A FACILITIES MANAGER'S GUIDE TO REOPENING AND OCCUPYING BUILDINGS SAFELY

WHAT NEEDS TO BE DONE NOW, SHORT-TERM, AND LONG-TERM

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PART ONE: INTRODUCTION

FMLink is proud to present this resource to its facilities management readers to help them identify what must be done in their facilities to get them occupied safely, minimizing the risk caused by the spread of the coronavirus.

Many facilities managers are struggling with the immense task in front of them–how to get our facilities back to some semblance of normal in this era of the coronavirus. A few facilities have remained totally opened, while most others are either fully closed or partially open with skeletal staffing. Before we reopen them fully, we need to believe that the occupants will be safe from the novel coronavirus, which leads to the COVID-19 disease. The facilities manager's role, of course, is what can be done to keep the virus from spreading within our facilities. This guide is based on research from many sources—all content focuses on how to make our facilities safe for the occupants.

As countries around the world have dealt with "lockdowns" except for essential workers, they have been monitoring multiple numbers to determine whether it is safe to reopen facilities to the general public and end the lockdowns. To do that, they have studied:

- The percentage of the population that has been tested
- The percentage of the population that has contracted the COVID-19 disease
- Whether there are enough testing kits available
- Whether there is an adequate supply of personal protective equipment (PPE)
- Whether there are enough hospital beds
- How soon a vaccine may be available

It is most strange that one more item is not on the list in determining whether facilities should reopen or not:

- Will our facilities be ready so workers, customers, visitors, and suppliers can enter them safely?

When one starts to look at all that must be done to make our facilities safe, one legitimately can question whether we are ready to open them. At first glance, all that needs to be done to our facilities is a deep cleaning, make sure people space themselves out (*social distancing*), and figure out where those who don't fit are going to be located. But as we examine what must happen, it gets much more complicated, and it will take time. Before our facilities will be ready to reopen, there needs to be *planning*, *coordinating*, *procuring*, and *doing*. This guide will go into detail to identify all the steps that should be taken.

First, a few words in general about this virus….

As we know, the virus can spread through droplets generated when an infected person coughs or sneezes, or through any discharge from one's nose. It is spread most when these droplets get onto someone's hands, which in turn may rub the mouth, nose or eyes and thus enter the body. But they also can spread by getting onto surfaces that later get touched.

Other than the preceding paragraph, this guide will not go into detail about the virus, nor will it discuss all the ways to practice good hygiene to protect ourselves and others, nor will it identify hand-washing and mask-making techniques or other valuable practices that apply to the common public. These are all over the internet for everyone to read. Rather, this guide will focus on what we, as facilities managers, need to know to keep our facilities safe and people out of harm's way.

We also will not identify guidelines to protect special types of facilities, such as those related to healthcare and education. The discussion in this guide will work for these facilities as well, but additional guidelines will need to be applied for each type. Facilities managers from these types of facilities are encouraged to search for information on the web and through websites from specialty associations and organizations, which contain extensive information.

It is important, however, for facilities managers and all others in a facility to identify the key symptoms of the virus. The reason is simple: we need to stop the spread of the virus at the earliest possible moment. So we need to identify the person, get him or her quarantined (separated from others), identify who else may have come in contact with that person (*contact tracing*), and when appropriate, get the individual tested. Each organization should have a procedure in place to make that happen. It likely will be from a health group within the organization if it has one, but at times, it could fall upon the FM's shoulders. To that end, all in the facility, including the FM, should be aware of the most frequent symptoms, which are identified in *Table 1*, from CNN.[1]

This guide does not wish to replicate the already existing resources that address the reopening of the buildings. Many are quite tactical and present comprehensive checklists about one or more of the facets of reoccupying the buildings. Rather, this guide will enable you to understand the overall picture, and from that, you will be able to identify the best strategy for your company and your buildings. The best strategy for your company likely will be somewhat different from those of others; similarly, because of specific attributes of your building, the strategy for it likely will be different from that of other buildings in your company's portfolio.

So, instead of focusing on just *how* to prepare each component of your facilities, we'll help you understand the underlying principles so that you will identify *what* considerations must be made, and then how to go about doing them. If you will need more detailed information on "the how," we'll provide you with links to go directly to the specific pages in other resources.

Table 1: 10 Coronavirus Symptoms

There are more than the "top three" coronavirus symptoms that are listed below. A CNN report identified 10 symptoms in April 2020. We summarize them here:

1. Shortness of breath. Related: persistent chest pressure or bluish lips or face
2. Fever
3. Dry cough
4. Chills and body aches
5. Sudden confusion
6. Digestive issues
7. Pink eye (conjunctivitis)
8. Loss of smell and taste
9. Fatigue
10. Headache, sore throat, congestion

Not all facilities managers who read this guide will be in the same place in terms of bringing their facilities back online. Furthermore, most facilities cannot just get back online by simply turning on or off a light switch. Rather, it is a process. First, the facility needs to be prepared (or prepped, if you prefer). Second, some staff will gradually start to fill it. Finally, it will be at its new capacity, which for many, is still to be determined, but will be less than it was "pre-COVID-19." In other words, by phasing the reentry to the building and defining specific goals for each phase, one is more likely to have a successful (and safe) occupancy.

So, *PART TWO* of this guide is devoted to three strategies that facilities managers should implement to ensure that their facilities are safe from the virus. The first strategy identifies what needs to be done to get a facility occupied again—this is for those whose facilities have been mostly unoccupied during the pandemic. Much of what is identified can be done remotely.

The second strategy is for the facilities managers from the first phase who now are ready to start the reoccupation of their buildings. However, for other facilities that have remained partially open to accommodate essential personnel, and others that may have already started to reopen more fully—the facilities managers of these facilities will need to make sure they have gone through all the previously identified steps (Phase One) for the facilities that were closed, and then go through the additional steps identified for partially occupied facilities in Phase Two.

The guide then transitions into the third strategy—what needs to be done once the facilities get occupied up to the level of *the new normal*. These numbers likely are not yet defined. Pre-coronavirus, it would have meant full occupancy, but I'm not sure any of us knows for sure what that number will be—it will depend on the results of our ongoing evaluations as the buildings become occupied, coupled with new insights from global health organizations. The numbers are expected to be smaller than previous occupancy levels for two reasons:

- Social distancing guidelines, where people must keep a minimum of six feet or 1-1/2 meters from one another, will result in lower population densities in the workplace.
- Many organizations will discover that many office workers can perform equally effectively from either their homes or satellite coworking facilities.

This third strategic component also includes preparation for a second round of the coronavirus, should it occur.

PART THREE of the guide goes into more detail about many of the key elements of operations that impact the facilities manager. These include topics such as floor layouts, cleaning, HVAC, new rules for the workplace, working from home and other remote locations, and implementing safe controls to minimize workplace risk. It also summarizes all the modifications to rules and procedures that likely will be required.

The last section of this guide (*PART FOUR*) is devoted to resources to help you go into more depth for any of the topics presented. Many of the concepts in *PARTS TWO* and *THREE* of this guide are discussed in more detail in these resources, should you need them. We also identify comprehensive checklists and supplies you will need. More than including just a name and a link to a resources website, we locate the webpages that should be of most interest to you, and then link to those; we also provide a description of what you can expect to find there.

We recognize that each facility is different, and therefore, readers will have to carefully review each point to see whether it applies to their facilities. Use the Resources in *PART FOUR* if you need more information.

Many articles and webinars about the coronavirus in the workplace are in the public domain, and each of them offers something of value to the facilities professional. These come from government agencies, industry

associations, outsourcing companies, design firms, furniture companies, and a few others. There also are more than 50 articles on FMLink (and still growing) related to the coronavirus—we let you know how to find them.

As time passes, more information about the virus will be known, and more resources will become available. So, it is imperative for the reader to continue the research here, which should serve as a solid foundation to what needs to be done to bring one's facilities back online, safely and effectively.

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[1] CNN

Sandee LaMotte, C. (2020). *Coronavirus symptoms: 10 key indicators and what to do.* Retrieved 9 May 2020, from https://www.cnn.com/2020/04/20/health/10-key-coronavirus-symptoms-wellness/index.html

PART TWO: STRATEGIES FOR GETTING THE BUILDING FROM MOSTLY VACANT TO POPULATED

Three strategies must be developed by facilities managers to protect their buildings from the coronavirus: the first should be started right away as it focuses on what needs to be done before the building is occupied. The second is as the building is getting occupied; and the third is as the building nears its new normal. All should be incorporated as a part of the strategic facilities plan. In *PART THREE*, we delve into detail for some of the concepts.

The strategies apply to all facilities, although some may not be as important for small facilities. For specialized facility types, such as hospitals, healthcare, educational facilities, manufacturing plants, etc., there likely will be additional factors. These specialty types of facilities are beyond the scope of this guide, but the basics described here should still apply. In many cases, the specialty types of facilities have their own professional associations, which have further information; more can be found on the web.

Also, many local governments have issued additional guidelines. As a rule, they should not conflict with any of the advice in this guide, but you may need to supplement the advice by what they are requiring.

PHASE ONE: THE STRATEGY FOR *NOW*, BEFORE THE FACILITY IS REOCCUPIED

If the building is closed now, the strategy you develop must identify the steps to reopen the building; complete as many of the steps below as you can before the building reopens, and then the remainder as soon as possible thereafter. If your building is already partially or fully open, be sure the steps identified below have been completed before you go on to the Phase Two strategy (all may not apply to your facility).

Each grouping below for Phase One contains multiple concepts and tasks that should be considered and evaluated:

ASSEMBLE RECOVERY TEAM

- According to NIOSH (the National Institute for Occupational Safety and Health), "A qualified workplace coordinator should be identified who will be responsible for COVID-19 assessment and control planning."[2] This person is not necessarily within the facilities group, but often will be either there or in the health group. This individual, who must be easily identified and reachable by all workers in the facility, must be aware of all federal regulations relating to the pandemic, including guidelines put out by the CDC and OSHA.
- Put a facilities team together to address all steps identified below, putting them into an action list. The team should have the ability to access not only staff within the facilities group, but also management, vendors and contractors, landlords (if any), and the organization's employees (in the event of a necessary communications mailing).
- A member of the team should have access to external information sources (including the workplace coordinator) to enable the ability to stay on top of new news that is disseminated. Prepare a list of all contacts and their contact information.
- Once an action list has been developed, determine whether any budget modifications will need to be requested, and if so, get that ball rolling.

1. Assemble recovery team
2. Modify building systems for limited capacity building
3. Conduct preventive maintenance to optimize HVAC
4. Conduct cleaning to get building ready to open
5. Obtain cleaning and sanitizing supplies for when building opens
6. Modify floor layouts to accommodate new social distancing guidelines
7. Procure videoconferencing equipment, sensors
8. Plan for changes to security and facility access points
9. Develop special rules and guidelines
10. Communicate the new plans to building staff
11. Develop a transportation/commuting plan to building staff
12. Determine how to phase the reopening of the facility
13. Prepare for a second round of the virus, just in case
14. Develop a plan to evaluate what has been done
15. Stay ahead of the workload curve

- If you are in a multi-tenant building, coordinate with other tenants so your plans and theirs have overlap where necessary, especially with the common elements that you share, including building entrances.

MODIFY BUILDING SYSTEMS WHILE THE BUILDING HAS REDUCED OCCUPANCY (TEMPORARY)

- If part of the building is not in use, you may want to close off or adjust the setback temperatures for portions of the building's heating, ventilating and air conditioning (HVAC) system, which should save a bit from your utility bill (just be sure you check with management to confirm that these spaces will be unoccupied and confirm which hours occupants may be in the building; also be sure the different temperatures will not harm any equipment). Before feeling too good about potential savings, beware that you likely will need to spend some savings on the supplies and modifications identified below. This task will need to be adjusted during each major change in occupancy.

- Be sure your security system and emergency systems (generators, fire detection and sprinkler devices, etc.) are operational by frequently checking them and conducting essential maintenance. This task will need to be adjusted during each major change in occupancy.

- Be sure you have additional air filters on hand, as they will need to be changed more frequently. Filters should have adequate MERV ratings (minimum of MERV 13 and ideally HEPA filters rated for MERV 16 (if they will work with your system). Increasing the percentage of fresh air intake is recommended as well. If the building has fewer occupants, it is okay to change the setbacks, but you probably don't want to decrease the volume of air being pumped into the workspaces.

CONDUCT MAINTENANCE REQUIRED BEFORE BUILDING IS OCCUPIED

The American Industrial Hygiene Association (AIHA) has published a guidance document for facilities recovering from building closures[3]. It points out that maintaining indoor environmental conditions is of primary importance, as building systems were not designed to operate under heat loads without occupants and running at abnormal temperatures and humidity levels. Otherwise, there is a risk of mold in occupied spaces and the HVAC systems. Building water systems have similar issues if they do not have water running through them. Cooling towers also need to be operated.

- Identify what must be maintained now, so that equipment and water supply do not deteriorate. Care must be taken to ensure that equipment and pipes remain lubricated and free from mold, dust, and contaminants.

- If it hasn't been used in a while, the plumbing system may need to be flushed—see the CDC guidelines for preventing Legionella and mold[4] in *PART FOUR: Resources*. Determine what testing needs to be done. Sloan, a manufacturer of plumbing systems, published a guide on how to clean out pipes[5] to remove contaminants.
- While the facility is in standby mode, does an exterminating company need to be brought in? Do plants and grounds need maintenance or watering?
- BOMA, CDC, ISSA, OSHA, Cushman & Wakefield, and Eden have particularly good checklists for what maintenance specifically needs to be done (see *PART FOUR–Resources*).

CONDUCT CLEANING REQUIRED BEFORE BUILDING IS OCCUPIED

- Identify what must be cleaned and sanitized now, before the building is reoccupied (both regular and deep cleaning). See *PART THREE* of this guide for more on Cleaning.

OBTAIN CLEANING AND SANITIZING SUPPLIES

- Order cleaning and sanitizing supplies now that will be needed to get your facilities modified to accommodate the new rules that you expect the facility to have. Because these are difficult to procure, do not delay this order.
- Don't forget about decals or tape for social distancing, hand sanitizers, extra cleaner for wiping critical areas such as tables in the cafeteria, wipes, and more. A good list of what types of products to get may be found on the CDC website (see *PART FOUR: Resources* for more, especially CDC, ISSA and OSHA).

MODIFY FLOOR LAYOUTS

- Analyze your floor layout to determine whether you will need to keep some workstations vacant so social distancing can be maintained, or whether you want to consider different types of workstations, or just rearrange the ones you have. Develop revised floor plans as needed. If hallways and aisles are narrow, you may want to consider requiring one-way traffic in them or widening them.
- Identify high-touch areas where touching can be reduced or eliminated, such as door handles, light switches, elevator buttons, railings, etc. If touching can't be helped, provide sanitary wipes or liquid hand sanitizer for these areas. Some of the high-touch areas can be replaced by motion or weight sensors, which can be procured now. See the detailed section in *PART THREE* for more on Floor Layouts and Circulation.

PROCURE VIDEOCONFERENCING EQUIPMENT, SENSORS

- Besides the sensors mentioned above, additional communication and other electronic/smart devices can enable more teleconferencing and less travel. Increase videoconferencing capabilities and make more use of electronic whiteboards (which can be transmitted through wireless) and ensure that no markers or pointing devices are shared (people should bring their own). Sensors can be used to monitor traffic in the offices so that when there are more than a certain number at one time, an FM will be notified. Some

communication devices will be needed for work-at-home staff now; more will be needed in the facility when it reopens; and more should there be a second wave of the coronavirus, as many predict.

PLAN FOR CHANGES TO SECURITY AND FACILITY ACCESS POINTS

- Guidelines will be required for admitting visitors and staff to the buildings. Determine if any additional IDs, temperature checks, or immediate past-travel history will be required. Consider facial recognition devices and try to make entry more of a touchless experience.
- Develop procedures for shipping and receiving goods out from and into the facility.
- Determine whether you need stanchions to control queues at access points, such as security stations, reception, and elevators and escalators.

DEVELOP SPECIAL RULES AND GUIDELINES

- Strategies for minimizing the spread of the virus should result in the development of rules and guidelines for workers coming back to work; this must be done in sync with guidelines being put out by various government entities.
  - The strategies should address social distancing; when to allow visitors and how many at a time; how to conduct meetings and which types of meetings are to be considered non-essential; rules on how many people may be in a meeting room at a time; what types of travel should be eliminated; when and how to notify others when someone may have virus symptoms as well as what should be done with the individual, etc. Consider policies not to admit visitors during the times staff arrives, to reduce congestion at checkpoints.
  - Special rules may need to be developed for all aspects of use of elevators and escalators. Most of these are based on social-distancing requirements and will cover the queuing to get onto them as well as how many people may be on an elevator at the same time. Floor decals and stickers may be required.
  - Determine which amenities will need to be closed or have special occupancy guidelines (e.g., meeting rooms, fitness centers, cafeterias, break rooms, and lunch areas). For cafeterias, consider requiring the use of paper bags for placing diners' masks so no mask touches the table; bags would be provided by the facility.
  - Hang up appropriate signage by each space that is closed or has a limited capacity.
  - Communicate all new rules and guidelines to staff in the facility.
- Will employees and visitors need to have their temperatures checked or require a special ID to gain entrance to the building? If so, there will be space requirements that must be considered, as well as a place to queue. Keep in mind that thermal scanners are the fastest way to have temperatures checked; to speed up the process in the building, some companies are leaning toward allowing some employees to take their temperatures at home, enter them into a database, and then be allowed to pass through security without having to take their temperatures again.
- All building employees should be trained to recognize symptoms of the virus and report both themselves and others if they suspect someone may be infected (see the Table in *PART ONE* that identifies the symptoms).

COMMUNICATE THE FACILITIES PLAN FOR THE VIRUS TO ALL BUILDING STAFF

- Develop a <u>communications plan</u>, starting now, to let <u>workers</u> know what the facilities management group is doing, so that:
    - They are informed as to what the facilities group is doing, and they get the message that the company cares about its employees; be sure to communicate that there are action elements for both the organization and the staff to do—without both participating, the recovery will take longer. It is good for the organization to send out frequent reminders of good habits to the staff.
    - They will see how the "rules of behavior" will be modified, at least for a while, so they can be better prepared.
    - They will have confidence in the facilities group and in their safety.
- Consider a <u>weekly newsletter</u> to keep building employees apprised of what is being done about the virus. Think about sharing interesting statistics about what you've learned both within the company and from outside. Include information about which areas seem to have congestion problems (if you are tracking that), ideas about reports of some staff not being as careful as they should, ideas about how to make things work better (as learned from others in the building, perhaps through a suggestion box). Consider Q&A and ideas sections from employees.

DEVELOP A TRANSPORTATION PLAN FOR THE WORKERS

- Depending on where your building is located, you may want to consider <u>how employees will get to your facility</u>, especially if public transportation may be involved.
    - Public transportation brings safety and social-distancing issues, putting your employees at possible risk.
    - You then must consider various alternatives, of which each has ramifications; for example, private vehicles need a place to park, leasing office or coworking spaces in satellite areas close to where employees live, and encouraging more work at home. All of these require advance planning.

DETERMINE HOW TO PHASE THE REOPENING OF THE FACILITY

- Develop a <u>phasing plan for reopening</u> the building, including any amenities. This should include whether the facilities group will need time to modify and prepare the building for occupancy, and if so, coordination with top management and the health group (if one exists) to come up with the timing for the FM group to prepare the building in relation to when it will open.
- The plan should identify which <u>staff</u> will be returning to the facility and when. Also, determine how any new rules will need to be communicated to them and who will do that.
- The plan should identify when all <u>amenities</u> will open and whether there will be occupancy restrictions imposed on them (cafeteria, fitness center, daycare, etc.).

PREPARE FOR A SECOND ROUND OF THE CORONAVIRUS

- As Phase One winds down, <u>evaluate what worked best and what needs to be done differently</u> should there be a need to work remotely again. It is important to be prepared if there is another round of the

pandemic. If the organization is prepared, it will be more likely to operate as smoothly as possible, having learned from past experiences. As a part of the evaluation, don't forget to survey others outside of the facilities group to see what they would have wanted done differently. Also, determine what could have been done differently in the home and satellite environments to make them more productive, including the telecommunications equipment, computer hardware and software, security, etc.

- Allow that there may be a need for a quick evacuation or shutdown of the facility soon after Phase Two starts; for example, there may be some cases of the virus discovered in one section of the facility. If this were to happen, you must have a <u>procedure in place for a quick shut-down.</u> Identify what must happen to trigger that as well as which individuals need to be involved in that decision.

DEVELOP AN EVALUATION PLAN FOR PHASE TWO

- Develop a very <u>structured plan to evaluate the strategies</u> put into place once the building starts to be occupied in Phase Two. These evaluations will become the basis of any strategy modifications as you go. The evaluations may comprise surveys, solicitation of comments from staff and management, and collection of data to determine how space and amenities are being used, as well as safety and health feedback. This plan should continue well into the final occupancy phase (Phase Three).

STAY AHEAD OF THE WORKLOAD CURVE

- Take advantage of any extra time you may have available to catch up and get ahead. This is necessary as once your building reopens, you likely will have a greater workload that you typically have had—you will be dealing not only with all the changes in *modus operandi* caused by the virus, but will likely have work to catch up on while the building was closed. To help you get a bit ahead of the curve, we have identified three types of tasks that you can do now:
  - o Most of us have a list of tasks to do "on a rainy day"—this could be one of those times. One of these tasks that most can do remotely is to <u>analyze your departmental data</u>, such as work order processing efficiency, benchmarking to compare your building to those of others that are similar (including within your own company if it has multiple buildings), efficiency of space utilization (although this may be changing due to social distancing), etc.

  - o The chances are high that when workers return to the office, there will be new <u>statistics to track about the modified workspace</u> due to the new guidelines and rules. Examples include space utilization rates, number of vacant desks, number of meetings / attendees, number working at home, number of workers for each shift, energy costs, etc. You should start identifying and preparing these reports, and determine how you will be collecting the data.

  - o Many also have a list of <u>tasks to do once they get back</u> to their facilities. Some can be done remotely at this time, such as preparing memos to send, reviewing bids for work, etc. This would be a good time to get these started, so you'll be able to catch up on other tasks once you get back to work.

Once the building is partially opened, the strategy remains similar. Before proceeding with the tasks below, make sure that each of the Phase One items has been addressed.

It is likely that guidelines from the CDC and other organizations controlling the relaxation of rules leading people back to work will not be removed all at once. Rather, it likely will happen gradually. For example, only certain types of workers may be allowed back initially, such as those essential to the organization (this is different from essential workers such as first responders and the like), or those least at-risk to have the virus or be affected by it. Workers and visitors may need to wear masks for a while. Workers considered at-risk may not be allowed back in Phase Two. Regardless of how staff-phasing is accomplished, the facilities manager must be prepared and respond accordingly. Some Phase One tasks will need to be adjusted, and then, as more workers (and visitors) start entering the building, readjustment may be required. The facilities team will need to schedule regular meetings to reassess these adjustments and determine when they should be done.

Phase Two is primarily a reassessment phase. Many determinations and decisions were made during Phase One. Now they need be evaluated and adjusted. The whole time, the facilities manager must be thinking about two situations:

- What needs to be done to help the building get to the new normal, in terms of occupancy (i.e., Phase Three)?
- What have I learned, so if we need to lock down the facility again, workers will be as productive as possible, whether working from home or from satellite offices?

BUILDING EQUIPMENT

- As the facility populates, all building equipment should be getting back to normal operations.

CLEANING

- The building should be getting back to its normal cleaning schedule, except that initially, the facilities manager must determine which areas may need a particularly deep cleaning and special sanitizers. Apply guidance from the CDC and professional cleaning associations. Some areas may need to stay on a deep-cleaning schedule for a while longer.

PHASING OF REOPENING

- If not done already, plan when different sections of the building should be reopened, including to public areas and shared areas, including the cafeteria and other amenities such as the fitness center and daycare facility. Will rules governing use and spacing need to be developed, including rules for social distancing, and marking distances with tape at places where people may congregate?
- Reassess phasing and plans for the future that were developed in the Phase One strategy and modify them accordingly.

COMMUNICATIONS AND VIDEOCONFERENCING

- Reassess which <u>communication devices</u> may need to be modified or added.

RULES AND GUIDELINES

- Reassess the <u>rules for workers and visitors</u>, including social distancing, how and where meetings are conducted, where visitors may meet and whether visitors must wear protection, travel, and more.

BUDGET EVALUATION

- Determine whether additional equipment, furnishings, or supplies will be required, and be sure they are included in the <u>budget</u>.

COMMUNICATION UPDATES

- Keep <u>communicating to all staff</u> throughout the process, until the building is fully staffed.
- Reassess the weekly <u>newsletter</u> updates, and see how they need to be modified.

"Fully operational" does not mean getting back to the occupancy pre-coronavirus, as it is likely that social distancing guidelines will still be in place to a certain extent. Thus, in this guide, we'll call "fully operational" the "new normal" for our facility. In Phase Three, we define what will be different than before, and what we can expect.

While none of us can say for sure what will be different in the way we work, all facilities professionals should be thinking about how the work environment will change, and then prepare for these changes. This is not a one-and-done task—rather, as we go through the transitions described by the second strategy above, we should frequently reassess each of the possible changes below. The process is an iterative one. Then, when we identify something new, we will add to our list of differences. More will be said about many of these changes through this guide, especially in *PART THREE*, where we go into some of the most important details.

SHARED WORKSPACES AND WORKING FROM HOME

- Determine if and how <u>teleworking</u> should expand its role.
- Determine if and how <u>hoteling</u> and sharing of desks should expand their roles.
- Many people have been teleworking during this pandemic, and we see that it can work for more people than before. With that said, there likely will still be a need to <u>come into the office, but how frequently and for how long</u>?
- Each of these points will have a major impact on the <u>future of the workplace's design</u> for your facility.

SOCIAL DISTANCING AND SPACE UTILIZATION

- Will <u>social distancing</u> continue?
- Should <u>workstations</u> become larger, have either a barrier around them, or have at least six feet of separation between them?
- Or will <u>space costs</u> dictate otherwise, and with the (hopefully) unlikely occurrence of another such pandemic a few years down the road, will such social distancing become overkill in the long term?
- The totally open space with multiple people working on long benches may start phasing out a bit, even though these are very efficient from a <u>space utilization</u> perspective. See *PART THREE* for more on office layouts and workstation trends. Calculate what all this means in terms of total space required for your facilities.

CLEANING AND DISINFECTING

- How will the <u>frequencies of cleaning</u> various portions of the workplace be changed? Will workers be there in shifts? How does this impact daytime cleaning?
- What <u>types of cleaning products</u> should be used?
- What kind of <u>janitorial staff and contractor training</u> should be required?
- Will there be more <u>hand disinfectant dispensers and wipes</u> placed around the workplace, and how will they be incorporated into the overall design?

Phase Three: What to Assess and Modify

1. Shared workspaces and working from home
2. Social distancing and space utilization
3. Cleaning and disinfecting
4. Working in shifts
5. Teleconferencing and travel
6. Need for temporary space
7. Long-term space inventory (leased, owned, coworking, telework)
8. The home office
9. Evaluation (ongoing)
10. Round Two of the coronavirus

• The American Industrial Hygiene Association (AIHA) has published a guidance document for workplace cleaning[6] in non-healthcare workplaces. They also have published resources focused on specific building types such as restaurants and fitness centers—these may be of value to facilities managers whose buildings contain cafeterias and gyms. Among their recommendations:

- Use only HEPA filtered vacuum cleaners, to avoid aerosolizing respirable dust that may contain infectious pathogens.
- For deep carpet cleaning, use hot water injections that continually deliver water above 140ºF (60ºC). Be sure to use EPA-registered disinfectants approved for porous or upholstered fabrics, and not to do this during normal work hours.
- Use of foggers is generally discouraged and should not be a substitute for applying disinfectant directly onto a surface. The EPA does not recommend fogging[7] to control COVID-19: "Fumigation and wide-area spraying are not appropriate tools for cleaning contaminated surfaces."

WORKING IN SHIFTS

• Will one solution to the social distancing be that people will work more in shifts, so there will be fewer people in the office at any one time?
- Will each shift have staggered start times to further decrease the opportunities for congestion at building checkpoints?
- How will these options impact space requirements?
- How will they impact the cleaning schedules?
- What about the electric bills for lighting and HVAC? Might they go up if utilities are kept on for longer?
- Will maintenance staff need to be present for more time, perhaps meaning the need for more staff?

TELECONFERENCING AND TRAVEL, INCLUDING IN OWN FACILITY

- What about travel to conferences or other office locations? Will this be cut back, meaning people will be in the office for more days?
- Will there be more teleconferencing to reduce travel?
- If so, will additional teleconferencing facilities need to be added to many buildings?
- Will there be more technology added to the office space, which in turn will create more of a need for electrical and internet access?
- Will long-term limits to the number of people in a conference room be established (as they are for many during the pandemic)? If so, will there be a need for more but smaller meeting and conference rooms?

NEED FOR TEMPORARY SPACE

- Will there be more of a need for very <u>short-term, temporary space</u>? This may enable workers to maintain their social distances should a large project require many people to be working at the same time.

LONG-TERM SPACE INVENTORY—OWNED, LEASED, COWORKING, TELEWORKING

- Most real estate and law firms are projecting that the coronavirus will negatively impact the ability of businesses to operate in their leased spaces:
  - [Arnold & Porter](#)[8], a leading law firm, says that governments are requiring closures of certain types of buildings, and that some landlords are doing it voluntarily. In an owned building, the owner has more control of what is kept open in the building. In a leased building, there may not be many remedies for the tenants, as most leases state that rent payments are a legal obligation when the building is closed by forces beyond the landlord's control.
  - Law firm [Baker Donelson](#)[9] states that force majeure provisions in commercial leases allow postponement or suspension of the performance of certain landlord duties.
  - [JLL](#)[10], a real estate services company, has seen leasing volumes having slowed, and most tenants are preferring to renew rather than move to different space.
- Will coworking space (sharing space with other organizations) work for your organization? Determine for which situations that will work best, and what the requirements will be. Identify possible locations, both near to the main company facility and where employees live.
- For which types of employees will teleworking be most appropriate?

THE HOME OFFICE—SPECIAL CONSIDERATIONS

- For those who work at home, how will the workplace accommodate their needs for <u>furniture</u>?
- Will there be more <u>types of furnishings and accessories</u> to address home office needs, especially to address ergonomic and storage requirements?
- And then there will be the long-time questions of <u>who pays for it</u>, what conditions should apply for one to be eligible, <u>who is legally responsible</u> for what, <u>who maintains the furnishings</u>, what happens to the furnishings <u>when the employee leaves the company</u>, and what arrangements are made for <u>phone, internet, and teleconferencing</u>.
- There is much more about the home office in *PART THREE*.

EVALUATION (ONGOING)

- Phases One and Two included much information about <u>evaluating all aspects of the changes</u> being made to accommodate the workers and visitors in the "new facility," brought on by the pandemic and its impact on workers, the building, and its furnishings and equipment. That evaluation must continue for the foreseeable future, with considerable data collected and put into reports for the facilities manager to analyze. Analyses should be scheduled at regular monthly intervals, looking not only at raw data, but at trends. That is the only way that one can evaluate:

- o Whether the changes made are appropriate.
- o If additional changes are needed.

ROUND TWO OF THE CORONAVIRUS

- All prior <u>evaluation notes and survey results</u> from Phases One and Two should be collated and analyzed.
- Based on the above analysis, a <u>formal plan</u> should be developed should a second round of the pandemic take hold. If it does, one can assume that there will be more quarantining. And if there is, every organization should be prepared to swiftly move into appropriate action for its workers to work remotely. Each worker should have a good solution to immediately work from his or her home by having the appropriate:
  - o Computer hardware and software
  - o Telecom equipment
  - o Videoconferencing access
  - o Ergonomic furnishings
  - o Ancillary equipment

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[10] JLL

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In *PART TWO*, many concepts and ideas were surfaced. Some will apply to certain facilities, while others will not. There are several of these that would benefit from further elaboration, and they are discussed in more depth here in *PART THREE*:

- **Floor layouts and circulation.** Social distancing will dictate many changes to the workspace layouts and to how people use circulation space (aisles and hallways).

- **Cleaning.** Cleaning and disinfecting may be the largest concern of many staff, after making sure they maintain a safe distance from anyone with COVID-19.

- **HVAC.** Clean air may be assumed, but it is something the facilities manager must be sure to provide.

- **New rules and guidelines.** Many rules and guidelines were described in PART TWO. We attempt to summarize them here.

- **Working from home.** Until the lockdown ends, most will be working from home; after it ends, many likely will still be doing it. There are very special requirements here, for workers to remain productive.

- **Implementing safe workplace controls and minimizing worker exposure risks.** This is a summary of the OSHA guidelines that impact facilities.

FLOOR LAYOUTS AND CIRCULATION

Modifying the floor layouts and circulation may be the most challenging problem of all:

- Many fewer workers will be able to fit in the workspace, which means a solution will be needed for the remainder.
- With fewer workers present, teams may not be able to stay intact, impacting productivity.
- The physical changes to the workplace will take time to design, money to purchase new furnishings, and time to wait for them to arrive.
- The ultimate solution (design) will need to work not only while social distancing is a concern, but will need to work after the pandemic subsides, so the whole space will not have to be redesigned again.

Steelcase's *Navigating What's Next*[11] makes the excellent point that the dominant characteristics of the pre-COVID workplace were designed to support "high levels of human interaction to fuel creativity, innovation, speed and agility." These very same attributes pose challenges for what we will face next. According to Steelcase, the pre-COVID workplace includes:

- Open plan
- High density
- Shared spaces
- High mobility (to encourage people to move freely around the workplace)
- Communal spaces

Surely, much of this will need to change—in fact, these principles may even be considered the opposite of the post-coronavirus workplace. In the areas where today's workplace is composed primarily of open plan, it likely will benefit from professional interior design—a service that may need to be contracted out. If so, there is no time like the present to start looking for a solution. This will not be easy and will take time, not only to find the designers, but perhaps to order furnishings and get them installed. And, since the coronavirus probably was not considered when developing the 2020 budget, there will need to be approval for any related expenditures as well.

A new layout will be imperative for every open office space, and some enclosed ones, especially those with two or more workers. Six-foot spacing will render many open office layouts untenable.

- One less expensive and more of a short-term interim open office solution will be to leave every other workstation empty, as in a checkerboard; of course, if the workspace were fully occupied pre-COVID, then many will still need to work remotely, either in coworking satellite space or in their homes.
- Another interim solution is to place moveable screens or file cabinets between workstations; while these are not necessarily attractive and can seem claustrophobic, they will be safe.
- Many other aspects of the office will need to be modified—even in-boxes are affected: these should be located at least 6 feet from a workstation's occupant.

Any new layout should be easy to clean. Workers should leave their worksurfaces empty at the end of the day so they can be disinfected daily. If new furnishings will be obtained, they, too, should be very easy to clean and disinfect; where appropriate, they should be pre-treated with anti-microbial coatings.

Layouts should be easy to reconfigure not only for when needs change, but because of your FM team's post-occupancy evaluation of what arrangements are working best for the occupants (and which need to be modified). Also, what works best for one type of group may not work best for another. All layouts must consider the needs for connectivity—both electrical and to the internet. Steelcase identifies three key strategies to reconfiguring the workspace:

- Density (space utilization rate)
- Geometry (how the furniture is arranged)
- Division (use of barriers and screens)

Immediately, as the office becomes reoccupied, to preserve social-distancing requirements, there will be fewer workers at one time. All workstations without barriers or screens between them will need to be reconfigured. Workers should never be facing one another without a barrier. If a workstation is shared by having multiple shifts, rules will need to be established about how to sanitize the workspace upon leaving, and places to store sanitary supplies will have to be designated for the general office workplace. Signage and stick-on decals can be used to keep workers separated and define preferred circulation routes.

There are now devices that can identify where each worker is at any point in time (through wi-fi and Bluetooth technology); these are implemented often through phone apps. Although the technology has been available for a few years, it has not been widely accepted because of privacy concerns; often, where it has been used, it has been in "anonymous" mode so the facilities manager can see where people are (in terms of density), but not exactly who was where. Now, this technology may need to be used in non-anonymous mode for contact-tracing purposes; that way, should someone be identified with the virus, it will be known who has been in contact with that individual for that and the preceding days. If such a device is used, regular evaluations of the data should be

scheduled to see if certain building areas are prone to traffic congestion and what can be done to alleviate the congestion.

RXR Realty[12], a developer and property manager, is developing a social distancing app that measures how far away you are from others and then gives you a score at the end of the day. Those who keep over six feet away most of the time get the best scores.

Cushman & Wakefield developed "The Six Feet Office[13]" to help ensure safe social distancing. To understand the concept, imagine a 6-foot-radius circle embedded in the carpet, centered at one's seat at a workstation. No one should be allowed to enter this space when the chair is occupied. Aisles and circulation must be outside of this area. Travel should be clockwise around the office, so people don't pass each other too closely when they are going in opposite directions. Regardless of the specific solution for your office space, it will need to be thought through in advance.

Any new planning should try to incorporate the use of sensors to eliminate high-touch areas as much as possible. This could be sensors to open doors, turn on lights, open shades, elevator controls, and more. Some of these will be activated by sensing weight (floor sensors), sensing light pattern changes, or even by using phone apps to control items in individual workstations or get one through security.

Rules will be needed for potential areas of congregation such as breakrooms, as well as where copiers are located. Some of these spaces may need to be removed if it is determined that workers likely will not obey the distancing or no-touch rules. Similarly, you may need to reduce capacity of large meeting rooms by removing some of the seating; rules for how to enter and exit conference and meeting rooms will need to be established (so people don't get too close to one another). Large meeting rooms may need to be repurposed as office space.

As the workplace starts its interim solution (likely the checkerboard pattern with fewer staff), designers will need to be reconfiguring the layout for what comes next. Some different furnishings likely will need to be ordered. This will result in a workable solution that is much more effective than the checkerboard. What happens after that will be determined by ongoing evaluations of what is working and not in the new layout.

CLEANING AND DISINFECTING

Cleaning and disinfecting serve three purposes:

- Ensuring that the facility is safe, avoiding spread of the virus.
- Communicating to staff and visitors that management values their safety with paramount importance.
- Helping staff (and their families) to feel that the workplace is very safe.

Procedures must be developed to communicate an emergency to the cleaning staff. Emergencies are those that relate to the clean-up and disinfecting of an area that may have been contaminated by the coronavirus. Include disposal instructions for materials used for the cleaning.

Cleaning staff should clean frequently touched surfaces at least once daily (and some more frequently if they get a lot of use) or if they are in high-traffic areas. These include all worksurfaces; chair arms; file drawer handles; doorknobs; lavatory faucets; card readers; elevator buttons; and railings (including escalator handrails). A schedule should be developed for which surfaces should be cleaned and how frequently. Consider posting when this was

most recently done for spaces—this gives staff a good and safe feeling about the spaces they frequent. Provide instructions for disposal of items used in the cleaning.

Identify shared equipment through the facility and develop guidelines for using and cleaning it. Are gloves required? Should equipment be cleaned before or after each use? Have appropriate wipes nearby. Make sure the cleaning crew disinfects the equipment daily, including all buttons, handles, levers, and other surfaces that may be touched such as all shared copiers, printers, and other office equipment.

Similarly, rules should be developed for opening file drawers and other common storage areas. Gloves? Wipes?

Staff should disinfect their own mobile phones frequently. The cleaning crew should clean desktop phones in the general office areas and at the workstations frequently; the staff should clean their own desktop phones as well, as phones are among the most COVID-19 infected equipment. For mobile phones, staff can use wipes (be sure they're OK to use on mobile phones), ultraviolet (UV) wands (you can wave your wand over several phones at once), or cases in which you can place your phone for 10 minutes while the UV light sanitizes it.

Place hand sanitizers wherever people will most likely be touching food with their hands and at all entrances to buildings and conference / meeting rooms. Restrooms must provide a way for patrons to open doors without having to touch handles.

Cafeterias should have special considerations in addition to the use of food guards. In a cafeteria, people may sanitize their hands as they enter, but then may pick up a serving utensil that others have touched, so they will need to sanitize again; and then they may touch their tables. Consider dispensing paper bags in the cafeteria so diners will have a place to put their masks instead of on the tables while they are eating. They also should be able to find a handwipe as they approach the table, so they can sterilize it before they sit down.

Be careful with where you place hand sanitizers, as they will take up space, can look unsightly, and can physically block circulation; for these reasons, at some point they should be integrated into the design so that they are easily visible and accessible, but without the negative aspects.

Instruct workers to clean the worksurfaces in their office areas each night so the cleaning staff can wipe them with disinfectant wipes. Workers should be given supplies to clean all their own equipment daily, including phones, touchscreens, keyboards, mice, etc. Workers should not let others use their equipment.

Always check with manufacturer before using wipes on any surface, especially equipment; some chemicals can stain or erode surfaces. For the virus, because it is believed to have a fatty structure, soap can be most effective as it breaks down the fat.

According to NIH (National Institutes of Health), scientists from the National Institute of Allergy and Infectious Diseases' (NIAID)[14] Montana facility at Rocky Mountain Laboratories, the virus was detectable:

- In aerosols for up to 3 hours.
- On copper for up to 4 hours.
- On cardboard for up to 24 hours.
- On plastic and stainless steel for up to 2 to 3 days.

Teknion, a furniture manufacturer, has created a cleaning guidelines page[15] that goes into detail about which products to use on which types of surfaces and fabrics. They include wood veneer, painted finishes, laminates, metal, glass, and aluminum.

HVAC

There are two key elements of the HVAC system that relate to reducing the spread of the coronavirus:

- The type of air filters used and frequency in which they are changed.
- The percentage of outside air that is pumped into the building.

ASHRAE has recently approved two statements regarding the transmissions of the coronavirus as it relates to the operation of HVAC systems during this pandemic:

> "Transmission of SARS-CoV-2 through the air is sufficiently likely that airborne exposure to the virus should be controlled. Changes to building operations, including the operation of heating, ventilating, and air-conditioning systems, can reduce airborne exposures.

> "Ventilation and filtration provided by heating, ventilating, and air-conditioning systems can reduce the airborne concentration of SARS-CoV-2 and thus the risk of transmission through the air. Unconditioned spaces can cause thermal stress to people that may be directly life threatening and that may also lower resistance to infection. In general, disabling of heating, ventilating, and air-conditioning systems is not a recommended measure to reduce the transmission of the virus."

See ASHRAE and CDC in *PART FOUR* for more information about changing air filters and other aspects of HVAC maintenance related to the coronavirus.

Ensure that there is adequate ventilation in work areas (you may need to consult with an HVAC engineer). If there are fans (pedestal or hard-mounted) situated in the facility, make sure that air does not blow directly from one worker to another. Untreated spaces that personnel may enter must be avoided.

RULES AND GUIDELINES

This section consolidates most of the new rules and guidelines mentioned previously that should be considered. These are summarized here to make it easy for you to have everything in one place—more details for each are provided elsewhere in *PARTS TWO* and *THREE*.

Many of the rules and guidelines will be short-term until the risks from the coronavirus are insignificant; you may want others to remain indefinitely, either for safety purposes or general best practices.

We have tried to organize the rules and guidelines in a way similar to how many facilities management functions are organized.

Because all facilities are different, you will find that some rules and guidelines may not work well for your organization (for example, not feasible, or too costly)—these may be ignored. However, it would be beneficial to identify a different way to satisfy the rationale behind the rule or guideline.

MANAGEMENT AND OVERSIGHT

- Develop working objectives for Workplace Coordinator.
- Identify types and frequency of communication with groups both inside and outside of facilities management, including corporate and building workplace coordinators, health group, finance, and budget personnel.
- Prepare agenda for scheduling weekly meetings with the team to evaluate weekly procedures and determine which should be modified.
- Develop procedures to determine who should be allowed to telework, whether shifts and staggered work hours will be needed, and if so, how they should be implemented.
- Develop guidelines to determine which teleworkers should be eligible for which types of furnishings and equipment, and how they should be procured.
- Develop guidelines and criteria for evaluating actions taken so far and for what will be done next. Determine how to collect the information, e.g., surveys, observation, measuring data.
- Develop procedures for a quick shut-down of the facility should it be necessary.

INTERIOR LAYOUT AND SPACE MANAGEMENT

- Determine the principles for workstation layouts and circulation, to achieve social distancing.
- Develop guidelines for use of aisles and hallways (one-way traffic, passing others).
- Determine where to have queues and how to mark them, including 6' social distancing; determine where stanchions are required.
- Identify where visitor-staff interactions are to take place.
- Create signage for new rules (room capacities, one-directional circulation, queuing).
- Develop or modify existing procedures to procure videoconferencing equipment and guidelines for how to reserve it (there will be much more demand for this than in the past).
- Review guidelines to secure temporary space, if needed.

OPERATIONS AND MAINTENANCE

- Determine frequency for HEPA filter replacement.
- Determine frequency for cleaning heat transfer coils.
- Determine desired percentage of fresh air.
- Develop procedures and frequency for checking certain equipment and building systems for problems that may be occurring due to the lockdown or coronavirus.

SECURITY

- Develop procedures for (touchless if possible) visitor and staff check-in (what needs to be checked).
- Develop procedures for shipping and receiving goods.
- Determine rules for queuing.

JANITORIAL

- Determine frequency of standard cleaning, including use of disinfectants (if different from before).
- Determine frequency of deep cleaning, including use of disinfectants (which objects).
- Develop procedures to dispose of cleaning materials that may have been exposed to the coronavirus.
- Develop procedures in the event of an emergency related to spread of coronavirus.
- Develop procedures for cleaning any amenities and other rooms that have been closed, both now and after they reopen.

EQUIPMENT AND SUPPLIES

- Develop a list of supplies needed for cleaning and disinfecting (including wipes, sanitizer, shop towels, gloves, masks, disinfectants, soaps, detergents, and bleach).
- Develop a list of supplies needed to identify social distancing demarcations (floor/carpet tape, decals).
- Determine minimum inventory levels for each item; levels will be higher than pre-COVID-19.
- Determine how many HEPA filters to keep in stock; levels will be higher than pre-COVID-19.

RULES AND GUIDELINES FOR STAFF AND VISITORS

These need to be communicated to all staff and visitors. Many of them will be written by the facilities group, sometimes in consultation with other groups. In many instances, signage will be helpful.

- Weekly newsletter to share building pandemic news, tips, statistics, and concerns.
- Procedures for receiving and using masks, sanitizing wipes and other supplies (visitors and staff).
- Procedures for temperature checks (when, where).
- Procedures for reporting symptoms of the coronavirus (for self, others).
- Procedures for using common equipment (copiers, printers, videoconferencing, etc.).
- Procedures for hoteling (if applicable).
- Identification of which rooms and facilities will be closed.
- Guidelines for use of workstations (sanitizing, visitors, cleaning after use, what to clean).
- Guidelines for use of meeting rooms (capacity, entering and exiting).
- Guidelines for use of cafeteria (capacity, hand sanitation, mask placement when eating, etc.).
- Guidelines for use of elevators and escalators, including queuing, elevator capacity, social distancing.
- Guidelines for use of amenities and special spaces (capacity, sanitizing instructions)—reception, fitness center, daycare center, break rooms.
- Guidelines for working from home and remote locations (teleworking).
- Guidelines for getting to the office (transportation, parking, alternatives).
- Social distancing in hallways and aisles.
- Social distancing guidelines (in workstations and other locations).
- Social distancing guidelines (in queues).
- Social distancing apps (if required).
- Density apps—showing number of people in a given area (if required).

Working from Home

- ✓ Reserve a place for your work
- ✓ Keep number of windows open on your computer to a minimum
- ✓ Consider larger or multiple monitors
- ✓ Make work area ergonomic
- ✓ Maintain regular workday routine
- ✓ Keep connected with your team
- ✓ Prioritize to-do lists
- ✓ Take breaks, exercise, and get fresh air every day
- ✓ Plan a way to take care of children
- ✓ Plan for distractions
- ✓ Test video conferencing and communications set-ups

According to the _Harvard Business Review_[16] (HBR), remote working employees face many challenges that they don't face in the workplace, which can lead to declines in job performance, especially in the absence of appropriate training and guidance. The _HBR_ article identifies some of the common challenges (presented here) and then offers guidance for ameliorating each:

- Lack of face-to-face supervision
- Lack of access to information
- Social isolation
- Distractions at home

We address many of the distractions and provide additional resource material below. The _HBR_ goes into detail on how management can support remote employees, including one that ties directly to facilities managers:

- "Provide several different communication technology options." They go on to say that besides telephones and emails, include videoconferencing. See _Communications Equipment and Videoconferencing_ below.

WORK ENVIRONMENT AND HABITS

- Create a place reserved 100% for your work, which should include all equipment and supplies you will need, just as if you were in your office. Try to create a physical barrier between the workplace and the rest of your home, if possible, even if it is just a partial-height screen.
- If you have only one monitor, try to avoid having too many windows on it open at one time.
- If you'll be spending a good part of your day on your computer, you will likely benefit from a larger monitor or perhaps two. These can be attached to your laptop through a docking station, which may also come in handy if you have two or more peripherals to plug into your laptop.
- Similarly, if you'll be spending more than four hours at a computer, you will benefit from an _ergonomic workstation_ at home. See the Ergonomic section below for more on this.
- Maintain a regular workday routine, including hours at "the office."
- Stay connected with your team throughout the workday. It can get very frustrating if someone needs to reach you and can't. If you leave your workspace, check your messages as soon as you return.
- Prioritizing your to-do tasks becomes more important than ever.
- For your own sanity and to keep a clear head, take breaks, and be careful not to _overwork_. And don't forget to exercise and get fresh air daily. You will be more productive after that!
- If you have very young children, childcare is a must. For slightly older kids, try to explain (in a relaxed setting, not while they are interrupting a task of yours) that things will be different for a while as you work

from home, and it will be something to which everyone (including you) will need to adjust. For very special (hopefully infrequent) times and only when necessary, have a signal to indicate, "Do not Disturb!"

- Besides kids, find a way to deal with distractions that don't come up in the office, such as personal calls, doorbell ringing, etc. Sometimes, these cannot be avoided, and they can get worse if you don't deal with them. Use your judgment, and if you need to take a break to deal with them, then allow make-up time later. There are lots of articles out there on the web with good advice. Try doing a search, for example, on "how to deal with family disruptions when working from home"—you'll be amazed at what you come up with! For slightly different results, try searching on "how to deal with distractions when working from home." Here are some of my favorites:
    o https://www.bitqueues.com/here-is-how-you-can-manage-interruptions-when-working-from-home/
    o https://www.moneycrashers.com/tips-increase-productivity-avoid-distractions-working-home/
    o https://www.flexjobs.com/blog/post/dealing-with-distractions-working-from-home/
    o https://zapier.com/blog/remote-work-challenges/
    o https://www.themuse.com/advice/work-from-home-kids-coronavirus

Many of these websites have similar ideas, which reinforce how seriously they should be taken. They will determine how productive you will be.

- Agile Work Evolutions developed a Work@Home checklist[17] that addresses environment preparation, technology, communication protocols, training, meetings, and much more.

Ergonomic Considerations

- ✓ Eye height 2" below top of screen
- ✓ Eye 16"-28" from monitor
- ✓ Elbows parallel to ground when hands on keyboard
- ✓ Thighs to be parallel to ground
- ✓ Knees to extend beyond seat
- ✓ Mouse at same height as keyboard
- ✓ Forearms supported by armrests
- ✓ Neck and back to be in one line, and perpendicular to the ground
- ✓ Get up and walk every 30 minutes

ERGONOMICS

If you will be spending a good part of your day at your computer, you need to be sure your workstation is configured properly. This will help you avoid back problems, carpal tunnel, eye and neck strain, and a host of other maladies. Here are some guidelines:

- The eyes should be level with a horizontal line a few inches below the top of the screen, and at a distance between 16" to 28" from the screen.
- The elbows should be bent a bit more than 90 degrees when your hand is on the keyboard. If you will be at the computer a lot, you should adjust your worksurface height to be ideal for when you are using your keyboard (ideal writing surface height is usually a couple of inches higher)—you will need to decide if you will be spending more time writing or typing at your worksurface. Your keyboard should be at the same height as your elbow, which means that your wrist will be slightly bent.
- The seat height should allow your hips to be bent a bit more than 90 degrees when your feet are flat on the floor (which is where they should be when you are typing). It helps for your chair to have lumbar support.

- The back of your knees should be a bit over the front edge of the seat.
- Your mouse should be at the same height as the keyboard and just a few inches away from it.
- Your forearms should be supported by armrests.
- Keep your neck and back vertical and straight.
- Get up and take a break every 30 minutes or so.

There also are some good checklists available:

- The National Institutes of Health (NIH) has published *Computer Workstation Ergonomics: Self-Assessment Checklist*[18]. It has graphics to demonstrate all you need to know.
- The Occupational Safety and Health Administration (OSHA) has published a similar guide, Computer Workstations eTool[19], with a few more details, but without the graphics.

COMMUNICATIONS EQUIPMENT AND VIDEOCONFERENCING

- Determine what equipment you need. Are the camera and your microphone on your laptop sufficient, or do you need a stand-alone webcam and microphone?
- Determine the software and applications you require and understand the limitations of each product you are considering. Some of the more popular ones are Skype, Zoom, Slack, Microsoft Teams, WebEx and GoToMeeting. Each has its strengths. Many organizations have their own favorites and guidelines as to which to use.
- Become very familiar with your equipment and software—don't use them for the first time when you're in a meeting.
- Learn how to mute your microphone, black out your camera, change the presenter, pause a presentation, share an application, hold a conference call (with or without cameras), etc. Also, learn how to turn a phone call into a video meeting, should the need arise.

LOOKING GOOD IN FRONT OF A CAMERA

- The first requirement is to place your set-up in the proper environment. The best backdrop is often a plain, white background. There should be some distance between you and the wall, so you avoid distracting shadows. Another favorite backdrop are bookshelves. "Neutral" is good; avoid strong design elements—while some may like your taste, others may find it distracting. Clutter is not only distracting but can reflect negatively on you. Check out what others are doing in their live chats. If you still need to be convinced of the value of the above guidelines, remember that there are some viewers who will focus as much attention on your home as on what you have to say—when I once asked someone what they thought of a chat I had missed, the first few minutes of response were all about the kind of home the person had! I am sure that is not what the speaker had intended.
- Lighting is also important. Be sure your face is properly illuminated (a luminaire a couple of feet from your face is ideal) and avoid shadows—LEDs and fluorescents are best for that. Be sure there is no bright source shining toward you in the camera lens, and that includes a window in the daytime—backlighting will make your head read as one giant shadow.
- There's more than one way to put your face in the proper light. Besides the lighting, people's heads look best when the camera is slightly above one's eyes. This can present a problem with a laptop's camera, but

it is easily resolved by propping the laptop up on some books. And do look into the camera—that's another way of saying, "Look someone in the eye."

- Because cameras don't have the range of contrasts that the human eye does, you will look better if you're not wearing a shirt/blouse that it very dark or very light. It is always a good idea to check out your setup in advance of a call, and that includes what you may be wearing.
- Be careful of a room that has primarily hard surfaces—these reflect sound and can produce an unwanted echo. Also, many laptop microphones are not of sufficient quality to make your voice as clear as it needs to be; avoid speakerphones. It's much better to have a dedicated microphone or at least a set of good earbuds.
- Keep the camera steady. This can be especially a problem with a laptop as the camera source unless the laptop is on a solid surface (not your lap!). And even then, if it were to move, such as when you're typing on the keyboard, your presentation will become a disaster.
- Be sure you're not sharing your whole screen unless you really intend to do so. Otherwise, just ID the applications you wish to share.
- Plan ahead for surprises, such as what to do if one of your kids enters the room, your dog jumps on your lap, another phone rings, etc. Since many are working from home, it's best to be prepared and take precautions so these interruptions don't happen; but if they do, it's preferred to use the interruption as an opportunity for a lighter moment rather than becoming annoyed with the distraction. Everyone on the call knows everyone else is working from home, so they will understand that these things can happen.

CREATING SAFE WORKPLACES AND MINIMIZING WORKER EXPOSURE RISKS

The guidelines in this section are from OSHA's *Guidance on Preparing Workplaces for COVID-19*[20]. They first identify the types of controls available to protect workers:

- Those that physically isolate employees (engineering controls)
- Those that require the individual to "do" something (administrative controls)
- Those that require use of Personal Protective Equipment (PPE)

In the second portion below, the guide describes the types of exposure and risk (high, medium, low). Finally, it applies additional controls to the higher risk exposures.

TYPES OF CONTROLS TO PROTECT WORKERS

ENGINEERING CONTROLS

The most effective controls, according to OSHA, are known as *engineering controls*, which involve isolating employees from work-related hazards; these controls do not rely on worker behavior and can be very cost-effective to implement. They include:

- High-efficiency air filters
- Increased ventilation rates
- Physical barriers, such as plastic sneeze guards

- Drive-through windows for customer service
- Specialized negative pressure in locations that are prone to airborne infections

ADMINISTRATIVE CONTROLS

Administrative controls require action by the worker or employee, and typically involve changes in work policy or procedures. They try to minimize exposure to a hazard. Because their success is dependent on employee vigilance and compliance, they are not as effective as engineering controls. Administrative controls include:

- Encouraging sick workers to stay at home
- Minimizing contact through increasing virtual communications and telework where possible
- Reducing employees working at the same time by increasing shifts or establishing alternating days
- Discontinuing non-essential travel, especially to places where there may be large outbreaks
- Developing emergency communications plans and internet-based worker forums
- Offering workers education and training on virus risk factors and protective behaviors
- Training workers who require protective clothing and equipment

SAFE WORK PRACTICES

These are administrative controls that include procedures for safe and proper work and tend to reduce the exposure to a hazard. Examples include:

- Providing resources that promote personal hygiene, such as: tissues, no-touch trash cans, hand soap, alcohol-based wipes and hand rubs containing at least 60% alcohol, disinfectants, and disposable towels for cleaning work surfaces
- Requiring regular hand washing or use of alcohol rubs, and always after the hands are visibly soiled or after removing PPE from your face
- Posting of handwashing-reminder signs in restrooms

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Use of PPE does not replace the above prevention strategies, as it is not as effective. All PPE must be properly fitted for each worker, and regularly inspected and maintained. Workers who work within 6 feet of people known to be or suspected of being infected with the coronavirus need to use proper respirators, such as N95s. Examples include:

- Gloves
- Goggles
- Face masks and shields
- Respiratory protection

TYPES OF EXPOSURE RISK

The use of the above controls will vary depending on the worker's risk level to exposure. OSHA has divided these into four levels: Very High, High, Medium, and Lower Risk. Most workers are classified as Lower Risk, followed by Medium, and then High, and the least amount as Very High. Some examples are offered for each type of exposure risk (many of the higher risk workers are in healthcare):

VERY HIGH EXPOSURE RISK

- Healthcare workers performing aerosol-generating procedures on known or suspected COVID-19 patients
- Healthcare and laboratory personnel collecting or handling specimens from known or suspected COVID-19 patients
- Morgue workers performing autopsies on the bodies of people who are known or suspected of having COVID-19 at the time of their death

HIGH EXPOSURE RISK

- Healthcare delivery and support staff exposed to known or suspected COVID-19 patients
- Medical transport workers moving known or suspected COVID-19 patients in enclosed vehicles
- Mortuary workers involved in preparing the bodies of people known to have or suspected of having COVID-19 at the time of their death

MEDIUM EXPOSURE RISK

These are workers whose jobs require frequent and/or close contact with people who may be infected with the coronavirus, but who are not known or suspected COVID-19 patients, such as travelers who return from international travel or areas where there is ongoing community transmission.

LOWER EXPOSURE RISK

These are jobs that do not require contact with people known to be or suspected of being infected with the coronavirus, nor frequent close contact with the general public.

ADDITIONAL CONTROLS FOR EACH EXPOSURE RISK

Each of these types of risks may require certain *additional* controls, beyond those mentioned above. Each will be discussed below, beginning with those at least risk:

CONTROLS FOR WORKERS WITH LOW EXPOSURE RISK

ENGINEERING CONTROLS

- No additional controls are recommended; not all controls may be applicable for all situations.

ADMINISTRATIVE CONTROLS

- Monitor public health communications about COVID-19.
- Regularly check the CDC COVID-19 website.

PERSONAL PROTECTIVE EQUIPMENT

- No additional PPE is recommended.

CONTROLS FOR WORKERS WITH MEDIUM EXPOSURE RISK

ENGINEERING CONTROLS

- Install physical barriers where feasible.

ADMINISTRATIVE CONTROLS

- Consider offering face masks to ill workers to contain respiratory secretions until they leave the workplace.
- Keep customers informed about COVID-19 and ask sick customers to minimize contact with workers.
- Minimize customer face-to-face contact with workers.

PERSONAL PROTECTIVE EQUIPMENT

- Each employer should select the combination of PPE that protects workers specific to their workplace.
- Workers may need to wear some combination of gloves, gown, face mask and/or a face shield, or goggles.

CONTROLS FOR WORKERS WITH HIGH OR VERY HIGH EXPOSURE RISK

ENGINEERING CONTROLS

- Ensure appropriate air-handling systems are installed and maintained. See the CDC's *Guidelines for Environmental Infection Control in Healthcare Facilities*[21].
- Place known or suspected COVID-19 patients in an airborne infection isolation room.

ADMINISTRATIVE CONTROLS

- None of these are related to facilities managers.

PERSONAL PROTECTIVE EQUIPMENT

- Workers will likely need to wear some combination of gloves, gown, face mask and/or a face shield, or goggles.

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PART FOUR: RESOURCE GUIDE

The following is a summary of key resources where you may delve into more depth about topics of interest. Most of these provided information used in this document.

We highly recommend taking advantage of work done by others to help determine the best courses of action for your facility. Besides the material in this guide, there are many other resources to review—see which apply to your specific needs. While the guide is intended to serve most of our readers, some in certain situations (for example, specific industries, those who have more complicated HVAC or plumbing systems, etc.) may benefit from the additional detail in these resources.

With each resource below, we have listed the resource and described what makes it particularly useful; in addition, instead of just linking to their home pages, we link to the resources' detailed pages that relate to what we believe will be of value to you. If the organization has published a guidebook relating to the coronavirus, we provide a link to it.

More information is coming out every week, so be sure to plan time to keep up with the latest news and developments. Be sure to check these sites and others for any additional materials.

RESOURCES—FMLINK

Before we begin, we would be remiss not to mention FMLink itself as an excellent resource. FMLink has over 50 coronavirus news stories[22] through April 2020, and many more get posted each week. These cover papers and checklists on how to handle the pandemic; tips; scams; government-issued guidelines and regulations; products and services; and projections related to how the workplace will become different—all related to the virus.

In addition, the FMLink Events Calendar[23] lists webinars that are focused on the virus. Many associations and companies serving facilities managers are offering webinars weekly. Even if you have missed the date for a webinar, many are available through a recording from the sponsoring organization.

FMLink also publishes a weekly e-newsletter[24] that is free to all. It summarizes all the news and events posted during the previous week. It is a good way to keep up with everything related to the coronavirus as it may impact buildings and facilities managers.

RESOURCES—ASSOCIATIONS AND GOVERNMENT ORGANIZATIONS

- American Industrial Hygiene Association (AIHA)
- American Institute of Architects (AIA)
- American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)
- Building Owners and Managers Association International (BOMA International)
- Centers for Disease Control (CDC)
- CoreNet Global
- Environmental Protection Agency (EPA)
- Institute of Real Estate Management (IREM)
- International Facility Management Association (IFMA)

- ISSA
- National Institute for Occupational Safety and Health (NIOSH)
- Occupational Safety and Health Administration (OSHA)
- RICS
- World Health Organization (WHO)

American Industrial Hygiene Association

www.aiha.org

AIHA has published two excellent resources from its coronavirus page: one focuses on recovering from COVID-19 building closures[25], and the other is a guidance document for workplace cleaning[26]. It has many details on how to keep the workplace clean, including carpeting, fabrics, HVAC ducts, and pipes.

American Institute of Architects (AIA)

www.aia.org

The AIA's Committee of Corporate Architects and Facility Management has launched a discussion forum[27] focusing on change in corporate space usage as a consequence of COVID-19. This active group has frequent new postings from corporate architects, where each describes what they are doing to reopen their buildings.

American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)

https://www.ashrae.org/

ASHRAE focuses on building systems, energy efficiency, indoor air quality, refrigeration and sustainability. It has put together a Coronavirus Preparedness Resources[28] page that includes considerable information on buildings, filtration and disinfection, and transportation—there is very good detailed information here.

Building Owners and Managers Association International (BOMA International)

https://boma.org

BOMA has compiled several excellent resources that are available from its coronavirus resource center[29]. Two of them, which may be downloaded from there, are the *Coronavirus Preparedness Checklist* and *Getting Back to Work—Preparing Buildings for Re-Entry*. The *Checklist*, based on guidance from the CDC, discusses communicating with workers, planning for business continuity, best practices for cleaning, and supplies to have on hand.

Getting Back to Work identifies a detailed plan to put together a facilities team to prepare and manage a return to the workplace. It provides guidelines on social distancing, use of common areas, security, and signage, as well as policies for building personnel and contractors. Some of the "rules and guidelines" in *PART THREE* are based on ideas presented here. There are special sections for various types of services, including HVAC, janitorial, and emergency preparedness. There is also a lot of information on what landlords should be communicating to tenants.

Centers for Disease Control and Prevention (CDC)

www.cdc.gov/coronavirus[30]

Besides the CDC's general page on the coronavirus, it has a variety of relevant resources that it has published. First, there is a special page focused on the coronavirus for businesses and various industries[31]. This page also directs you to specific cleaning and disinfection recommendations[32]. The CDC also has a page for cleaning and disinfecting various surfaces[33] found primarily in households, but has additional information that can apply to buildings as well. For those whose water has not been used regularly and where there may be standing water in the pipes, the CDC recommends eight steps to take before a building reopens[34].

Together with the US EPA, the CDC has published *Guidance for Cleaning and Disinfecting Public Spaces, Workplaces, Businesses, Schools and Homes[35]*, which leads you to two very useful documents: one is a decision-making flowchart that tells you whether you will need to clean and disinfect certain areas; the other is guidance on how to do it.

The CDC has also published a factsheet geared toward preparation for small businesses for the effects of COVID-19[36]. It is an excellent succinct summary of the key elements of a plan to be administered by the workplace coordinator in a small business.

CoreNet Global

https://www.corenetglobal.org/coronavirus[37]

CoreNet Global's coronavirus page has links to many webinars, websites, and a large number of white papers written by a variety of organizations.

Environmental Protection Agency (EPA)

https://www.epa.gov/

The EPA, a US government agency whose mission is to protect human health and the environment, has a special coronavirus page[38] with information on disinfectants, and drinking and waste water. It also has published a list of disinfectants[39] that satisfy EPA's criteria for use against the coronavirus.

Together with the CDC, the EPA has published the previously mentioned *Guidance for Cleaning and Disinfecting Public Spaces, Workplaces, Businesses, Schools and Homes[40]*, which leads you to two very useful documents: a decision-making flowchart telling you whether you will need to clean and disinfect certain areas; and guidance on how to do it.

Institute of Real Estate Management (IREM)

https://www.irem.org/

IREM has posted a special page that focuses on COVID-19 resources and information for property managers[41]; it includes links to podcasts, tools and resources related to the virus. IREM also has produced *Pandemic Guide for*

Real Estate Managers: Resources for Reopening Your Property[42]; the Guide includes a property reopening checklist and special guidelines and comprehensive checklists for reopening office buildings, industrial properties, multifamily communities, retail properties, and the workplace in general. The general checklist includes tasks related to communications, disease prevention, and operations and maintenance.

International Facility Management Association (IFMA)
www.ifma.org

IFMA has a coronavirus resource page[43]. It identifies several resources, checklists (mostly from other sources), webinars, discussion forums, and more.

The IFMA Foundation has updated its 2006 _Pandemic Manual_. The new 2020 version[44] adds information related to COVID-19 case studies, pandemic response checklists, facility measures for pandemic control and mitigation, using technology and working from home, and more. It is very comprehensive and includes many checklists and several case studies. Its resource guide includes links to government agencies and associations not in the FM and building arenas (e.g., disaster preparedness and recovery, business continuity, emergency management, risk and insurance, and fire protection).

IFMA and **RICS** (see below) have recently teamed up with Leesman, a company known for measuring employee workplace experience, to form a global coronavirus response group. The three-part initiative aims to arm the industry with the information and insights it will need when social distancing policies are relaxed. Part One is research to understand the experience that home-based employees are having. Part Two allows participating organizations to learn from one another's data. Part Three starts when social distancing rules are relaxed and studies the impact that prolonged working-from-home (WFH) has on traditionally office-based employees.

ISSA
https://www.issa.com/

ISSA, a global association for the cleaning industry, is very focused on disseminating information on how to clean and disinfect for the coronavirus. It has put together a special page on the virus and has formed the Global Biorisk Advisory Council. It offers education, training, and business[45] resources to help manage the virus.

National Institute for Occupational Safety and Health (NIOSH)
https://www.cdc.gov/niosh/

NIOSH is a part of the CDC. It has published a variety of publications related to the virus and special types of workers[46], including those in meat-processing facilities, health care workers, residents of long-term care facilities, truck drivers, and emergency response workers.

Occupational Safety and Health Administration (OSHA)
www.osha.gov/coronavirus

OSHA has published an excellent resource, *Guidance on Preparing Workplaces for COVID-19*[47]. Besides containing invaluable information about the coronavirus, how it is transmitted and what types of rules and guidelines companies should implement to protect its occupants, this resource identifies and discusses the superiority of engineering controls such as barriers over administrative controls (those that rely on vigilance, compliance and safe work practices) and personal protective equipment (PPE). It also classifies job exposure risks as Very High, High, Medium, and Lower. The special section in *PART THREE* is based on guidance from this document.

OSHA also has a special page with the latest news[48] about the virus and COVID-19; check back here frequently.

RICS
https://www.rics.org/

RICS is an organization that supports professional standards in the areas of land, real estate, construction and infrastructure. It has put together a page with information and guidance related to the coronavirus[49]. There is a particularly interesting piece called *Resilience at the frontline—the future of Facilities Management*[50]. See the discussion above about how IFMA and RICS are collaborating with Leesman regarding the pandemic.

World Health Organization (WHO)
www.who.int/coronavirus[51]

WHO has published its COVID-19 Strategy Update[52]; while this resource is a good general guide to the global pandemic, it does not focus on solutions for buildings. The WHO website also contains an interesting page on myths related to the coronavirus[53]; see which of them you already know.

RESOURCES—PRIVATE ORGANIZATIONS

The following companies have special pages devoted to the coronavirus. Many are global outsourcing companies and provide a variety of real estate and facilities services to their clients. There also are design firms, furniture manufacturers, and a plumbing manufacturer.

Besides the organizations listed below, for those that relate directly to an area covered in *PART THREE*, they are included there instead. We also refer you to the FMLink Events Calendar, which identifies not only conferences but webinars focusing on the coronavirus; many of these are put on by these organizations.

- ABM
- CBRE
- Cushman & Wakefield
- Eden (look at their Reentry page)
- Gensler
- HOK
- ISS
- JLL
- Sloan

- Stantec
- Steelcase
- Teknion

ABM, a facility services firm, has a coronavirus information center[54]. It identifies what goes into routine environmental cleaning, more comprehensive cleaning and disinfection (for where infected people may have been), and best practices during building closures.

CBRE, a real estate services company, has published a COVID-19 page[55] with insights and implications of the pandemic. It summarizes what must go into the reopening of the world's workplaces.

Cushman & Wakefield, a global real estate services firm, has an excellent resources page[56] for dealing with the coronavirus. It includes a very comprehensive how-to guide for reopening the workplace[57], which may be downloaded. Their booklet contains some very detailed checklists, including one for which equipment may need to be checked out to get the building operational, recommended communication practices, and preparing the workplace.

Eden, a facility services company that recently acquired Managed by Q (formerly a part of WeWork), assisted by investors led by JLL Technologies, developed a Reentry resources page[58]. From that page one can download *The 12-Point Plan for Workplace Re-Entry*. The Plan includes a very comprehensive checklist for reentry and occupancy.

Gensler, an integrated design, planning and consulting firm, has published a series of blogs and interviews from industry experts[59] regarding their thoughts on a variety of topics related to how design is responding to a changing world. Some of the topics include how the pandemic will influence building design; considerations for transitioning back to work; understanding the touchless workplace; creating data-rich spaces for a healthier workplace; what happens when we return to the workplace; how to build company culture in a virtual world; steps to take to ensure workplace wellness, and many more.

HOK, a global design, architecture, engineering, and planning firm, asked its leaders for their insights about how the coronavirus will impact different aspects of the workplace[60]. This resulted in a series of papers on topics including COVID-19 takeaways for the workplace, COVID-19 and the case for a hands-free workplace, design strategies for work and life following COVID-19, and whether social distancing will make way for workplace distancing?

ISS, an integrated facility services company, describes its approach[61] to ensuring that its clients' buildings are safe. ISS formed a special task force to handle COVID-19 for its clients and to monitor their situation.

JLL, a real estate services leader, has published (re)entry: a guide for working in the next normal[62]. The first part of the guide has good, detailed information about how and when people should begin to return to the workplace. There also is a good checklist with additional considerations for owners, occupiers and tenants, as well as a checklist in preparing for a safe and productive reentry.

Stantec, a global design and delivery firm, has a variety of interesting papers[63] related to the coronavirus. One focuses on remaining safe at work[64], and has sections on developing a safe work plan, occupant safety and health, communication and transparency, and cleaning and disinfecting. It also has released a video about transitioning to recovery while preparing for a second wave of the coronavirus[65].

Sloan, a manufacturer of commercial plumbing systems, released a guide to clear (flush) commercial restrooms prior to reopening buildings. It describes the concerns with stagnant water in pipes and how to clear them. This impacts toilets, faucets and showerheads.

Steelcase, a furnishings company, has a special page devoted to the post-COVID workplace[66]. It contains articles related to workplace design, strategies for successful remote collaboration, and a work-from-home (WFH) checklist. Many of these ideas are incorporated in *Navigating What's Next: The Post-COVID Workplace[67]*; this excellent resource focuses on planning of the workplace and includes a variety of layout concepts, distinguishing among solutions for right now, the retrofit period, and the ultimate reconfiguration. This resource then provides workstation alternatives designed to get one thinking about what can work best for each situation; it then addresses a variety of home office considerations and layouts.

Teknion, a furniture manufacturer, has created a cleaning guidelines page[68] that goes into detail about which products to use on which types of surfaces and fabrics. These include wood veneer, painted finishes, laminates, metal, glass, and aluminum.

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Peter speaks at a variety of conferences, and his writings have been published in most FM magazines. He is a six-time winner of the International Facility Management Association's (IFMA's) Distinguished Author Award; besides this 2020 award, he is particularly proud of his 2014 e-book on benchmarking, which was commissioned by the IFMA Foundation. He also was the founding President of IFMA's Capital Chapter. IFMA has honored Peter with its award for Distinguished Service, and in 1997, he was named an IFMA Fellow.

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