20, updated with COVID-19 signage and precautions

social responsibility. “Everything we did for our office, we did for them.”

The team has since offered the same service to other community partners, including FoodShare, which provides low-income families with access to healthy food. Govan Brown volunteers spent hours with them updating their office with COVID-19 signage, sanitizing stations, and other features of the service.

And they aren't stopping there. The team continues to learn from each project, solicit feedback from the clients and partners who are implementing their strategies, and adjust the approach as needed.

“Just like everyone, we are learning as we go about what works best,” says Winter. “But many of our smaller clients don't need drawings or big plans. They are looking to us for guidance, and we're more than happy to help.”

▽ The team offers return-to-work “kits” to nonprofit partners to help them update their spaces with COVID-19 precautions



Managing the New, Virtual Jobsite

While BIM and other tools have gradually helped bring virtual collaboration into construction, much of the process has continued to be done in person. But COVID-19 changed everything. With limitations on who can be on-site, virtual collaboration has become critical to keeping projects moving forward.



△ In OpenSpace, users can track the progress of a specific area in a side-by-side comparison

Reality capture tools have been emerging and developing quickly in the construction industry for the last few years. Most recently, STO Building Group has been working with several of the leading technologies, including Holobuilder, OpenSpace, StructionSite, and Matterport.

In Connecticut, Pavarini North East (PNE) had been testing out 360° camera systems like Matterport for punchlist purposes and to record existing conditions. Tools like Matterport use 360° cameras to scan a space and translate that data into a three-dimensional “digital twin” that users can walk through virtually. Construction never fully shut down in the state due to COVID-19, so PNE ramped up their use of the tool to keep the project team up to speed on progress.

“We had done a scan as a progress report in January and another in March,” says Erik Lavery, PNE project manager. “But we’ve been doing them monthly ever since to coordinate with the full project team.”

Using Matterport, the team can “walk through” the 3D version of the space on any device to assess how design items were installed, talk through challenges, or review requisitions and field reports.

AHEAD OF THE GAME

In Texas, Structure Tone Southwest (STSW) had begun similar explorations of 3D walk-through tools for a large project with a client and design team located in other areas of the country.

“Progress photos were becoming a bear to manage since the site was so big,” says Michael Contreras, STSW senior technology project manager. “The idea of a 360° camera was appealing since a client could see the entire space however they liked and weren’t limited to what they could see in the photos.”

Contreras settled on OpenSpace as his tool of choice. Like Matterport, OpenSpace uses 360° cameras to scan the space. But instead of setting up the camera in select locations for the scans, the camera can be mounted on a hardhat, scanning the space as the person wearing it walks through. No matter what route the cameraperson takes, the program stitches the data together to create a full 3D image.

By the time COVID-19 began limiting activity on the jobsite, Contreras and his team were pros at using virtual tools—to the point that it



△ Matterport scans create a 3D overview users can navigate through

became a competitive advantage as clients and design teams recognized the challenges of collaboration during a pandemic. We were able to show clients how we could manage project progress without needing them to visit the site,” he says. “It really has helped us keep our projects going, and clients are thrilled they can keep control and visibility without having to go to the site.”

CONTINUOUS LEARNING

These tools even helped projects stay close to the schedule in areas where construction was completely stopped. In New York, for example, Structure Tone was able to leverage the empty sites to do complete laser scans and 360° camera captures that helped move MEP coordination forward as the team prepared for a full return to work.

“We remotely kicked off a phase of MEP coordination on a large job during COVID-19, and we’ll likely complete the whole phase’s coordination without a single in-person meeting,” says Jacob Raskin, virtual design & construction lead at Structure Tone New York. “We have very senior representatives of design and trade firms attending coordination meetings now, and it’s great. As they look at the project in 3D and experience the process, it helps raise the level of knowledge and makes collaboration that much easier.”

Long-time virtual construction advocate Clayton Lyons agrees. Lyons and his Advanced Coordination Team are based in Boston and rarely need to visit their typically

New York- or Philadelphia-based projects. Virtual coordination allows his team to save a project time and money, without requiring them—or added labor—to be on-site.

“By coordinating the design within the 3D models and getting everything to a buildable set of documents before construction begins, you can significantly streamline who needs to be on-site,” says Lyons. “COVID-19 really made this easier to understand for construction managers, who traditionally have wanted to see everyone in person on the jobsite.”

HERE TO STAY

While COVID-19 certainly ramped up use and engagement in virtual construction tools, the STO team thinks these technologies will increasingly become the norm.

“Virtual tools have been around for some time, but COVID-19 pushed the final buy-in for all stakeholders,” says Chris Bailey, creative design manager for Structure Tone London. “Now everyone is realizing that many parts of the process can and should be worked out before you even get on-site.”

As more project partners understand and use the models, the applications will only continue to develop. Matterport, for example, is launching a version of its tool that can capture data from an iPhone camera. More and more virtual construction teams are also tying system maintenance and operations information to the models to create a living operations and maintenance manual for facility managers.

Hover over this page with the **STO INSIGHTS APP** for an example of an OpenSpace walk-through

“These tools will fundamentally change how as-builts are created,” says Brian Boyce, director of operations for Pavarini North East. “There are so many ways to use these tools. It’s been a game changer for collaboration.”

And whether or not collaboration returns to an in-person norm, the industry will continue creating new and better ways to use technology to improve the process.

“These programs are just a few examples of the emerging tools we’re using based on our own experiences and client and partner interest,” says Terry Robbins, STO Building Group chief information officer. “We’re constantly keeping our eye on the market to see which solutions evolve to become the leader and which new tools may have promise.”



GOING FIRST:

Pausing Construction in Boston and San Francisco



As COVID-19 cases in the US continued to climb earlier this year, construction firms in hot spots like New York City knew it was only a matter of time before jobsites were shut down. But for some contractors, that call came much earlier than others. On March 16th, Boston and the San Francisco Bay Area became the first regions to issue shelter-in-place orders and shut down construction activity—so what was it like to go first? **Mike Ryan**, SVP of Structure Tone Boston, and **Michael Fraley**, VP of field operations at BCCI Construction, discuss some of the challenges they faced.

What was it like to be in that first group of cities to shut down construction activity?

Fraley: The most significant challenge was the uncertainty of the situation. There was no best practice or frame of reference to guide our actions, policies, and procedures. In the beginning, state and local officials were not coordinated and often issued conflicting orders, which made the situation even more challenging to maneuver.

Ryan: Yes, this was all new to us. Our top priority was the safety of our employees and the safety of our jobsites.

How did you begin shutting down sites quickly but safely?

Ryan: We created site-specific checklists with key items to tick off before closing each job-site—things like removing trash, organizing work and supply areas, shutting off any valves, and locking electrical panels. Before exiting, we did final walk-throughs with the building engineers to make sure each site's systems were off.

Fraley: We assembled an internal team to develop our demobilization approach. The group discussed and combined different

ideas to create a comprehensive plan with easy-to-follow checklists, which we shared with building management teams. In some cases, BCCI's plans and checklists were even used to assist with the shutdown of non-BCCI project sites.

What were you able to work on during the shutdowns?

Ryan: From continuing to pursue work to creating back-to-work plans, we were very busy during the shutdown. I led Boston's "Return-to-Work" committee, and we jumped right into drafting those plans. We were constantly asking ourselves the "what-ifs" and really trying to come up with measures that would make our employees feel welcome in the office and make sure subcontractors and our own people felt safe on-site.

Fraley: I agree, there was quite a lot to do during the shutdown. While our preconstruction and project management teams kept in touch with clients, our field staff was busy drafting demobilization checklists, master schedules, and three-week lookaheads to prepare for remobilization.

As other cities began ceasing construction activity, and as you began gearing up to return to jobsites, what lessons learned were you able to share?

Fraley: Being one of the first to cease construction and then remobilize, we've had the opportunity to share a number of lessons with other STO business units. We remobilized over 20 projects, which required precise scheduling to accommodate a large number of deliveries over a very limited timeframe. We pre-stocked items in our warehouse to facilitate the rapid reloading of the delivery trucks. The first deliveries began at 12:01am on the official reopening day and continued around the clock until each project was complete. This approach helped us get our projects back online quickly and was shared with the rest of STO.

Ryan: As other cities began to shut down, we shared our expertise, and vice versa. When Boston started getting ready to head back to the field and the workplace, we were able to leverage the experiences of our colleagues in different locations who had continued operating. I think one of the positives that has come out of this situation is we've really come

together as an organization to help one another through each stage of this COVID-19 rollercoaster.

How do you see COVID-19 impacting our industry?

Fraley: Our teams have done an excellent job developing strategies to respond to the ever-changing governmental orders and public health recommendations. As we continue to move through this evolving situation, planning has never been more paramount, and we're translating what we've learned so far into an overall BCCI business continuity and disaster recovery plan.

Ryan: Initially, construction is going to be slower to allow for extra spacing on jobsites, additional shifts, and staggered site entry and exit. However, some clients still haven't returned to their buildings—meaning we can work more efficiently without the noise and dust restrictions of an occupied space. In the longer term, I think this situation has forced us to slow down. In construction, we're constantly pushing forward to get the job done, but now we're looking at each situation and project from a different perspective and I think that will lead to innovations down the road.



Hover over this page with the **STO INSIGHTS APP** to listen to our podcast with Mike Ryan

STO Building Conversations: THE COVID-19 SERIES
Mission Critical in the Age of Social Distancing with Terence Deneny, VP of STO Mission Critical

"Think about Amazon Prime Day, Cyber Monday, or phone call volume on Mother's Day—these are the peaks in network traffic. You design the networks and the IT infrastructure to be elastic to accommodate those one- to two-day peaks. What this pandemic has done is force the internet and telecom providers to operate at their peak volumes for months at a time."



COVID-19 Series

MISSION CRITICAL IN THE AGE OF SOCIAL DISTANCING

Listen on **Apple Podcasts** **LISTEN ON Spotify**



Hover over this page with the **STO INSIGHTS APP** to read the full STO report and links to sources

THE POST-COVID WORKPLACE: What's next for office design?

In just a few months, COVID-19 has completely transformed the way industries around the globe operate. As society continues to adapt to these unprecedented circumstances, so must our workplaces. So, what does the post-pandemic commercial office look like? STO launched a design impact taskforce to assess what real estate, design, and construction experts are saying. Here are some of their findings.

MORE FLEXIBILITY, LESS SPACE

While the physical workspace isn't going anywhere any time soon, the pandemic has forced many companies to take a closer look at what it means to operate with a fully remote workforce—and the general consensus is productivity hasn't suffered. With more and more employers offering their staff the flexibility of working from home regularly, companies will need to adjust their real estate strategies to reflect this shift. This could mean companies focus their resources on several small regional offices dispersed through a metropolitan area, rather than one large headquarters.

CUSHMAN & WAKEFIELD: Many companies are coming to the realization that some percentage of their workforce will never come back to an office environment—they will be permanent remote workers. This shift is going to have significant impact on how companies think about office space, the real-estate footprint, infrastructure, and the technology that is going to have to be in place long-term to support the new work paradigm.

NELSON: Workplace conference rooms and coworking amenities will continue to be rethought to best enable elevated, and productive, virtual meetings with remote workers and across office locations.

REIMAGINING DIGITAL

Digital solutions in the workplace is by no means a new concept in commercial real estate, but with a renewed focus on infection control, designers are reexamining how technology in the office might impact the health and safety of the workforce. From pushing the elevator call buttons in the building lobby to using a touchscreen kiosk to order coffee, shared surfaces, equipment, and touchscreens are everywhere in the modern office. Now, designers are exploring touchless alternatives, like facial recognition, motion sensors, virtual assistants, and mobile apps, to enable employees to continue interacting with their work environments without the risk of cross-contamination.

GENSLER: We don't fully know how the pandemic will reshape the workplace, but we do know it is accelerating digital transformation and faster adoption of workplace technology. Just as the rapid shift to remote work prompted us think about how we interact with our virtual work environments, we should take this moment to rethink how we interact with our physical workplaces, once we return to them.

JLL: Consider how app-based solutions or Bluetooth wearables might also enforce safe distance standards, with gentle reminders when individuals get too close. Another benefit is that employees could opt-in to share location data to enable contact tracking and help prevent the spread of infection.

THE NEW OPEN OFFICE

Before COVID-19, commercial office design was trending towards big, bright, and open office environments with shared amenity spaces meant to breed social interaction and collaboration between colleagues. However, as companies slowly begin returning to their offices, it's clear employers must rethink how they utilize an open workplace. Whether it's leveraging furniture to encourage physical separation and distancing, designing wider corridors for safer two-way circulation, or altering the way the workforce operates within the space, open environment offices will need to be de-densified when companies return to full strength.

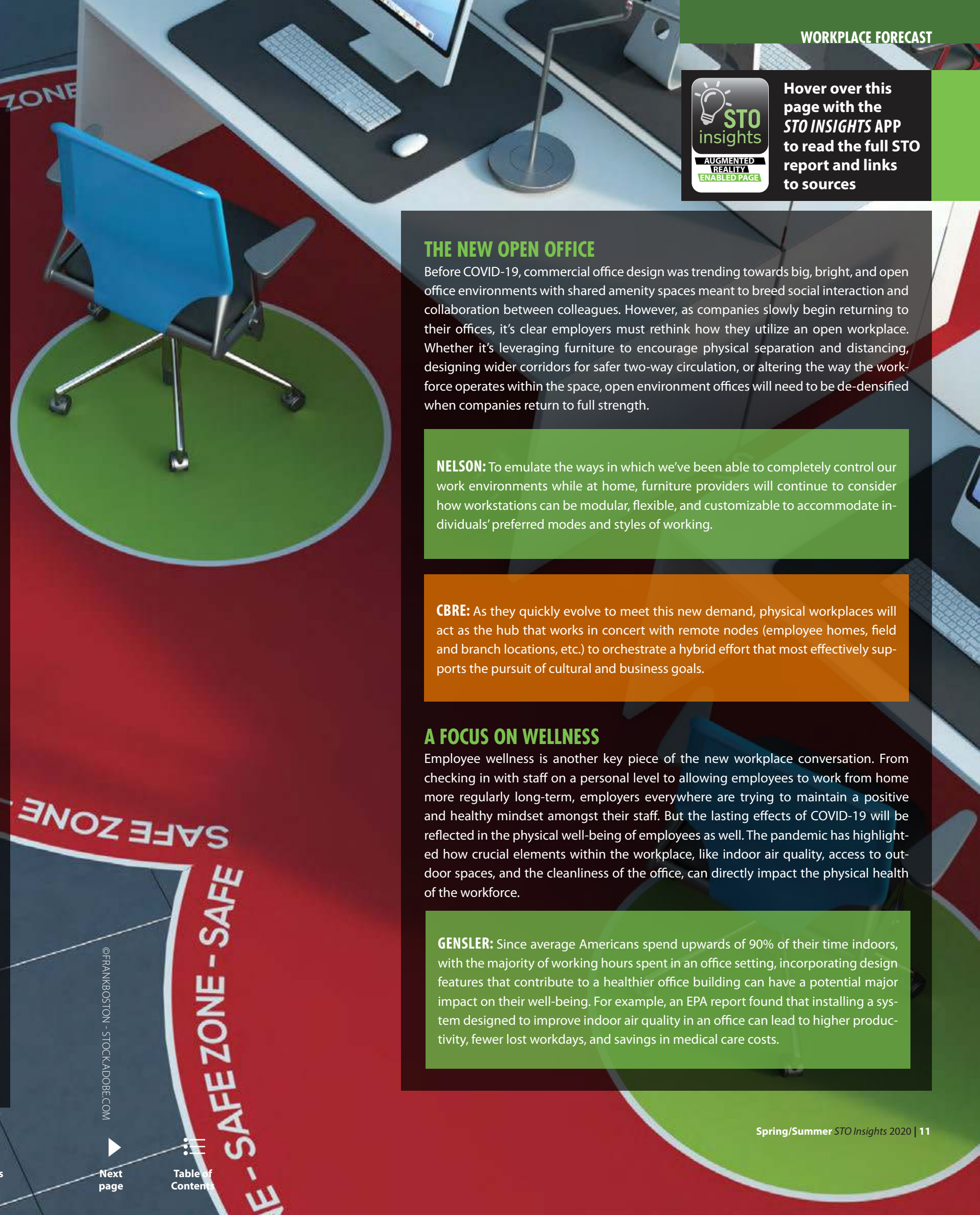
NELSON: To emulate the ways in which we've been able to completely control our work environments while at home, furniture providers will continue to consider how workstations can be modular, flexible, and customizable to accommodate individuals' preferred modes and styles of working.

CBRE: As they quickly evolve to meet this new demand, physical workplaces will act as the hub that works in concert with remote nodes (employee homes, field and branch locations, etc.) to orchestrate a hybrid effort that most effectively supports the pursuit of cultural and business goals.

A FOCUS ON WELLNESS

Employee wellness is another key piece of the new workplace conversation. From checking in with staff on a personal level to allowing employees to work from home more regularly long-term, employers everywhere are trying to maintain a positive and healthy mindset amongst their staff. But the lasting effects of COVID-19 will be reflected in the physical well-being of employees as well. The pandemic has highlighted how crucial elements within the workplace, like indoor air quality, access to outdoor spaces, and the cleanliness of the office, can directly impact the physical health of the workforce.

GENSLER: Since average Americans spend upwards of 90% of their time indoors, with the majority of working hours spent in an office setting, incorporating design features that contribute to a healthier office building can have a potential major impact on their well-being. For example, an EPA report found that installing a system designed to improve indoor air quality in an office can lead to higher productivity, fewer lost workdays, and savings in medical care costs.



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First Responders: Healthcare Construction in a Pandemic

COVID-19 upended the way we all live and work. But nothing compares to the impact it has had on the healthcare sector. Not only were healthcare workers on the front lines sacrificing their health to battle the virus, but healthcare facilities and processes had to be entirely reconfigured to care for patients and protect against further infection.

As it became clear the virus was spreading worldwide, hospitals began proactively thinking about what they could do to get ahead of the predicted surge. For some healthcare clients, that meant reevaluating how they were using their spaces—including those under construction.

available and really focusing on how we could get the job done before the next potential surge, but still safely within our site COVID-19 guidelines.”

In New Jersey, Structure Tone’s healthcare clients were going through a similar exercise,

assessing what was coming and how they could prepare. Finding essential materials and equipment quickly became the focus.

Structure Tone responded, connecting them to suppliers for those materials and donating their in-house stock of negative air machines, as well as dust barrier systems, door window kits, coverall suits, and hundreds of N95 masks. At the same time, the team mobilized to act on dozens of projects to retrofit the hospitals’ existing spaces for infection control, from replacing interior windows with insulated metal panels to installing Edge Guard barriers to create isolation rooms and temporary treatment areas.

FLEXIBILITY ON THE FRONT LINES

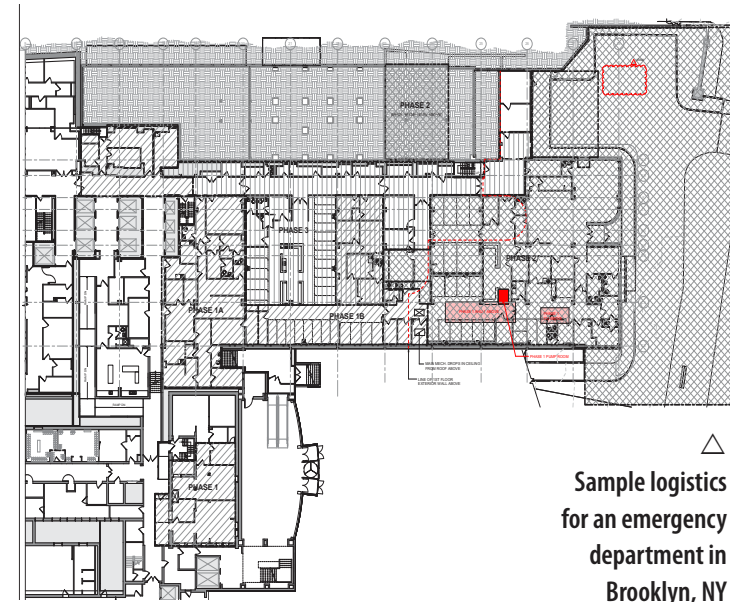
In New York City, LF Driscoll Healthcare is working on several renovation projects, including a 15-bed surgery unit. The hospital asked the project team to work together to convert some of the in-process patient rooms into negative air pressure rooms.

“The project was well underway, and we were asked to modify it on the fly,” says Christopher Shaw, vice president at LF Driscoll Healthcare. “We reworked the design collaboratively, making decisions based on what materials were readily

From coveralls to N95 masks, healthcare construction requires extra levels of PPE



“We’re used to working at a fast pace in healthcare,” says Joseph MacInnes, healthcare sector leader for Structure Tone New Jersey. “We were calling all of our vendors and new vendors and working with our subs to explore all options. Everyone really came together.”



△ Sample logistics for an emergency department in Brooklyn, NY

KEY WORD: “COLLABORATION”

That kind of teamwork came in especially handy for LF Driscoll when Penn Medicine asked the PennFIRST project team to fast-track part of the construction of the 1.5Msf new hospital Pavilion in the event additional space would be needed during the COVID-19 pandemic.

PennFIRST is the integrated project delivery (IPD) team designing and building the massive project, which is scheduled to open in 2021. The goal of their IPD approach is to stay ahead of the curve, developing innovative solutions and working in partnership with each other and the building trades to keep the project moving forward.

The design was intentionally divided into area teams to allow planning, design, and construction to advance in separate but distinct tracks. As the structural steel, concrete, and façade phases wrapped up, the team moved on to the core-and-shell mechanical system and began fit-out throughout the building. However, in the midst of that progress, COVID-19 took hold.

Penn Medicine assessed its facilities and determined that temporarily shifting the focus of the Pavilion construction to where the fit-out was progressing could provide additional space for treating patients, if needed, during this time. With the project’s scheduled completion still more than a year away, the PennFIRST team refocused on rapid response.

“The IPD process put us in an excellent position to respond quickly to this emergency response,” says Ed Hanzel, senior project executive with LF Driscoll. “With all stakeholders working directly together already, we could quickly adjust to changes and help Penn Medicine serve its community in this unprecedented time of need. In three weeks, we were able to make 120 patient rooms available if they needed them.”

While working in healthcare is rewarding on its own, helping the front lines fight the pandemic brought the STO teams an added level of pride.

“We knew what we had to do,” says Shaw. “We had a mission to help our clients help their patients, and we’ve been laser-focused on having each other’s backs to get it done.”

LAYTON RESPONDS TO COVID-19 FAST-TRACK NEEDS

In response to the COVID-19 pandemic, Layton Construction recently completed two fast-track projects for the US Army Corps of Engineers to help handle community needs related to the pandemic.



The first fast-track project was a temporary build-out of a shell space at Monument Health Rapid City Hospital in Rapid City, South Dakota. Layton transformed a 30,000sf floor into a 152-bed COVID-19 care unit with beds arranged in pods, each with dedicated power and over-bed lighting and med gas. The unit also includes hand-washing stations, dedicated toilets/shower rooms, and typical support

spaces. All work was performed within two weeks in anticipation of the COVID-19 impact on the surrounding area.



The second project converted the shuttered St. Luke’s Medical Center in Phoenix, Arizona into an alternative care facility. Within 72 hours of being awarded the project, the Layton team had assessed the facility to determine what it would take to make it ready for patients and staff, from reconfigurations to an updated MEP system. The renovated space was completed in three weeks and includes a 250-bed COVID-19 care unit spanning four floors of the hospital.

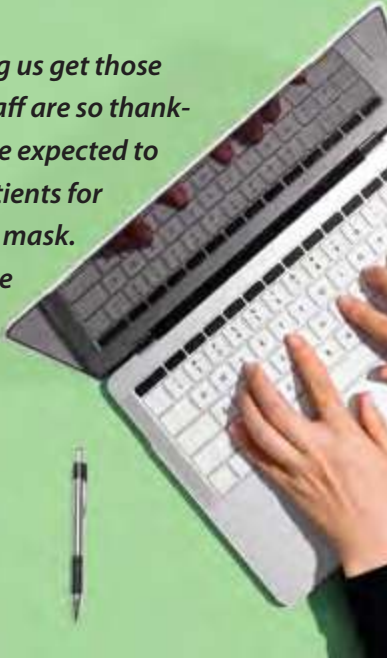
STO CARES: Acts of Kindness During Crisis

With 24-hour news coverage, social media at our fingertips, and circumstances changing by the hour, it's easy to get wrapped up in the "bad" of the COVID-19 pandemic. But moments of crisis also bring opportunities to show up for the communities we live and build in. Here are few of the ways the offices across STO came together to spread hope and give back to their communities.

- STO offices gathered thousands of N95 masks, safety goggles, bunny suits, negative air machines, Edge Guard, and more to help front-line workers in hospitals from London to Dallas.
- Through nonprofit organizations like Hand Up Toronto, Hot Meals at Saint Mark's Church, Compass Family Services, and local food-banks, STO collectively helped provide supplies and meals to over 500 families in need and more than 80 meals to people experiencing homelessness.
- Structure Tone London's own preconstruction director, Michael Burke, facilitated a donation of masks, goggles, and filters to Epsom and St. Helier NHS Hospital.
- BCCI Construction's Community Builders Committee—an employee group dedicated to encouraging positive action in their communities—volunteered to deliver groceries and medication to seniors who wouldn't be able to get necessary items otherwise. Some even helped set up video calls with doctors for people living in senior houses across the city.

"A THANK YOU NOTE FROM A DOCTOR BASED IN DALLAS:

Thanks so much for helping us get those masks, the hospital and staff are so thankful! The dialysis nurses were expected to sit with COVID-positive patients for four hours wearing a plain mask. Now with these, they will be able to rotate and preserve the N95s. They are very grateful!"



 40 bunny suits donated to local hospitals	 200+ homemade masks donated to local communities	 500+ households impacted	 2,000+ medical-grade masks donated to essential workers
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STO Building Conversations Podcast: Looking for a COVID-19 versus construction play-by-play? We've got you covered.

Check out **STO Building Conversations: The COVID-19 Series**—a miniseries on our regular podcast channel dedicated to exploring the pandemic's impact on the AEC industry from all angles.

Whether they were making sure our Mission Critical clients' infrastructure could handle the surge in internet traffic, or adapting on-site safety standards as new information became available, our experts have been our boots on the ground throughout this global event, and we sat with them—virtually—to hear all about it.

You can listen to STO Building Conversations on **Spotify**, **Apple Podcasts**, and the **STO website**.



Mission Critical in the Age of Social Distancing
June 23, 2020



Adapting to the New Normal On-Site
June 2, 2020



Shutting Down and Gearing Up in Boston
May 22, 2020



INTRODUCING



Last December, Layton Construction joined STO Building Group as a national partner, extending the family of companies' network of resources and offerings. Founded in 1953, Layton is a nationally ranked commercial contractor with proven experience in virtually every industry, including healthcare, retail, hospitality, manufacturing, distribution, education, office, industrial, mission critical, corrections, tenant improvement, and public facilities.



Hover over this page with the STO INSIGHTS APP to see a video about Rice-Eccles Stadium

FOUNDED

1953

NO. OF EMPLOYEES

1,100

EXECUTIVE TEAM



DAVID S. LAYTON,
President & CEO



DALLIS CHRISTENSEN,
CFO

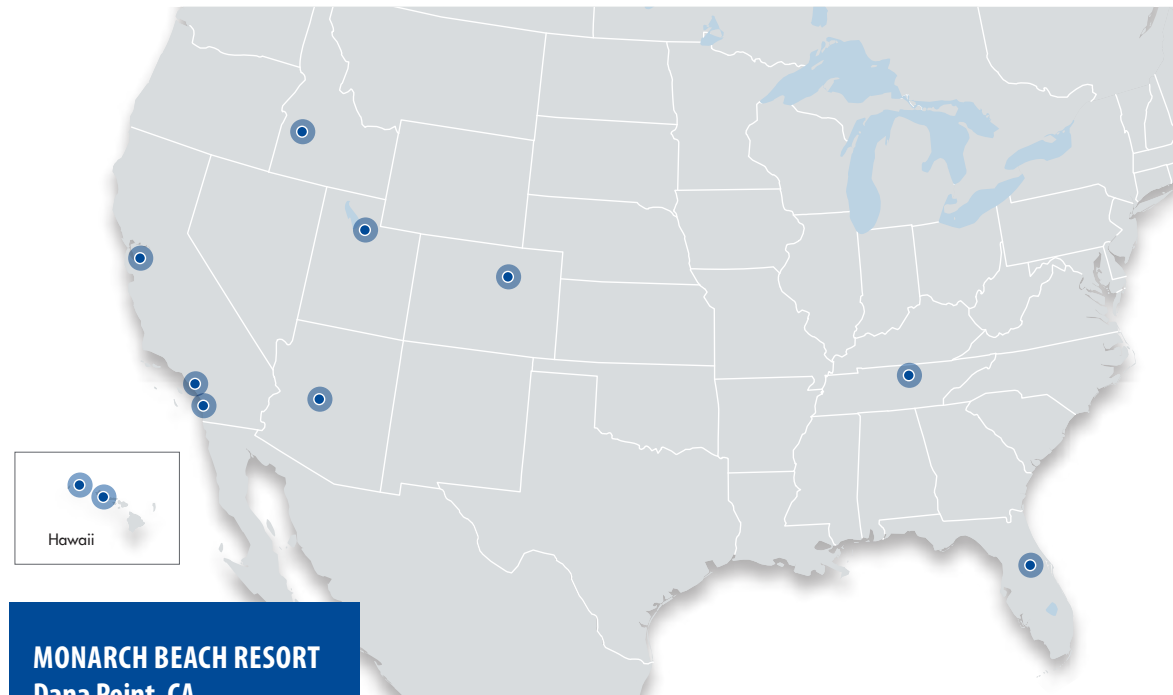


PAUL DRECKSEL,
COO



CRAIG TINGEY,
CHRO

Layton specializes in construction management, design-build construction, and general contracting. Headquartered in Sandy, Utah, Layton has 10 additional regional offices located in Arizona, California, Colorado, Florida, Hawaii, Idaho, and Tennessee.



MONARCH BEACH RESORT
Dana Point, CA



FAENA FORUM
Miami, FL



VANDERBILT UNIVERSITY RESIDENTIAL COLLEGES
Nashville, TN

UNIVERSITY OF UTAH RICE-ECCLES STADIUM
Salt Lake City, UT

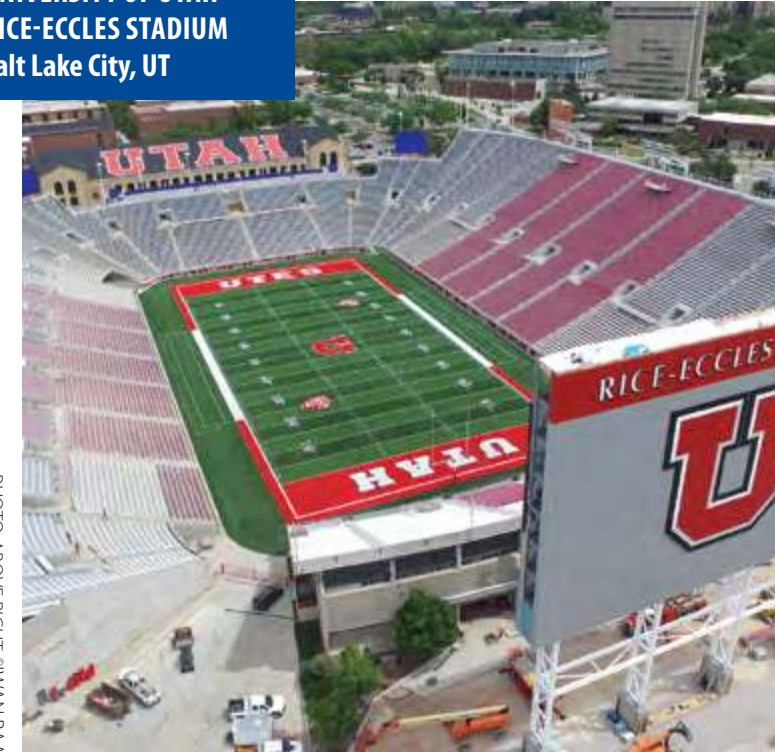


PHOTO ABOVE RIGHT: IWAN BAHNPHOTO, BOTTOM RIGHT: CHARLES DAVIS SMITH, FAIA



UNIVERSITY HOSPITAL MEDICAL CENTER
San Antonio, TX



CONSTRUCTING WITH INTEGRITY

Layton was founded and remains grounded on principles of honesty and working in a safe and unified manner that achieves predictable, quality results. The concept of "Constructing with Integrity" perfectly integrates our values with how we do business.

Honesty

Integrity demands honesty. To Construct with Integrity, we must be open and forthright, even when doing so is difficult. Truthful conversations create opportunities for better analysis and decisions. Honesty builds trust. Trust builds relationships that lead to success.

Safety

Safety is a core value. Constructing with Integrity means prioritizing safety above other considerations. The lives and well-being of our employees, associates, and tradespeople are paramount.

Unity

Constructing with Integrity encompasses the condition of being unified and complete. It requires mutual respect, listening to understand, and collaborating with others both internally and outside the company.

Quality

A project Constructed with Integrity will stand as a symbol of quality and first-class work long after the workers have left the jobsite. We strive to deliver craftsmanship by planning, anticipating, and ensuring attention to detail. We take pride in our finished product as an expression of our personal commitment to excellence and predictable outcomes.



The Supply Chain Ripple Effect

Q&A with a Purchasing Expert

COVID-19 impacted all facets of construction. But perhaps the first area to feel the effects was the supply chain and the preconstruction work associated with it. Here David Hamilton, vice president of purchasing at Structure Tone, explains this ripple effect and the strategies firms can consider for managing it during a crisis.

1. When COVID-19 first began to take hold in China, were you immediately concerned about the impact on the supply chain in the US?

Our industry lives on information. When there is a shutdown anywhere in the world, our immediate thought is, "Will that affect our projects?" As the news from China got more intense, we first started talking to our local suppliers. Many lighting components come from China, so we called our primary lighting distributors. This was early on, and even then, they confirmed the virus was already having an effect. That's when we really started reaching out even more to have our ear to the ground and plan ahead based on what we're hearing.

2. How did those concerns change as it became clear that COVID-19 would impact the US?

The impact the virus had on China was our biggest clue and gave us reason to prepare for what could happen here. As we talked to more people, the picture of how serious this could get became clear. We started to take inventory with each manufacturer to build up an overall picture. We needed to find out what was meant by "We won't be able to get that material." Was that because it's truly not available? Have we tried other channels? We wanted to leave no stone unturned.

3. As construction managers, how do we get ahead of these kinds of disruptions?

Knowing the market and key players is critical. You need to already have your contacts and build those relationships so that when it comes to times like these, you already have those important relationships established. Information is key as well. I like to use the word "gleaning." We try to collect all the little nuggets from each conversation to help build the bigger picture. We also have three primary, tried-and-true methods for managing supply chain challenges in any situation: Expediting, Substituting, or Stockpiling.

4. What are the pros and cons of expediting?

Expediting really comes into play when the schedule is the absolute most important factor of the project. You can work with the factory to work extra hours or to move up the production line, at a cost, of course. Some clients are amenable to paying for that time savings, especially if there's no flexibility in their schedule. The challenge is that not every manufacturer is able or willing to expedite and it does affect the budget.

5. When is substitution a more viable option?

If a product isn't going to be available in time and expediting is out of the question, we look to substitution. We often go through a

substitution exercise as part of preconstruction anyway. We want to protect the original design as much as possible, but we present any potential challenges we see down the line when we're assessing a project, sometimes even before we have the job. The design team often develops a design based on certain products, and we don't want to disrupt that vision. Finding a workable solution comes down to communication and understanding the goals of the project and the team, downstream to our subs and upstream to our client.

6. Can you pre-purchase or stockpile materials for any project?

Stockpiling is an excellent strategy if the costs of storing and transporting the materials are worthwhile. For instance, in Manhattan, storage is a challenge. But for a greenfield project outside of an urban core, it's a great idea. One of our clients, for example, was delayed in getting their new office project started. They knew, however, they did not want to change the design, so we ordered all the materials ahead of time so they were ready when the project began. That decision saved a huge amount of time and effort on submittals and lead times. The challenge, of course, is that buying ahead of time locks you into those decisions—there's no changing your mind. But this is an especially good option for large, institutional clients who have real estate design guides and protocols that dictate most of the materials they will use.

7. How do you determine which approach is best for a given project?

It really comes down to understanding the schedule, budget, and, most importantly, the client and their goals. What will serve the project best? A client may have a lease expiration that makes the schedule most important. In that case, we know we should be prepared to expedite or substitute, if needed. Other clients are very focused on the budget, so substituting a more available product might be their preferred option. Each method has pros and cons, but typically one of these general approaches can get us to the end line successfully.

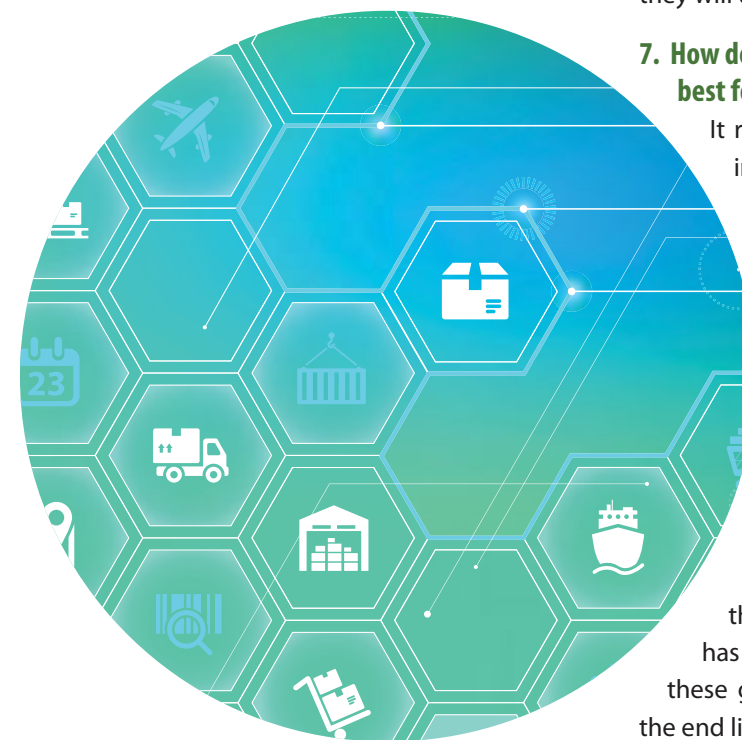
8. Some experts predict another COVID-19 surge could happen next fall. What lessons did you learn that can help you manage supply chain challenges even more effectively if this were to happen again?

The proactive focus on communication is still what I would do again. But now we have even more contacts and an even deeper understanding of the interrelations within the industry. We will continue to check in with our partners, whether or not there's a crisis happening. You never know what tidbits you might glean out of a conversation that will be helpful down the line.

As a company, we also learned a lot about how best to tap into our own expertise. We brought together experts from around our company into a taskforce to address everything from supply chain, to design implications, to jobsite health and safety. Many of us had all of this knowledge at the ready but hadn't really had the impetus to document those best practices and strategies. Now we have that and can deploy that wide network of understanding to help our clients in any situation.



David Hamilton, VP of Purchasing, Structure Tone




Hover over this page with the STO INSIGHTS APP to read more about the Supply Chain Ripple Effect

The campus renovation includes new and refurbished buildings, athletic fields, parking, and a transportation center

PLANNING MAKES PERFECT Stanley Switlik Elementary School, Marathon, FL

Construction on an active site is complicated for any project. But when the project is an elementary school, the stakes are even higher. Phasing and scheduling must be organized around the daily schedule of school, around the constant motion of children, and around the environment students and staff need to succeed.

That was the challenge facing the Ajax team when they embarked on a two-year effort to renovate and expand Stanley Switlik Elementary School in Monroe County, Florida—aka, the Florida Keys.

The overhaul of the school campus involved renovating some of the existing buildings, replacing others with brand-new facilities, and adding parking areas, athletic fields, a central courtyard, a dock, and a transportation center... all while school was in session.

"We had to have a very well-thought-out plan developed around the school calendar," says Michael Wilson, Ajax Building Company operations manager. "Keeping the kids safe and in a consistent teaching environment was critical."

That plan included building a temporary campus on-site for administration and some classroom space, as well as replicated IT and communication systems to replace those put out of commission when the original ad-

ministrative building was demolished. Then the sequenced phases of demolition, temporary relocation, renovation, and moving into the new facilities would continue to cycle as each building opened, with some fast-track work slated for the summer months.

CHANGE OF PLANS

The Ajax team was successfully and safely moving along with that plan when the school year—and everything else—changed due to COVID-19. The State of Florida initially closed the schools for a few weeks, which led the Ajax team to quickly consider what they could ramp up with this unexpectedly empty site.

"At first we thought, 'What can we bite off in these few weeks and put back together before the kids come back?'" says Wilson. "Then they closed school for the year and our floodgates opened. With the campus free of people, we were able to stop renting the temporary campus components and gear up our remaining phases."

The level of detail of their original planning helped clearly map out the next steps. And because construction was limited in surrounding areas of south Florida, additional work crews were ready and willing to take on the job.

THE COVID-19 FACTOR

While the pandemic released pressure on the schedule, it did, of course, have different kinds of impacts on how the project was managed.

- **Access to the Keys.** As the virus spread, the state added a checkpoint at the entrance to the Keys on US Highway 1, asking travelers to present proof of their reason for being there. The Ajax team had to work with its subcontractors to ensure all workers on the job had a copy of the project contract, a letter from their company, and an ID badge from the school district.
- **Lodging for workers.** Because workers were coming from elsewhere for the project, it made sense to find them local lodging.



Project Highlights

- ✓ Worked 19 months on an active school campus
- ✓ Lost no time on schedule due to COVID-19
- ✓ Built using tilt-wall construction
- ✓ Raised the site 5ft to protect against storm surge
- ✓ Includes metal roofs and impact windows for hurricanes
- ✓ Designed for 21st century teaching and learning

However, that was easier said than done. "Most hotels were shut down, and there was a lot of confusion at the time about what was allowed," says Wilson. "It took some time to find a pool of hotels who were able to house our workforce."

- **Jobsite updates.** Like every jobsite, the project site needed to implement recommended COVID-19 safety measures, from added signage and forms to enforcing face coverings, social distancing, and other guidance. And with the heat of Florida, that also included a heightened awareness of worker overheating and ensuring all trades had ample water and shade for breaks.
- **Training.** All of these unexpected changes meant a lot of communication and training—quickly. "We had to train our staff and our subs on all of this," Wilson says. "But we wanted everyone to be safe and productive, so we just had to make sure we got ahead of everything best we could and communicate it."

READY FOR ANYTHING

Even before the pandemic, the Ajax team was no stranger to emergency response in the Keys. In the fall of 2017, the team was in the midst of another campus renovation for the Monroe County School District at Gerald

Adams Elementary School in Key West when Hurricane Irma hit. But, says Wilson, that's an emergency Floridians know and understand. The pandemic was a different story.

"We have hurricane preparedness plans, early warning signs, protocols, and steps we take when a hurricane is coming," he says. "That's the opposite of a pandemic. There are just so many unknowns."

Despite the challenges and the delays that COVID-19 could have caused, the project will be completed on time in August 2020, due in large part to the empty school campus that COVID-19 created.

"We didn't see any lapse in production throughout all the uncertainties," Wilson says. "I was very proud and impressed that we were able to stay on schedule and keep people safe."



△ **Until COVID-19 closed schools, the team had to work around an active campus**

Project Details

- Size:** 101,971sf
- Client:** Monroe County School District, FL
- Architect:** Harvard Jolly Architecture
- MEP Engineer:** Anston-Greenlees, Inc.
- Structural Engineer:** McCarthy & Associates, a division of Pennoni
- Civil Engineer:** Perez Engineering & Development, Inc.
- Sector:** K-12 Education
- Completion:** August 2020

◁ **In all, the renovation included over 101,000sf of construction**

PHOTO, ABOVE LEFT: ©FLORIDA KEYS LAND SURVEYING; RENDERING, RIGHT: HARVARD JOLLY ARCHITECTS

Creativity During Crisis

By Jim Donaghy, Executive Chairman, STO Building Group

In our decades of doing business, we thought we'd seen just about everything—from natural disasters, to recessions, to terrorist attacks. But COVID-19 has been like nothing we've seen before. Innovation has been critical to helping us, our clients, and our industry find ways to move forward.



As many of our locations limited or stopped construction activity, we took the opportunity to step back and think about the incredibly smart people we work with every day—how can we leverage all of this expertise to address the challenges in front of us?

Several years ago, we launched a set of Centers of Excellence & Innovation (CEIs) within the STO Building Group to help us continue to bring new ideas to the table in operations, estimating, and the client experience. With that structure already established, we asked our CEIs to focus specifically on the challenges of COVID-19:

Workplace safety: The health and safety of our workers was our number-one priority. Our CEIs pored over guidance from OSHA, the CDC, local governments, and industry best practices to develop a working set of guidance for precautions and safety measures on our jobsites and in our offices. We've continued to evolve these protocols as circumstances have changed, and have even begun to offer our services in helping our clients update their own (see page 4).

Tracking the impact: To do our work, we rely on our trusted subcontractors, vendors, and other partners. Throughout this pandemic, we've been in close communication with them to see how COVID-19 has affected their businesses and, our projects:

- **Supply chain.** We continue to regularly check in with our subcontractors to find out about factory closures and shipping delays and the impacts those issues are having on the subcontractor community in different geographies. We're tracking the data we glean from these conversations to inform project decision-making going forward.
- **Procurement.** Based on that data, we advised many of our clients to have the materials for their projects produced in full and to store them in locations close to the jobsite so they were readily available as projects restarted. We also developed projection reports on how these circumstances would affect estimating in the near and longer terms.

Focus on learning: With activity slow in some regions, we figured now was the time to take

advantage of training opportunities—both for our own staff and for our clients and partners.

- **CARES Act.** Nearly as soon as it was announced, we engaged ML Strategies and KMPG to lead a webinar for our subcontractors on the US CARES Act, which provided financial support to small businesses. In New York alone, over 150 of our partners attended.
- **Thayer Leadership Institute.** We partner with West Point's Thayer Leadership Institute to provide leadership training for our employees. In April, we were able to extend access to their expertise to many of our clients. The exclusive, three-session series included some of the US Army's most prestigious leaders sharing lessons on everything from managing change, to working in extreme conditions, to doing the right thing in all circumstances.
- **Learning 360°.** Our internal training hub, STO University, has always provided training and development opportunities to our employees. But throughout COVID-19, we stepped up our offerings significantly. We worked with our

trade partners to offer virtual trainings on subjects such as audio/visual coordination, off-site prefabrication, staircase design-build, and MEP coordination using virtual construction, among other topics. In May alone, we delivered over 4,500 training sessions to our staff.

Design impact: We also spoke with our design partners to learn more about the long-term effects they expect COVID-19 to have on the built environment. Since then, we've become a go-to resource for many global clients and partners in helping them inspect and modify their facilities to integrate the health and safety measures this new normal calls for.

And we're not stopping there! We continue to mine our in-house expertise and that of our network of partners to explore new and better ways of working. In fact, we created an organization-wide initiative, **Innovation 360°**, to cultivate and organize those efforts. We're looking forward to sharing more on what we're doing—and hearing from you on how we can work together to move our industry forward together.

WHEN JOBSITE SAFETY GOES DIGITAL

On construction sites around the globe, daily safety discussions are expected—but how effective are those conversations at reducing injuries, incidents, and, now, the spread of COVID-19 on the job?

Two years ago, Dan Saddler, Structure Tone Southwest's VP of safety, realized the traditional, paper-based Job Hazard Analysis (JHA) process wasn't doing enough to inform and engage those closest to the work. Looking for an innovative way to engage the field in daily safety conversations, Saddler partnered with a software developer to try out a potential solution.



Together, they developed a construction safety application that enhances the JHA process. Rather than going through the motions at the start of each shift, field leaders and safety staff were coached on how to lead meaningful safety conversations and asked to capture their safety planning meetings on video. The videos are shared through the app like any social media platform, and workers receive a notification whenever a new video or post is uploaded. Field staff can provide feedback or ask questions from anywhere on the site, right then and there.



After a few weeks of using the app, the safety team created a list of criteria to measure the quality of each safety planning conversation and tailor their coaching to each field leader.

"The app is a field-first approach to the engagement problem we've been seeing in construction safety," says Joe Cribbin, president of Structure Tone Southwest. "By focusing on people, providing training, and concentrating on the first ten minutes of the day, we've made a significant impact on the number of incidents on our projects."

Since launching the app, Structure Tone Southwest's incidents decreased by 25% and field engagement in critical safety systems increased by over 800%—but the value of the app became even more apparent during the COVID-19 outbreak.

When the virus spread to the US, Saddler and his team didn't waste any time in developing the app further to meet their evolving needs. Throughout the pandemic, the STSW team has been using the app to update job-site safety protocols in real time, host virtual safety discussions, and ensure everyone

on-site abides by the new rules. The app houses a COVID-19 audit, where workers are asked to fill out safety checklists and the STSW field teams can check for compliance. Most of the subcontractors had been using the app on other jobs prior to COVID, which made the transition to virtual safety meetings essentially seamless.

"The JHA process hasn't changed in the past four decades, and we wanted to fix the old 'line and sign' system," Saddler says. "No one could have predicted that our initial effort two years ago would prepare us to work safely through a global pandemic."

TEAMWORK AT ITS BEST: Communication and Collaboration on the Job

As cities across the globe implemented stay-at-home orders and limited public activities, the construction industry (among many others) was contending with a slew of unknowns. Do we need to shut down our jobsites? Where do we find PPE? How do we practice social distancing in the confines of our sites?

Despite different governments, geographies, and circumstances, Pavarini McGovern in New York and Structure Tone in Dublin shared a number of strategies for managing the ever-moving targets related to COVID-19—which ultimately helped both companies protect their jobsites, inspire their workers, and help their clients continue to make progress on their projects.

Two heads are better than one. As a shutdown loomed in New York, Pavarini McGovern (PMG) was preparing for how that affected their sites—most of which are massive high-rises. “These projects can’t stop on a dime,” says Ed Lydon, general superintendent for PMG. “We had to get plans in place right away for how we could continue to work safely.”

To do so, Lydon, Marc DePaul, PMG VP of operations, and Sean O’Reilly, PMG safety director, began coordinating immediately with the Contractors Association of Greater New York (CAGNY), the NYC Department of Buildings, state officials, subcontractors, and the unions to determine what kind of work could continue, what health and safety guidelines they should be following, and what challenges they could solve together.

“We needed to make sure our plans could all coexist and that they understood our needs and we understood theirs,” Lydon says.

In Dublin, Structure Tone took a similar approach, working directly with subcontractors and partners on drafting plans, while coordinating with the CIF (Construction Industry

Federation) to ensure all plans and protocols synced up with what the industry as a whole was endorsing.

“Through the CIF, the Irish construction industry agreed on and rolled out protocols consistently,” says Stephen Quinn, Structure Tone Dublin project director. “So once that was settled, we had a backdrop of what we needed to do and how we were going to do it.”

Plan the work, work the plan. Once protocols and guidance were established, training and implementation became the focus—which really boiled down to effective communication.

“We knew we had to get everyone to embrace a whole new mindset,” says Quinn. “So rather than go down the route of telling people to protect themselves, we made it equally about protecting your family and friends at home.”

The Structure Tone team designed a mandatory training module for the principals and senior directors of the subcontractors, who then cascaded that message to their teams. With their long-term, large-scale projects, Pavarini McGovern also created a “quick sheet” version of their training for workers who had already gone through the COVID-19 training before but needed a refresher as they rejoined the jobsite.

Jobsite protocols include everything from sanitizing high-touch areas to actively maintaining proper social distance



PHOTO LEFT ©2020 KAREN FUCHS

“Through our jobsite badging system, we could log everyone who went through the full orientation or the reorientation. It’s been a very effective way of keeping track of everyone,” says Lydon.

Optics also became a key focus on project sites to complement the messages being driven by both the Structure Tone and Pavarini McGovern teams and their trade partners. Temperature taking stations, multiple hand-washing areas, frequent and obvious sanitization and cleaning—these measures were both elements of the jobsite guidelines and visual cues that the construction management team was taking worker safety seriously.

“We really wanted to give them the visual assurance that we are looking out for their well-being,” says Lydon. “We wanted them to see that we were going above and beyond.”

Keep your head on a swivel. The constant updates to the data and guidance surrounding the pandemic also forced project teams to be prepared at all times for quick responses to new circumstances. For example, PMG set up its large jobsites into worker “pods” so that if anyone suspected contact with the virus, PMG could isolate and sanitize that limited area versus an entire 30-story project site.

Structure Tone Dublin instigated a process of continuous improvement as the virus evolved, eliciting feedback from the CIF, the supply chain, the workforce on the ground, and even peers in the industry. In one example, after hearing from workers and the CIF on the pros and cons of various PPE, Structure Tone worked with a local supplier to develop a clip-on face shield that can attach to a hard hat.

“In the early days we were learning and tweaking” says Quinn. “We worked closely with our partners throughout so that when the shutdown ended, we were all ready, with a rock-solid plan, to get back to work safely.

Seize the momentum. While COVID-19 certainly posed new challenges to construction, both Quinn and Lydon see some long-term benefits from the lessons learned.

“When this first started, we were all expecting the new protocols to create massive inefficiencies,” says Quinn. “But we have seen so much more input and planning from everyone from the clients, to the subcontractors, to the supply chain. There is a lot more strategy and collaboration around how to manage a project.”

And while in-person collaboration is always a favorite, Lydon says the virtual meeting will likely remain in place, at least some of the time. “We made it work, and now everyone is used to it,” he says. “It’s nice to know we have this option now and people can keep up to speed on the project without having to visit the site.”



BUILDING HEALTH: Why it's become more important than ever

By Jennifer Taranto, Director of Sustainability, STO Building Group

In the 1970s, as we started to tighten building envelopes in response to energy efficiency demands, tenants started to report nonspecific symptoms—headaches, dizziness, nausea, eye, nose, or throat irritation, allergies, increased asthma attacks, and even personality changes. The media called it “office illness.” In 1986, the World Health Organization (WHO) started using the term “sick building syndrome.” The subsequent decade brought academic studies—and lawsuits—which ultimately culminated with ASHRAE (the American Society of Heating, Refrigeration and Air Conditioning Engineering) establishing regulations that have been incorporated into building codes for acceptable indoor air quality standards.



According to currently **emerging science from the WHO**, the virus spreads through “short-range aerosol transmission, particularly in specific indoor locations, such as crowded and inadequately ventilated spaces over a prolonged period of time with infected persons cannot be ruled out.” In other words, when an infected person coughs, sneezes, talks, and even just breathes, those droplets stay afloat and get inhaled by others, causing infection. Solving the problem

△ Workplace features like living walls help with indoor air quality

Fast forward to 2015 when the Harvard T.H. Chan School of Public Health released the CogFX study. This study empirically showed that green buildings, those with better indoor air quality, improved cognitive function test scores and productivity—something the green building community had claimed for some time, but had little evidence to back up. Follow-up studies have continued to scale the CogFX study and, in early 2020, the focus for building health suddenly went from increasing employee productivity and reducing absenteeism to its role in safely reopening the economy when the global pandemic hit.

through the lens of airborne transmission allows us to better assess the needs of our existing buildings as well as design future buildings to better protect human health.

We must accept that there is no known absolute solution, and our buildings alone cannot protect us. We can use strategies grounded in science to mitigate risk, but we must also alter our behavior and protect ourselves as well as each other—wear masks, social distance, increase disinfection and cleaning, test more, and use contact tracing. Organizations must constantly communicate as changes are coming at us with breakneck speed.

The AEC industry is at the forefront of implementing back-to-work strategies. While

many of our clients are maintaining work-from-home practices for their employees, our industry—construction—was deemed essential early on, and we have gone back to work in our offices. We are wading through the wealth of research, working with landlords to check base building systems, and utilizing best practices found in other sectors, like healthcare, that we can bring into the workplace. We will continue to learn which combination of strategies keeps us healthiest indoors for the long term—whether specifically related to the coronavirus or other health-related issues. But it's clear that health and wellness in the built environment can no longer be considered a fad. Healthy buildings are the key to a new normal, and the pandemic will certainly have long-lasting, positive effects on the way we design and build them.



△ Jennifer Taranto, Director of Sustainability, STO Building Group

PHOTO ABOVE LEFT: GARRETT ROWLAND



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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.

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