Our work touches everyday life.

Spotts, Stevens and McCoy is a family-owned regional engineering, environmental, and surveying firm serving local and global clients. We engineer solutions for a better world. Our work touches everyday life; from the water you drink, to the air you breathe, to the buildings and communities where you live, work and play.

EXPERTISE

- Building Engineering
- Site and Civil Engineering
- Survey, Data Capture and Modeling
- Water and Wastewater Engineering
- Construction Phase Services

@ssmgroup.com

We're here.
We're working.
We're ready.

A Note About Showing Up.

There is so much that we could say right now. There is so much that so many are saying right now. From the emails to the news we join you in all of the feelings of being overwhelmed. We join you in the constant states of trying to understand, trying to learn, trying to find answers, and sometimes- just trying to make some sense of things.

There's so much that we could say right now.
But instead, this month, we want to show up.

Across the world, across the nation, across our communities and across our relationships- people are finding that when push comes to shove, when trial comes to tribulation, and when scary days meet stressful nights- what we need to do for each other is show up.

We've seen car parades and video-chat birthdays. We've seen wedding drive-ins and cul-de-sac happy hours. We've seen math lessons through windows and husbands in bucket trucks just to make a visit. We've seen piles and piles of donations and we've seen bags and bags of handmade masks. What we've seen is that when we feel far apart, we show up bigger, better, and bolder than ever before.

At SSM, we knew from the day that the COVID-19 pandemic began to pose a serious threat to impacting our communities- that our number one job was to show up.

From the well-being of our employees, to the passions of our clients, and to every single project and every single person in between- we are showing up. We're here. We're working. We're ready.

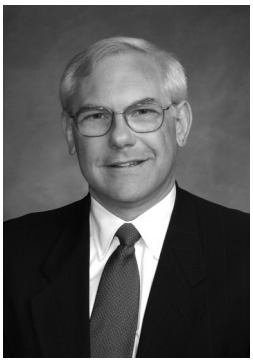
We're showing up for your projects. With technology- cloud-based infrastructure and single-number reach prevent any possible delay in getting the job done. We're showing up for our clients. Virtual coffee breaks, happy hours, and just regular phone calls- all because you matter. And we're showing up for our people- check-ins, work-from-home challenges, and even the occasional pizza delivery. We're showing up because in many ways, things are different. But we know that in some of the best ways, things will always be the same.

This month, this Spottlight, we want to show up for you in one of the best ways we know how- sharing what we know. We've deployed our divisions to help us talk about some of the things we know are on your mind. From environmental to facility- take what you need.

Remember that we're here. Tell us how we can help you. We're working. Our projects and our team members are all moving and continuing to thrive in a variety of ways. And, we're ready. We've got the tools. We've got the expertise. We've got it covered.

Your Building: The Role of HVAC in Mitigating Virus Contaminants

By Director of Mechanical, Electrical and Plumbing Engineering Bruce Bell, PE | bruce.bell@ssmgroup.com



In light of the COVID-19 pandemic, The American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) has assessed the role HVAC systems have in the propagation and mitigation of airborne contaminants. ASHRAE, and other similar organizations, have recently released papers discussing the subject.

As an engineering company that delivers HVAC design services, SSM is providing a summary of the findings for consideration.

In discussing the potential for airborne spread of viruses, the ASHRAE position document states, "HVAC systems may contribute far more both to transmission of disease and, potentially, to reduction of transmission risk." The role of HVAC systems in transmission of disease is obvious. The system circulates all of the air that we breathe. This includes the contents of the air that we exhale.

Typical HVAC Design

Typical HVAC design (for all but medical, R&D facilities, and manufacturing with environmental requirements) meets code-mandated fresh air requirements and provides standard air filtration which captures some airborne contaminants. This typical design is intended to meet the minimum requirements. Exceeding those requirements adds cost to construction and operation. Similarly, we usually design systems to provide an occupied space with temperature and humidity that complies with ASHRAE 55 guidelines.

Fresh Air Ventilation

In specific regard to reducing transmission of disease, the first and most obvious approach is to increase the amount of fresh air introduce for occupants.

Historically, guidelines and codes have varied necessary quantities from lows of 5 cubic feet per minutes (cfm) per person, to 20 cfm per person. It is anticipated that review of these guidelines will again be a consideration of governing bodies moving forward, in light of the COVID-19 pandemic.

The ASHRAE position document states,

"Ventilation represents a primary infectious disease control strategy through dilution of room air around a source and removal of infectious agents (CDC 2005) (…) However, it remains unclear by how much infectious particle loads must be reduced to achieve a measurable reduction in disease transmissions and whether the efficiencies warrant the cost of using these controls. Energy-conserving strategies that reduce annualized ventilation rates, such as demand-controlled ventilation, should be used with caution, especially during mild outdoor conditions when the additional ventilation has low cost. Greater use of air economizers has a positive impact both on energy conservation and annualized dilution ventilation."

It is evident that ventilation is a primary focus in reducing transmission of disease. Increasing ventilation should be reviewed with consideration for effectiveness as well as energy conservation and cost.

Air Filtration

A second area with the potential for great impact is filtration. Use of HEPA filters and those with even higher filtration capabilities can be employed as well as Enzymic Bactericidal filters and Ultra-Violet treatment of the airstream. Utilizing enhanced filtration with efficient filters presents itself to be a viable, and energy-conscious option, as well as UV disinfection systems. As noted with ventilation, consideration should be given to effectiveness, capacity, energy consumption, and costs.

Temperature and Humidity

Recent studies are also focusing on the effect of temperature and humidity and their impacts on disease. On April 2, 2020 FacilitiesNet reported,

"Yale researchers have been able to pinpoint the three ways relative humidity levels between 40 and 60 percent helps to improve resistance to respiratory infection. First of all, the dryer the air the clearer the path is for airborne viral particles, say researchers. Secondly, the function of cilia, which sweep out viral particles from the lining of the airway, improves with a higher relative humidity. And the immune system response is also boosted with higher humidity."

ASHRAE's position report also references one study that found influenza infectivity to be higher (71% to 77%) among low relative humidity (23%). Similarly, inactivation (infectivity of 16% to 22%) occurs at higher relative humidity (43%) rapidly after coughing. It is our recommendation for building owners to utilize existing systems with humidification capacities, or to add humidification to existing systems. This is an upgrade that can be done that does not require an increase to the unit capacity for cooling/heating.

Overall Conclusions

The ASHRAE position document makes several recommendations of which we present one below:

Building designers, owners, and operators should give high priority to enhancing well-designed, installed, commissioned, and maintained HVAC systems with supplemental filtration, UVGI, and, in some cases, additional or more effective ventilation to the breathing zone. Filtration and UVGI can be applied in new buildings at moderate additional cost and can be applied quickly in existing building systems to decrease the severity of acute disease outbreaks. Indoor Air Quality Guide (ASHRAE 2009) contains information about the benefits of and techniques for accomplishing these enhancements.

We understand that each of these approaches has an associated construction cost. Additionally, the cost of operation of the HVAC equipment will increase as improved filtration with higher pressure drops necessitates more fan horsepower, treatment of larger amounts of fresh air increases the load on HVAC equipment, on top of addition of humidification systems.

SSM can assist in the evaluation of your existing HVAC systems, including their capability for employing air treatment strategies and providing the design for implementation of those strategies.

Returning to the Workplace

There are a number of other considerations to think about before bringing people and operations back to your facility. Changing work conditions are a real priority in establishing what will be your organization's "new normal."

A few things to think about:

How will work, work?

It's imperative to begin reassessing the way in which work and productivity will continue to occur. Encourage your Human Resources and Operations departments to collaborate on a plan of action for the next few phases of moving forward. These conversations should include maintaining and enhancing virtual work opportunities, establishing phasing in returning plans, communicating policies and decisions, and addressing the things you wish you would have had in place before all of this occurred.

How will your people come to work?

Consider staggering work times, days at the workplace, and even lunch or other scheduled breaks. All of these can help to reduce the number of employees in your facility at one given time. We recommend considering occupancy sensors the better control your lights, temperature, and ventilation systems in accordance with your new working arrangements.

How will things be at work?

Creating an environment that is social distancing friendly is of high priority for many organizations looking to return to the workplace. From offices to common places, you should begin to develop a plan for how your environment will meet guidelines and recommendations. Ensure that all areas of your space provide an effective opportunity for people to social distance. You will also want to consider establishing new practices that encourage healthy practices. For example, clean desk policies might enable your cleaning crew to better and more efficiently sanitize desk spaces.

Your Building: Air Quality

Depending on how you left your building, mold growth is a real possibility when you return.

Commercial buildings are designed to maintain a consistent interior temperature. The problem with leaving a building unoccupied and controls shut down is that indoor humidity levels increase. The moisture settles in the walls and carpeting, feeding any mold spores that were present.

Similarly, roof leaks or landscaping/ gutters may be a culprit for directing water toward or under your building.

Before moving forward with re-occupying your building, make sure to do a walk-through, looking (and smelling) for any changes in the environment.

If you think your building may have encountered mold growth, contact your Environmental Consultant for a mold investigation. (Bonus- we do that, give us a call if you need us!)

HERE TO HELP

Bonus Resource:

We've put together an entire facilities guide to opening your doors and returning to the workplace. Download it below!

DOWNLOAD NOW

Communication Station

Your constituents live in the Amazon world, where they expect products and information immediately. Every township, borough, and city can utilize free or cost-effective resources to give their community the information they need.

Must haves: website, social media presence, email newsletter, and easy access to forms, documents, and information.

Some of our favorite free tools:

- Facebook- to connect with most constituents. (Tip: schedule your posts ahead of time to save effort!)
- LinkedIn- to connect with your local professional community
- Google My Business Listing: easy to use resource to make it easier to find you online
- Google Meet- for virtual meetings
- Google Sites- if you don't already have a website
- MailChimp- email marketing, free for lists of less than 2,000 emails

NEED MORE HELP?
Contact our marketing team at information@ssmgroup.com

Having the Right Conversations at Your Municipality

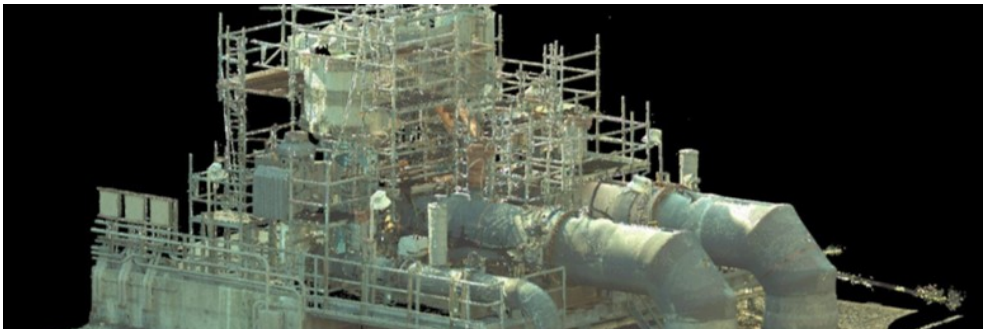
For many during this time, considerations are being taken for what communities will look like in the future. Local governments are facing concerns over declining tax revenue, parks and recreation facilitators are wondering how things will happen if they can't really happen, local leaders and community members are all looking to answer the question, what's next? When the only thing we can be sure of is change.

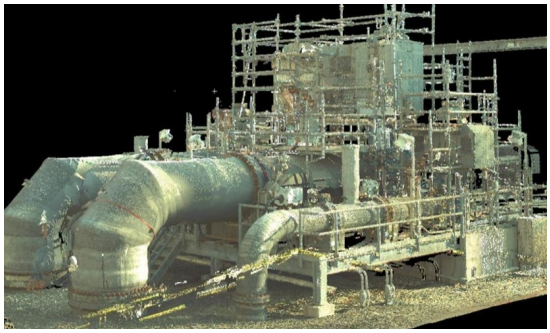
While we encourage municipal leaders to be proactive in their pursuits to address changes and needs in the community, we recommend they not rush into making drastic, long-term changes to zoning or major adjustments to spaces until the future is more clear. An internal taskforce may be a great option for municipalities looking to assess the current situation and future needs.

We recommend these priorities:

1. Compile and utilize the resources and pieces of information available to you through organizations. Use them to further enhance your planning processes.
2. Engage in capital planning for next year. Take stock of your assets and start to prioritize the infrastructure projects that would take priority for next year's budget. Don't forget your MS4 Pollution Reduction Plan BMPs. This is always a good practice; but it's a priority considering the potential impact of the current pandemic.
3. Address your municipality's digital role. Digital applications and submissions have surfaced as a viable and necessary option. Land development applications serve as a prime example. Secure your municipality's stance on what is public and what is not and how these digital adjustments will make an impact.
4. Dust off planning commission rules and municipal planning code for affected projects. Items such as typical 90-day application clocks may be examined by the recent changes in operations. We recommend identifying and solidifying your municipality's expectations in preparation and response to these types of requests.
5. Establish a plan for your municipality transitioning into Red, Yellow, and Green zones. Consider how each will impact your community and establish specific plans regarding transitional periods.
6. Prioritize your ability to interface with the public and your community. Consider virtual office hours for borough staff to touch base. Technology investments and trainings will allow you to manage your communication with the public, as well as make remote communication an effective and on-going practice.
7. Acknowledge what you have learned. What do you wish you would have had in place? Maybe having your assets in the cloud would have allowed productivity to function more effectively. Maybe a more robust digital infrastructure would have made for an easier transition. Where have you found gaps, and what can be done to fill them in case there is ever a next time?
8. Talk to your consultants. Learn about best practices taking place in other municipalities and how you can implement similar actions.

We want you to feel supported. So remember that we're here to help. As a taskforce, navigate what you feel comfortable with and then reach out to us and your other resources with the things that overwhelm you.





Crisis as a Motivator: Having What You Need When You Need It

By Executive Vice President Patrick McCoy, PE, LEED AP, CSDP | patrick.mccoy@ssmgroup.com

There are many reasons we delay executing on matters, particularly some important ones that as company leaders we have strategically identified and prioritized. Remote working, for instance, is one that had been on the radar long before the COVID-19 pandemic. Many have taken steps to gradually institute technology upgrades, make policy changes, and encourage a few people to use it. And then, in less than 2 weeks, around the world organizations migrated to a completely remote workforce.

The crisis forced many to finally, and quickly, execute an important strategic objective that they've been considering for a long time.

What other important strategic objectives linger for your facilities management and operations staff to navigate the next storm?

Has archival storage and electronic retrieval of building site, infrastructure, plans and equipment information been on your list?

For many, SSM has been collecting design phase building information for existing facilities utilizing 3D scan equipment, Revit Modeling and GIS tools. In other cases, the complete, accurate collection of all existing building and site information was identified as a strategic objective for the following reasons:

- Capability to remotely access accurate building plans for emergencies like power outages or unexpected shutdowns
- Remote Facilities Management in conjunction with BMS or SCADA tools
- Collaboration tool to provide continuity of essential facilities operations/ upgrades

What we've discovered as a result of the recent crisis, is that the foresight of the important archiving of existing building information also fostered a great collaboration tool for owners, architects, engineers and contractors to all work through design without the need to physically access buildings.

I recently asked a client for whom we developed a comprehensive site and building model whether the investment provided unforeseen benefits in light of the COVID-19 crisis.

"Our engineering tasks are required to be done remotely. This is the most likely benefit to having the facility fully scanned, to continue with design and construction tasks required by our engineers. I know my engineers are using screenshots to communicate certain field tasks that would otherwise have required them to be on-site. (…) My engineers are also using 2D exports to develop RFQs and getting solid project estimates so we can work through the more time-consuming, administrative, procurement process now. These are all tasks that allow progress when otherwise companies would be at a standstill."

Internally, SSM's design workflow has also benefitted greatly from moving to scan collection in a majority of our projects. One of our senior mechanical engineers shared,

"Our client added some additional scope to our project that was to evaluate and design a new gutter system inside their chiller building. The gutter and associated piping is visible in the scan data, so I was able to add that right in to the REVIT model. If we were just relying on traditional field work, we would never have had that info because it was not part of the original scope of work. Having a scan of the project can be a big time saver and reduce the number of on-site trips needed. Plus- it reduces human error."

Crisis doesn't have to be your only motivator. But, it certainly can be good one. Now that many organizations are progression out of the urgency phase of dealing with the COVID-19 pandemic, we are beginning to have conversations about what have learned, and what we will prepare better for the future.

Taking steps now to finally collect and archive accurate 3D building information and infrastructure through GIS is easier and faster than you may imagine. Executing this objective will offer many-fold benefits for daily operations and crisis management.

Considering Your People

By Eileen Kaley, Vice President and CSO

For many, focus has been on returning to the workplace. But expectations are that remote work will now play a large part in the functioning and operations of many teams.

But maintaining and enhancing these remote opportunities shouldn't mean a decreased investment in employee retention, engagement, and overall well-being. Instead, organizations must consider new, innovative ways to engage employees, foster a team environment, and take care of the needs for effective working.

Investment

As your organization begins to address remote work's long-term role, remember to invest in this work just as you would on-site work. Laptop stands, webcams, as well as microphones are a few examples of priorities you may have for supporting employees' at-home spaces.

Engagement

Being out of the office doesn't take away the value of employee engagement and collaboration. Continue with regular meetings, encourage "keep in touch" conversations, and find new ways to engage your people. Some things we've done at SSM are at-home challenges, virtual competitions, daily updates, and team and company meetings.

Remember- employee happiness plays a vital role in productivity. Prioritize the things you do for your people and they'll prioritize the things they do for your organization.

Being Prepared

For water and wastewater treatment plants, keeping your operators healthy and protected is the priority. Make sure your operators are equipped with the right personal protective equipment and support that they need to continue operating your plant in a safe and healthy way.

Of similar priority, be prepared for the worst case scenario. Make sure you have everything in place to easily transition should someone at your plant get sick. An important first step to take in being prepared is ensuring you have up-to-date operating procedures and guidelines that are readily available.

We hope you aren't faced with this situation. But if you are, we're here to help.

Support Options for Water and Wastewater Treatment Operations

In the event that you experience staffing challenges due to the coronavirus pandemic, SSM has qualified, experienced, and certified water and wastewater management, operations and maintenance personnel to assist and/or backup your personnel.

- Review, update or prepare Standard Operating Procedures and Guidelines
- Conduct a vulnerability assessment and prioritize risk points
- Provide certified operators
- Perform sampling and laboratory procedures
- Provide management services
- Provide administrative services
- Operate treatment plants or provide shift operators
- Operations management and oversight
- Operate dewatering equipment
- Perform maintenance procedures
- Troubleshoot process issues
- Troubleshoot machinery or equipment issues

Call SSM today at 610-621-2000

for help determining how to best prepare for a potential crisis at your facility.

Take a break,

we're here to help.

When it comes to showing up, we know words aren't enough. We want to show up for you in more ways than just these words. Please, send us your questions; share your comments.

Are you free for a virtual coffee break or maybe a happy hour? Let's set something up. It doesn't have to be for any specific reason. It's just- we could all use a little together time right about now.

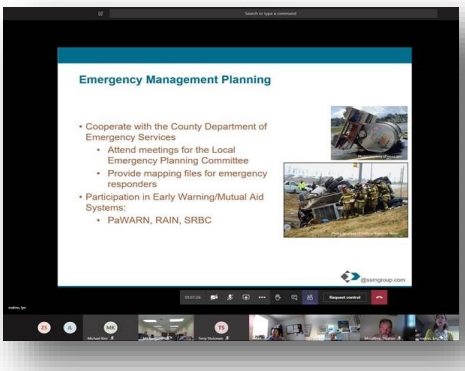
Your needs don't stop, so neither will we.
Here when you need us.

WELCOME ABOARD

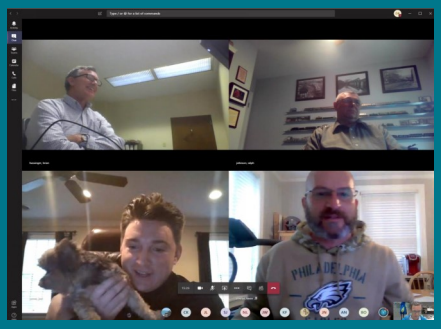
This month, we welcomed two summer interns to our team! Cameron Smith joined us in the Surveying Department. And, Jason Lindsley joined our Information Technology group!

STORIES OF SUCCESS

Lyn Rodino demonstrated how SSM shows up when you need us. She hosted the first Source Water Protection Technical Assistance Program (SWPTAP) steering committee meeting through Microsoft Teams this month!



#SSMworksremote
Like us on Facebook to see more of what working remote looks like for us.



HERE TO HELP