VOLUME 1: COVID-19 AND THE FUTURE OF THE WORKPLACE

WHERE DO WE GO FROM HERE?

MAY 05, 2020

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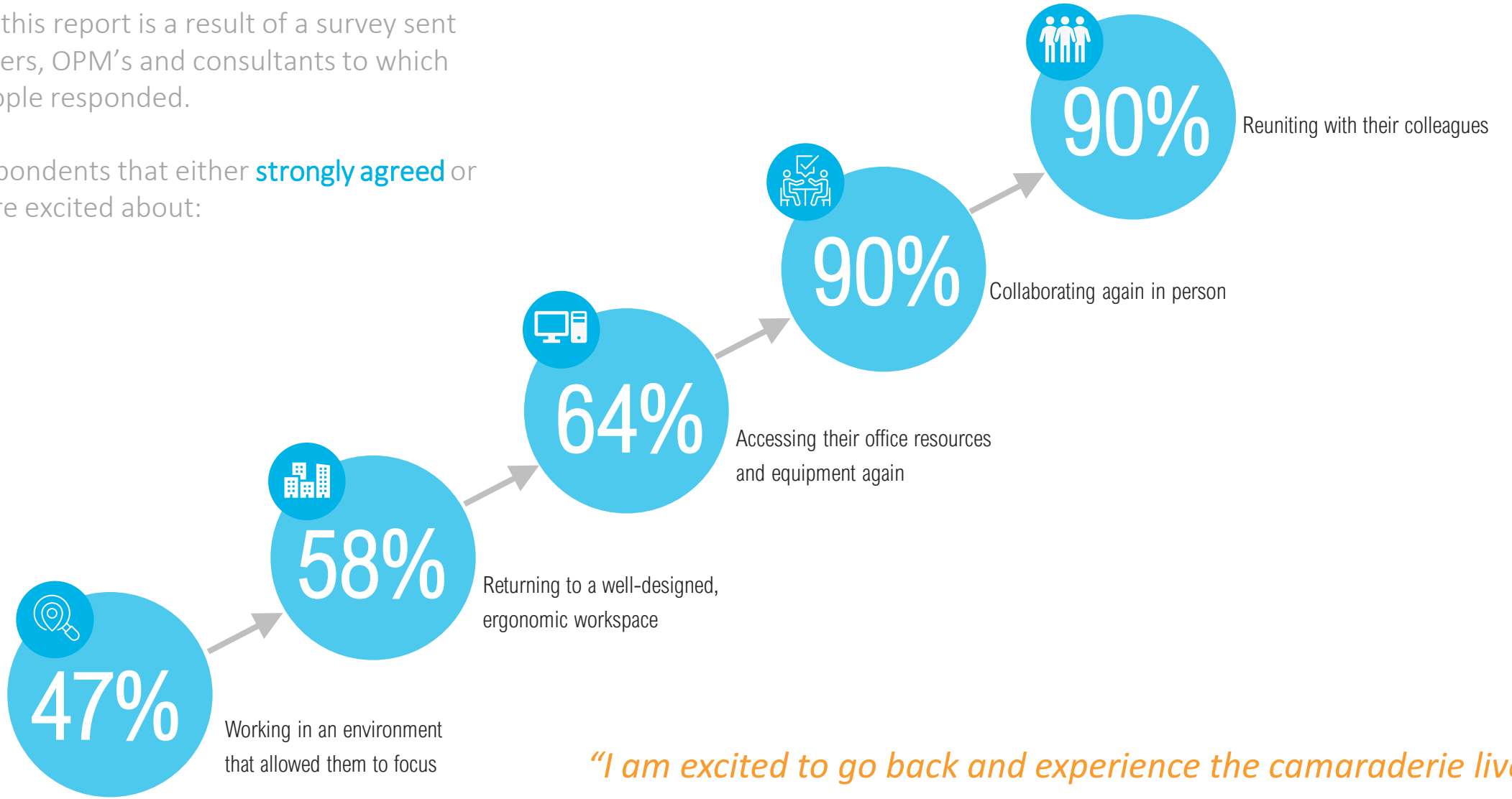
QUESTION: IN THINKING ABOUT RETURNING TO YOUR WORKPLACE, WHAT ARE YOU MOST EXCITED ABOUT?

The data shown in this report is a result of a survey sent to MP clients, brokers, OPM's and consultants to which more than 500 people responded.

The percent of respondents that either **strongly agreed** or **agreed** that they are excited about:



"I am excited to go back and experience the camaraderie live!"

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QUESTION: IN THINKING ABOUT YOUR RETURN TO THE WORKPLACE, WHAT ARE YOUR CONCERNS?

The percent of respondents that either **strongly agreed** or **agreed** that they are concerned about:

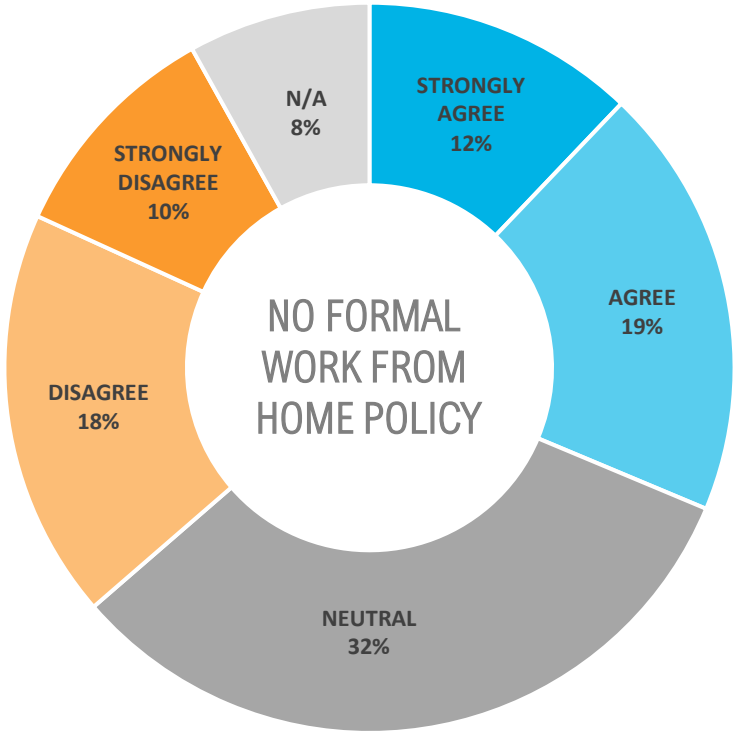
80%
Safety within common spaces (lobbies, bathrooms, kitchens, etc)

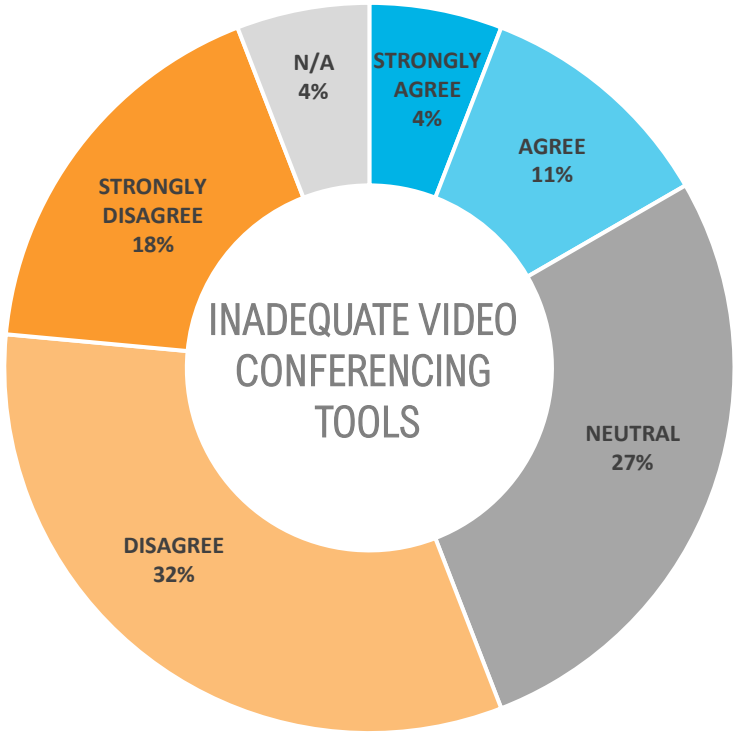
70%
Social distancing within meeting and collaboration spaces

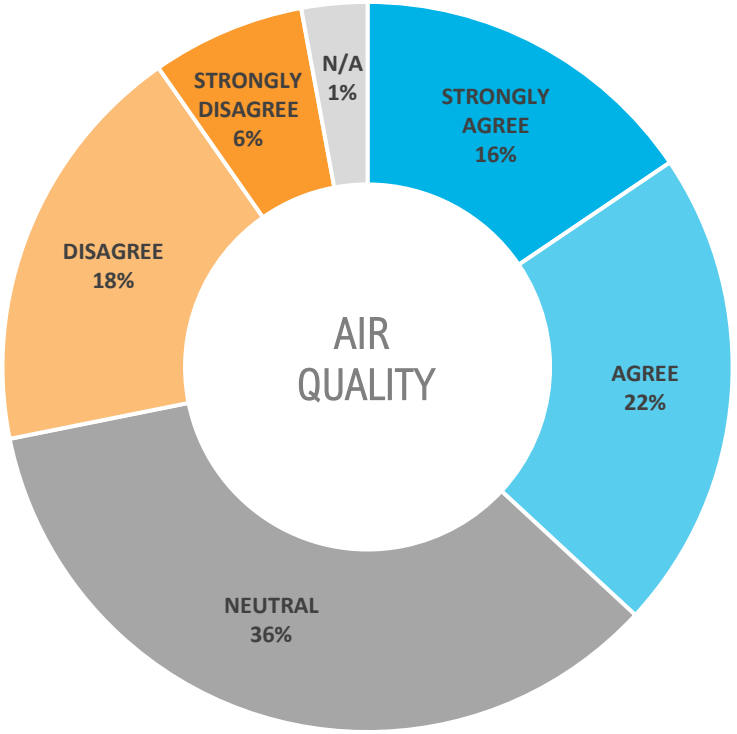
68%
Cleanliness of the work environment

66%
Interactions with the public, visitors, and vendors

60%
Density of their workspace







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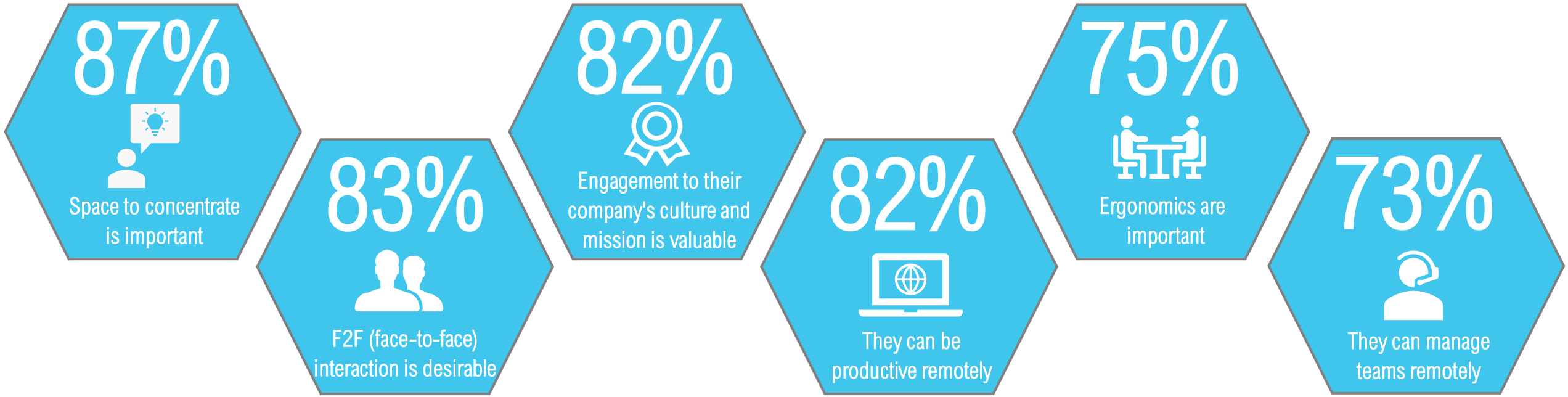
QUESTION: WHAT ARE THE LESSONS LEARNED FROM WORKING AT HOME THAT ARE IMPORTANT TO THE WORKPLACE WHEN YOU RETURN?

The percent of respondents that either **strongly agreed** or **agreed** that:



"I believe WFH periodically is a big step towards balancing the constantly changing dynamic work environment most of us in 2020 find ourselves in."

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RE-THINKING OFFICE BUILDING & WORKPLACE DESIGN

GENERAL OFFICE UPGRADES

- ❑ Use technology to store information in the cloud and eliminate paper in the office
- ❑ Touch free trash/recycling solutions
- ❑ Require masks for all occupants
- ❑ Provide testing for all occupants
- ❑ Install foot-pulls on restroom doors
- ❑ Health and sanitation stations with hand sanitizer/cleaning supplies, etc.
- ❑ Institute a new clean standard for the office
- ❑ Hands-free amenities (coffee makers, water dispensers). App based and/or motion sensor activated
- ❑ Make all restroom doors swing out, so people don't have to touch a door handle as they exit
- ❑ Re-purpose common areas/training areas for more socially distant activities.
- ❑ Control wandering employees by only granting access to certain areas of the space
- ❑ Provide PPE (Personal Protective Equipment)
- ❑ One-way walking paths around an office space to avoid any collisions of people
- ❑ Markings on floors to reinforce social distancing
- ❑ Barista in lieu of self-service coffee
- ❑ Create a new food service strategy to help isolate staff from one another
- ❑ Motorized solar shades
- ❑ ACT vs. Open ceilings for future design

MEP IMPROVEMENTS

- ❑ Improve air quality with dynamic air filtration for HVAC systems. MERV-13 filters (75/85% effective) can be increased to MERV-15 filters (95% effective)
- ❑ Sanitize ductwork
- ❑ Chilled beams vs. VAV systems: Which is better moving forward?
- ❑ UV cleaning toilets
- ❑ Hands free sinks, toilets, urinals, etc. for a fully touch-free environment in restrooms and breakrooms. Put lids on toilet seats.
- ❑ Bi-polar ionization and UV lighting to sterilize objects
- ❑ UV lighting to sterilize the entire space (while there are NO occupants).
- ❑ Increase fresh airflow and balance humidity in the air based on the season.
- ❑ Portable air purifiers
- ❑ Touchless switches
- ❑ Increase general exhaust

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PRODUCT REVIEW

UV LIGHTING – AIR TREATMENT

Ultraviolet light comes in 3 wave lengths UVA, UVB, and UVC. UVC is employed in germicidal irradiation (UVGI) and is effective at inactivating viruses and killing microbial bacteria, two common sources of disease and infection. There are two types of UVGI systems, those that focus on treating the air and those that are intended to treat surfaces. UVGI systems effectiveness are a function of exposure time and the intensity of the source, often referred to as the dose. These are engineered systems and should be designed and commissioned to confirm their appropriate functionality and efficacy.

- ❑ Upper Air UVC devices focus on treating the air in occupied spaces. These systems treat the air at the top of the room which is circulated naturally through convection or through mechanical ventilation methods. The system must be distributed through out the space being served and must be commissioned to ensure that the UVC is not being directed down at occupants within the space. The system is below the ceiling and can be installed into existing spaces. ($2.15/SF)
- ❑ In Duct UVC treats the air as it is being distributed into the space. The in-duct method is concealed from view and can be retrofitted into existing ducted supply system at a fraction of the cost of the upper air system. The criticism of this approach in the healthcare setting is that it does not address transmission at the source, commercial buildings present more dynamic environment that is difficult to control the source and system that reduce overall counts of active viruses provide improved air quality for occupants. ($0.25/SF)

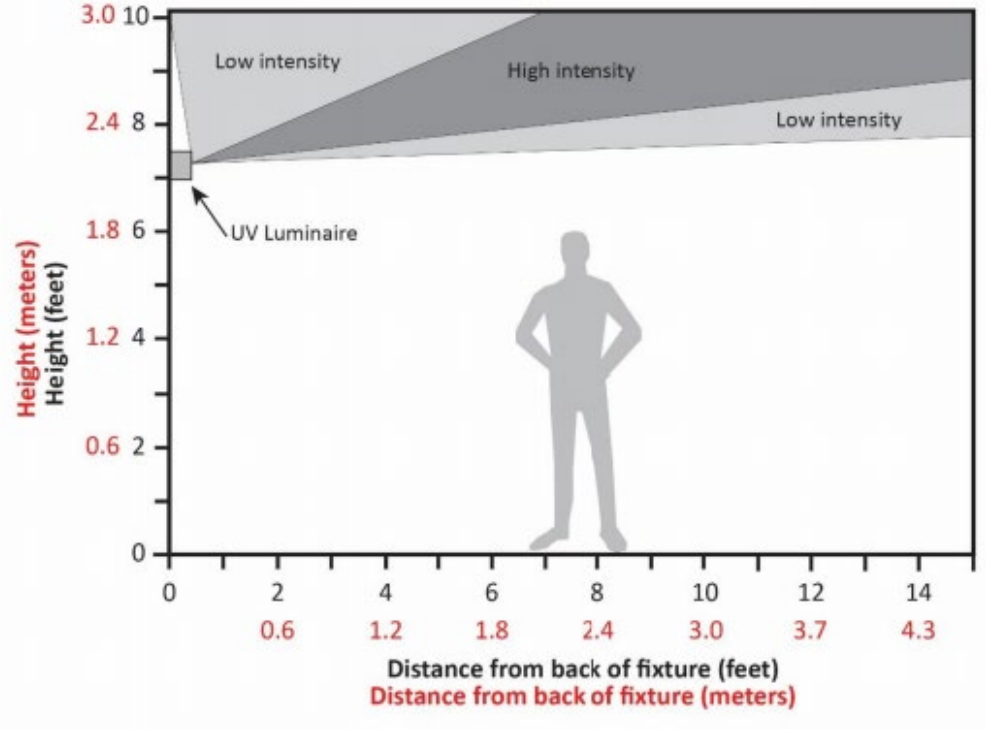

Figure 3-1. Upper-air GUV installation.

Source: 2020 IES Committee Report: Germicidal Ultraviolet (GUV)

References:
-2019 ASHRAE Handbook—Chapter 62 Ultraviolet Air and Surface Treatment
-2020 IES Committee Report: Germicidal Ultraviolet (GUV)
-Decontamination of targeted pathogens from patient rooms using an automated ultraviolet-C-emitting device. Infect Control Hosp Epidemiol 2013

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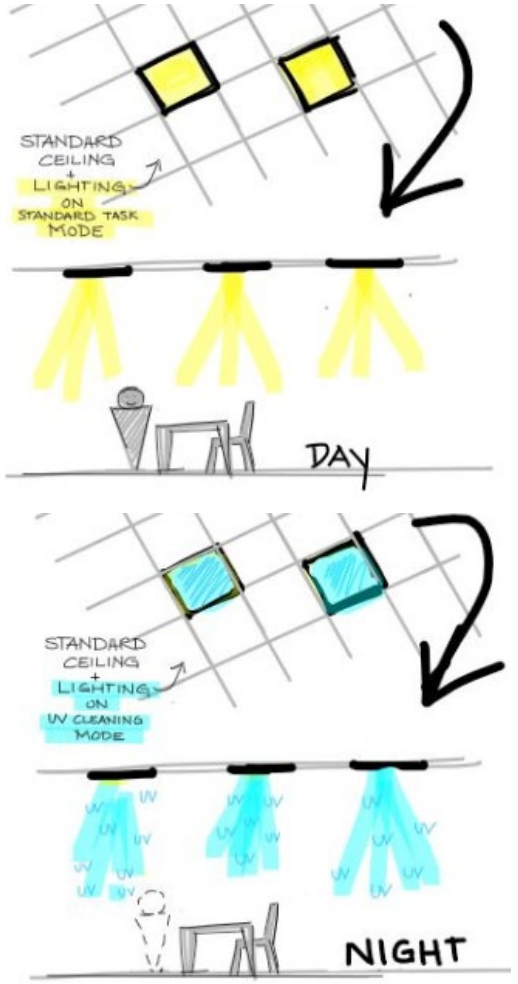
PRODUCT REVIEW

UV LIGHTING – SURFACE TREATMENT

- ❑ Fixed Ceiling mounted direct UVGI lighting can be used to sanitize spaces, but it requires the space to be unoccupied during the cleaning period. It is limited to line of sight, so shadows are created by furniture, personal effects that reduce the efficacy of the system in those areas. Cleaning staff would also need to be trained and may require PPE to protect them from the UGVI system depending on the operation and configuration of the system. These systems require safety controls and procedures to ensure cleaning is done while the space is un-occupied. ($100/SF)
- ❑ Portable UVGI like fixed ceiling mounted require the use of PPE for cleaners or the absence of people in the room being cleaned.
    - UV wands - to treat smaller high touch surfaces
    - Robotic UGVI - to treat more complex rooms and spaces. The orientation and movement allow for more thorough coverage and improved treatment of vertical spaces and surfaces below counters and chairs.
    - UGVI stands - function similar to the robotic UGVI but their static nature require them to moved multiple timed to clean complex spaces and those with furniture and obstructions to the light treatment.
- ❑ UVC is a carcinogen and human exposure should be avoided during cleaning
- ❑ 405nm white light, which is safe for human exposure, has not been proven effective against viruses

Source: Skytron Portable UVC Emitter



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RE-THINKING OFFICE BUILDING & WORKPLACE DESIGN

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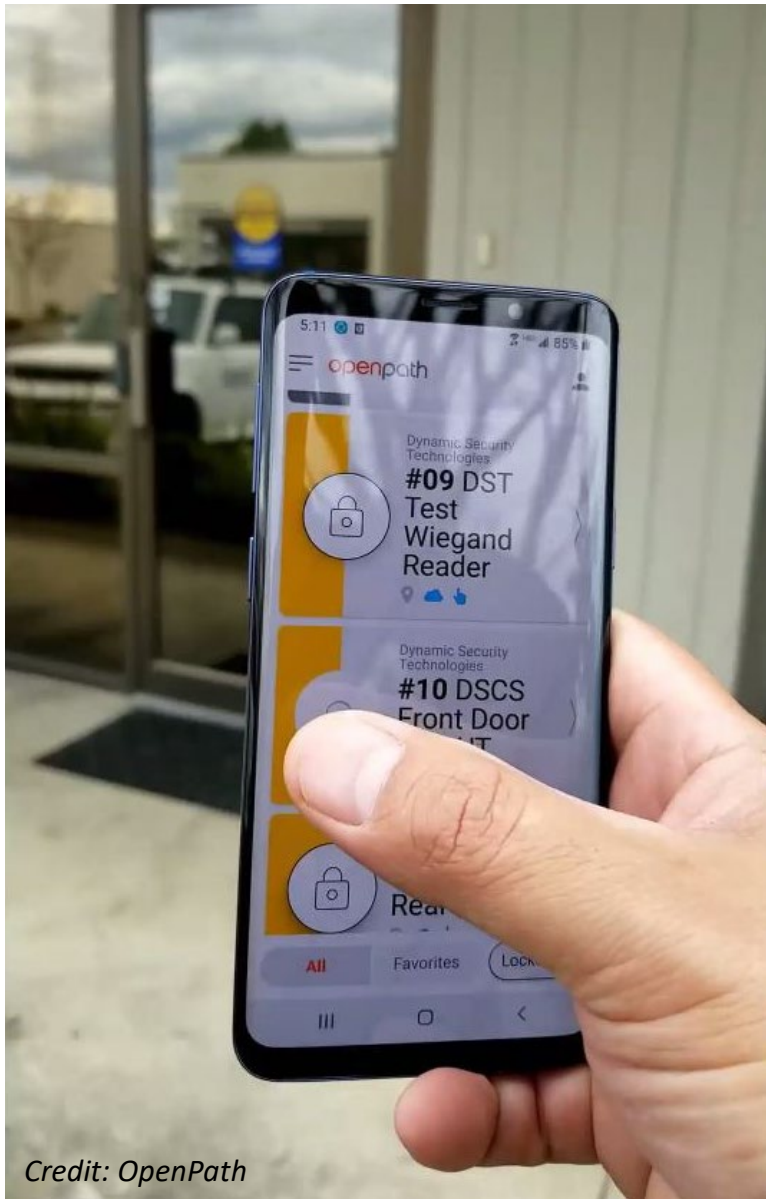
SCREENING & SENSORS

- ❑ Thermal cameras in lobbies for temperature control and monitoring
- ❑ Quarantine areas of the building to isolate illness (off main lobby)
- ❑ Sensors for power operated doors. Apps to activate the unlocking of the doors
- ❑ No touch elevator controls
- ❑ Provide dedicated elevators to stop only on certain floors to help prevent cross-contamination between companies in multi-tenant buildings.
- ❑ Vestibules and revolving doors operated by sensors

INFORMATION TECHNOLOGY

- ❑ Limit the sharing of technology to avoid cross-contamination. For example, eliminating a keyboard and mouse in a conference room space
- ❑ Reducing touch screen AV components. Have people connect with their personal laptops
- ❑ Silver Ion, Nanotechnologies for bacterial cleaning of frequently used items
- ❑ Using sensors to track occupancy to eliminate large gatherings
- ❑ Using technology to screen occupants in the workplace and in common areas as one enters the building
- ❑ Using scanning, and virtual reality to give real estate tour without physical presence
- ❑ Cloud based access control
- ❑ Employees get a laptop/stylus/headset to eliminate shared and distributed materials
- ❑ Increase internet bandwidth for larger number of online meetings



Credit: OpenPath

HOW CAN TECHNOLOGY HELP?

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openpath

REMOTE MANAGEMENT VIA CLOUD/MOBILE

- No-touch access control
- Building management

edenhealth

ACCESS TO VIRTUAL REAL-TIME HEALTHCARE

- Health monitoring
- Health advice

kogniz

SOCIAL DISTANCING AND OCCUPANCY COMPLIANCE

- Temperature and occupancy monitoring
- Help maintain social distancing

enVerid

REDUCE GERMS

- Improve air quality
- Touching common surfaces

RISEBUILDINGS

COMMUNICATE INSTANTLY WITH TENANTS

- Mobile tenant amenity app
- Access control and visitor management systems

enertiv

REMOTE ACCESS TO BUILDING SYSTEMS

- Virtual inspections
- Remote vendor communication

Credit: OpenPath/CREtech webinar

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RE-THINKING OFFICE BUILDING & WORKPLACE DESIGN

WELLNESS

- ❑ Going above and beyond the previous norms for FitWel, LEED and WELL Building standards. Will these go from “nice to have” to need to have, thus increasing project costs?
- ❑ Indoor air quality objectives
- ❑ How many of these health guidelines become code moving forward?
- ❑ Green wall and biophilia can contribute to the air quality in the workspace, and increase employee comfort

SOCIAL CHANGES

- ❑ Limiting people in elevators
- ❑ Does every elevator stop at every floor so that buttons don’t need to be pushed?
- ❑ Eliminating and re-purposing public spaces for the time being.
- ❑ Continue to use web-based meetings in lieu of in-person meetings

BRANDING

- ❑ How to reinforce your brand electronically to clients?
- ❑ How to have a corporate experience and/or client demo remotely? Do people have better camera/lighting technology at home for better remote conference experiences?

FURNITURE SOLUTIONS

- ❑ Provide less chairs in each conference room which will reduce meeting sizes
- ❑ If possible, spread out desks and add privacy panels
- ❑ Occupying the entire space at half capacity is a way to limit close interaction in the office space
- ❑ Replace existing furniture (soft/plush seating) with easy to clean materials like vinyl's, plastics, faux leathers and other non-porous surfaces
- ❑ Antimicrobial materials
- ❑ Specify furniture that allows for cleaning between seats/cushions and seat backs to avoid hard to clean areas
- ❑ Do we re-visit the unassigned seat theory? Does unassigned seating allow for more cleaning vs. having materials at the office that inhibit a deep clean?
- ❑ Are seats assigned on a weekly basis with a deep clean at the end of each week? Daily clean?
- ❑ Use sensor technology to assign seats to people when they enter the workplace
- ❑ Can height adjustable desks be controlled by Bluetooth on your phone so you don’t have to touch the adjustment buttons?
- ❑ How will healthcare products and materials be possibly introduced into the office environment?
- ❑ How will these temporary adjustments evolve into a long-term solution moving forward?

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PRODUCT REVIEW

FURNITURE

Lessons from our healthcare studio, how to provide furniture in public areas that is easy to clean minimizes infection risk. In addition to reducing the number of seats to encourage the recommend six feet for physical distancing, here are some ideas to help minimize the risk for infection lobbies, waiting areas and gathering spaces.

- ❑ Specify high performance upholstery fabrics that are bleach cleanable, anti-microbial & moisture proof such as Crypton, Vinyl and Polyurethanes. Use of vinyl & polyurethane on seat and arms are ideal for ease of cleanability, while using woven fabrics on vertical surfaces for texture and pattern.
- ❑ Arm caps create another seam which become difficult to clean and harbor contagions. If specifying seating with a non-upholstered arm, solid surface arm caps are recommended. Wood arms are not recommended as wood furniture is inherently porous and easily damaged by normal use and harsh cleaning products.
- ❑ Consider seating with an open back design, a visible clean out or concealed clean out for prevention of debris buildup and ease of cleaning.
- ❑ Seating with narrow legs and open space below seat allows for ease of floor cleaning.


IMPERVIOUS & BLEACH CLEANABLE FABRICS IDEAL FOR SEAT AND ARMS
NARROW LEGS AND OPEN AREA BENEATH THE SEATING PROVIDE FLOOR CLEANING ACCESS
USE TREATED WOVEN FABRICS ON VERTICAL SURFACES
SMOOTH HORIZONTAL SURFACES PROVIDE EASY CLEANING
FURNITURE WITH OPEN BACK OR DEDICATED CLEANOUTS MAKE FOR EASIER CLEANING
STANIFORD
DIRECTORY
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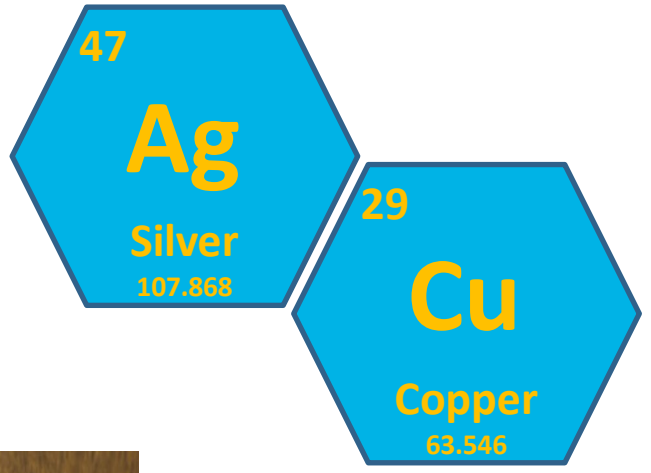
PRODUCT REVIEW

ANTIMICROBIAL SURFACES

- There are a wide variety of antimicrobial products, none of which have been tested specifically of COVID-19. Anti-viral products are most likely to be effective and you should avoid antimicrobial surfaces that focus only on bacterial contagions as they do not affect viruses.
- When evaluating your building / office seek out touch free solutions to high touch points. Where those are not available or not feasible, antimicrobial films, metals, fabrics may offer improved performance inactivating the virus on high touch points.
- The effectiveness of the antimicrobial material is often diminished in wet conditions, colder temperatures and through any soiled surfaces that create a barrier between the anti-microbial treatment and the virus. Keeping these touch points clean and dry is still a priority in limiting the spread of the virus and these products do not eliminate the need for a strict cleaning regimen for the building.
- These products do not sanitize the surface instantaneously. High volume touch points still require occupants to wash their hands and the materials should be supplemented with a daily cleaning regimen. These products help reduce viral counts and should be considered as a part of a comprehensive approach to reducing the risk of infection in commercial buildings.



Silver Nano Particle Film
Silver Defender.com

Hands Free Auto Door
Dormakaba.com

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INFECTION CONTROL RISK ASSESSMENT (ICRA)

COVID-19 has transformed how we think about the places work and has put infection control at the forefront of that conversation. Our healthcare experience provided a starting point, using a common hospital Infection Control Risk Assessment (ICRA) tool to create a process that evaluates your current workplace.

- ❑ The evaluation identifies areas of increased risk of infection and forms the basis for the development countermeasures unique to your workplace and follow through on their implementation.
- ❑ The dynamic nature of the pandemic will require a post occupancy evaluation of the plan's efficacy and the need to adjust as more research becomes available to shape access and operational aspects of your re-activated workplace.
- ❑ This process allows for a customized solution based on the risks that are unique to your workplace and the broader context it resides in, providing the long-term flexibility to adapt to new information as it becomes available.

ICRA Workplace Process

1. Form an Interdisciplinary Team
2. Identify and Categorize Risks
3. Map the Risk
4. Develop Countermeasures
5. Implementation Plans
6. Review and Adjust

Room Name	Risk Level	Contributing variables
Annex Workstations	I	
Proposed Countermeasures	• Limit occupancy to work stations with 6' clearances between employees • Initial return limited to 25% and transitioned to a max of 50% • Masks not required at work stations	

Sample room assessment and proposed countermeasures

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RE-THINKING OFFICE BUILDING & WORKPLACE DESIGN

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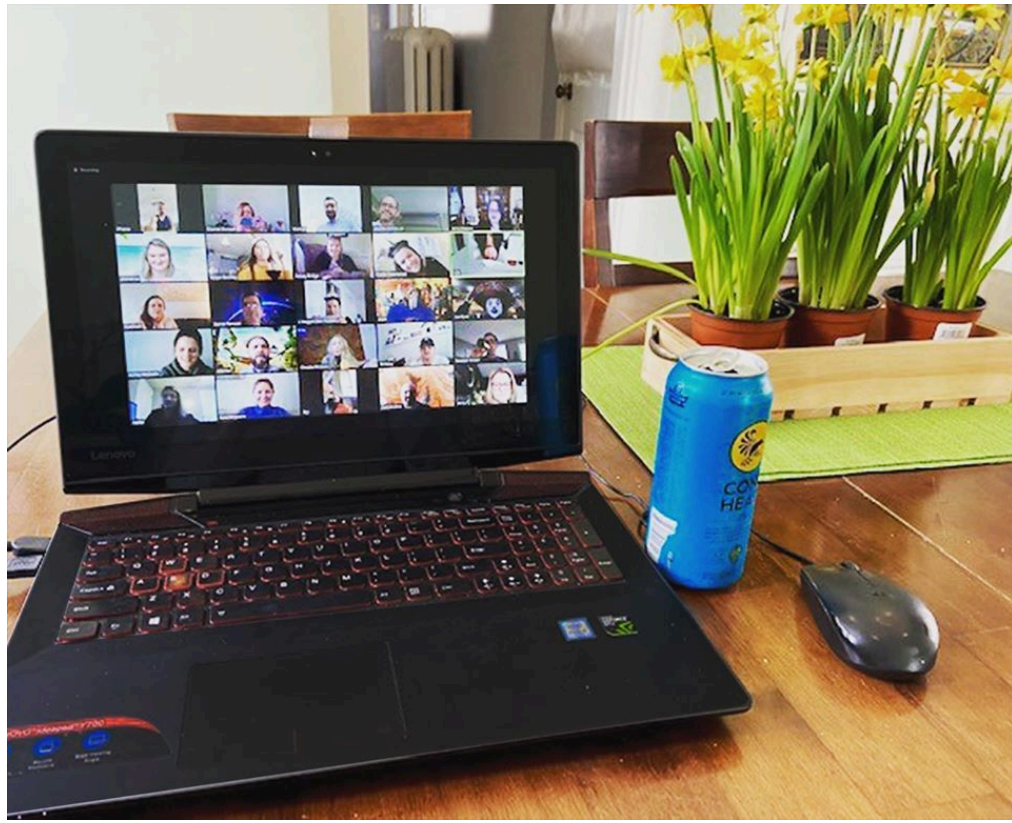
HR & REMOTE WORK STRATEGIES

- ❑ Be proactive with adjusting sick leave policies?
- ❑ Integration of a permanent work from home policy? With sporadic returns to the office?
- ❑ Flex hours and working in shifts? Example: Group 1 works M/W/F from the office, Group 2 T/Th, and Group 3 is remote and will come in on an as-needed basis.
- ❑ How much monitoring of your staff is crossing the ethical line?
- ❑ Legal issues with the upcoming changes in monitoring and policing the workplace?
- ❑ Will there be a “sheriff” of the workplace to enforce new rules? New concierge role in offices?
- ❑ Will people be able to bring materials from home to the workplace, like lunches that get stored in a shared refrigerator?
- ❑ Will amenities be personalized, made touch free, or continue to be shared?
- ❑ How to make sure people feel safe when they return to the workplace
- ❑ Embrace the changing need for technology
- ❑ Childcare for parents returning to work
- ❑ How does this change your companies interview priorities? Questions about health and safety over amenities will rise by prospective employee
- ❑ For continued work from home strategies, help employees to enact ergonomic workspace standards to their home to promote health and wellbeing



WHERE TO START?

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NEXT STEPS TIMELINE

STEP 1: IDENTIFY THE LOW-HANGING FRUIT. WHAT CAN BE DONE NOW

- ❑ Employee mapping study. Analyze current office layout with social distancing measures enforced. What is the new headcount?
- ❑ Furniture modifications/movements
- ❑ Cleaning/sterilization
- ❑ Re-purpose common areas
- ❑ Advance WFH technologies with IT upgrades
- ❑ Filtration for HVAC
- ❑ Provide masks/test kits for employees if possible
- ❑ New plumbing fixtures and appliances
- ❑ Door hardware upgrades
- ❑ Create social distancing plans and infographics for staff to use.

STEP 2: WHAT NEEDS TO BE DONE SOON?: REMAINDER OF 2020

- ❑ Sensor integration
- ❑ IT upgrades continue
- ❑ Change out furniture
- ❑ MEP upgrades
- ❑ Build additional small offices

STEP 3: WHAT NEEDS TO BE DONE IN THE FUTURE?: 2021 AND BEYOND

- ❑ Re-thinking the workplace design and program
- ❑ How will the future of your new way of working affect your needs in the office?
- ❑ What will your new HR policies look like?
- ❑ Where should your office be located and how big should it be?
- ❑ How will the temporary solutions evolve into a long-term solution?

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DAY-ONE CHECKLIST FOR PREPARING TO RETURN

PHYSICAL

- ❑ Use only seating at workspaces or meeting areas that allow an unoccupied radius of six feet.
- ❑ Gatherings to be limited to ten people or fewer, maintaining six feet of clearance
- ❑ Until testing is universally available, plan on 50% maximum occupancy, depending upon the physical configuration of the workplace. Many people are looking at 25%

BEHAVIORAL

- ❑ Require masks in all common areas (bathrooms, lobbies, elevators, stairs, corridors, parking garages, etc.)
- ❑ Work hours to be staggered to avoid transportation and entry/egress congestions
- ❑ Those with documented health issues should be encouraged to work from home
- ❑ Any food to be delivered in self-contained packages
- ❑ Communal refrigerators to be off limits
- ❑ Encourage the use of stairs to limit elevator use. DO NOT PROP OPEN EGRESS DOORS.
- ❑ Encourage frequent hand washing; provide soap and hand towels or hands-free dryers

OPERATIONAL

- ❑ Workplaces are to be thoroughly disinfected before re-opening, and nightly thereafter
- ❑ Security in buildings to be conducted from behind a physically separating barrier, and shall limit the number of people in the lobby to prevent proximity closer than six feet
- ❑ Require masks for all occupants in public spaces
- ❑ Install hand sanitizer and wipes in all common areas
- ❑ Indicate one-way patterns of circulation in lobbies, corridors
- ❑ Waste bins to be placed outside all bathroom doors to encourage disposal of used hand towels after touching bathroom door hardware
- ❑ Egress stairs to be opened for use to relieve elevator congestion, indicated as “up” or “down” direction of circulation

WHAT'S NEXT? WHAT IF? WHEN?

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FOOD FOR THOUGHT

- Who pays for the upgrades in technology and how to prioritize those investments?
- Who pays to upgrade the home workspace if OSHA standards for safety and connectivity apply to home offices?
- Does the government provide tax breaks for health and safety excellence in the workplace?
- Do companies increase the SF per person, or do they keep the same workspace, but with half the people?
- For these mounting infrastructure and technology costs, does the landlord pay, or does the tenant pay?
- What will buildings have to do from a technology standpoint to keep their buildings safe and attractive to tenants?
- How will the building code change because of this pandemic?
- Health obligations to staff? Healthy vs. privacy
- Initiatives that would have been too costly in the past are now potentially essential
- More people in the organization will have a say in the office workings moving forward
- What will your emotional response be to your employees? What will make them feel comfortable coming back to the office?
- What happens to parking garages/lots that might only be half utilized?
- Do you build additional smaller 80-90 SF offices? Demising is costly.
- Will companies focus on offices spaces with lower rents as working from home become more prevalent?
- How will this pandemic positively effect integration of technology and reduction in travel time and costs?
- Looking long-term, how far can you push your flexibility in your office design?
- How will landlords respond to tenants with building transparency on how the space is performing from an air filtration and humification standpoint?

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Design for the way YOU work.

www.mparchitectsboston.com

308 Congress Street, Boston, MA 02210

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