

AUGUST 2020

ADAPTABILITY AND FLEXIBILITY

Can public spaces adapt to a new COVID-19 normal?

Pandemics are becoming more frequent in the twenty-first century. During the twentieth century, there were three Influenza pandemics with tens of thousands of victims (1918, 1957, 1968) (CDC, 2020). In the last 20 years, four similar viral pandemics have occurred (SARS- 2003, Swine Flu- 2009, MERS- 2012, COVID- 2019) (CDC, 2020). Preparation for the current and the next pandemics are no longer a question of “if,” but “when.”

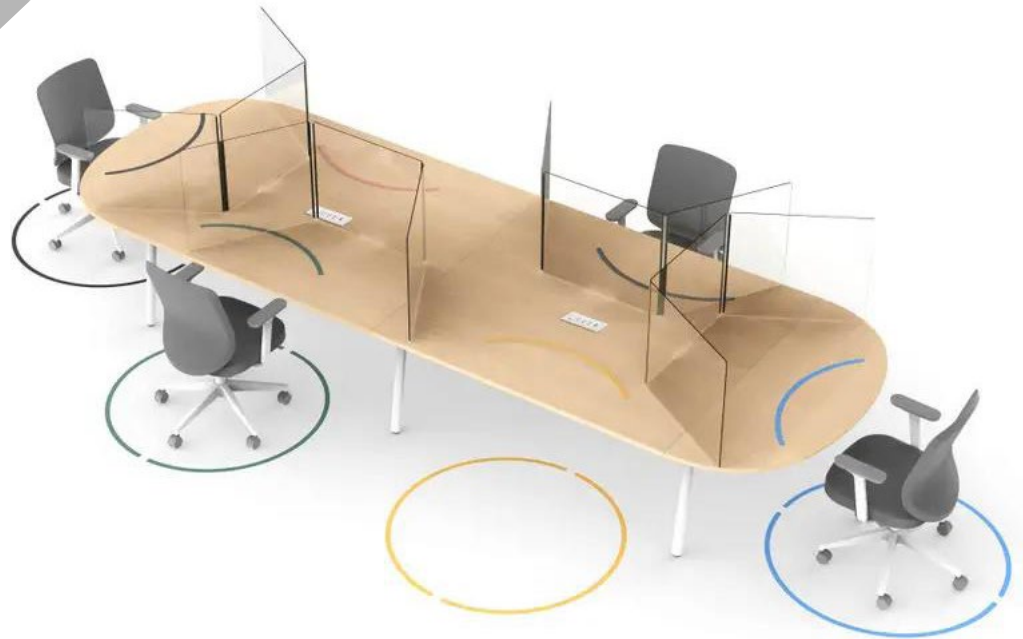
Civic agencies represent many of the front-line workers that respond in times of crisis. Their ability to maintain their own staff safety allows a coordinated response that saves lives. There is a paradox of maintaining or even increasing public services while also trying to limit interaction with a public that may be infected with a communicable disease. Another difficulty that these agencies face is the variety of physical space that they are responsible for: police, sheriff and fire stations, detention facilities, morgues and labs, city and county administrations, and community centers and libraries. Each has its own challenges and strategies for maintaining a safe environment. For instance, state and federal prisons have reported 52,000 cases among inmates and 11,000 staff infections as of June 30 (Marshall Project, 2020).

COVID-19 has changed lives around the world, from the way people work, learn/teach, and deliver/receive healthcare. Architects have always been responsible for the health and welfare inside buildings. This new challenge is one more item that architects will have to consider as they design spaces for civic clients. Changes that have been already occurring have begun to accelerate as this moment is an opportunity to re-make society in its new image.

At HMC Architects, we are exploring the pandemic as an opportunity to learn, reinvent, and most importantly help our clients amid this crisis. As part of this ongoing research effort, we are committed to share our findings with the industry on five main areas of Technology, Adaptability and Flexibility, Regulatory/Budgetary/Institutional Impacts, Space Needs Restructuring, and Impact to Wellness/Mental Health. In this article, we are discussing Adaptability and Flexibility within our built environments.

METHOD

A group of representatives from different public agencies, including fire, police, sheriff, city and county administration as well as architects from HMC and consultants from public safety and engineering companies were invited to attend a virtual focus group to discuss and



Poppin, 2020

share insight. Prior to the focus group session, a short online survey was sent to the group for their review and evaluation of short- and long-term impacts of COVID-19 on their current and future facility operation and design.

RESULTS/DISCUSSION

While there are many operational items that will change to be adaptable and flexible to address viral pandemics, we are focused on how the physical environment can support the civic mission to service the public at all times. However, as agencies change to respond to pandemic, the physical needs are also changing. In that way, we will look at how the environment can be flexible to address many of the changes that are occurring in how the business of civic governing gets done.

WORKSPACE

It is clear that the pre-COVID-19 office space will no longer be the standard it once was. Work-from-home initiatives were already gaining steam before the pandemic. Now, during this crisis, anyone who can continue to be productive at home is doing so. There will be pressure on all types of employers, including civic agencies, to allow some level of work from home to continue after the current crisis subsides. This will create a new demand for flexible work environments since staff will

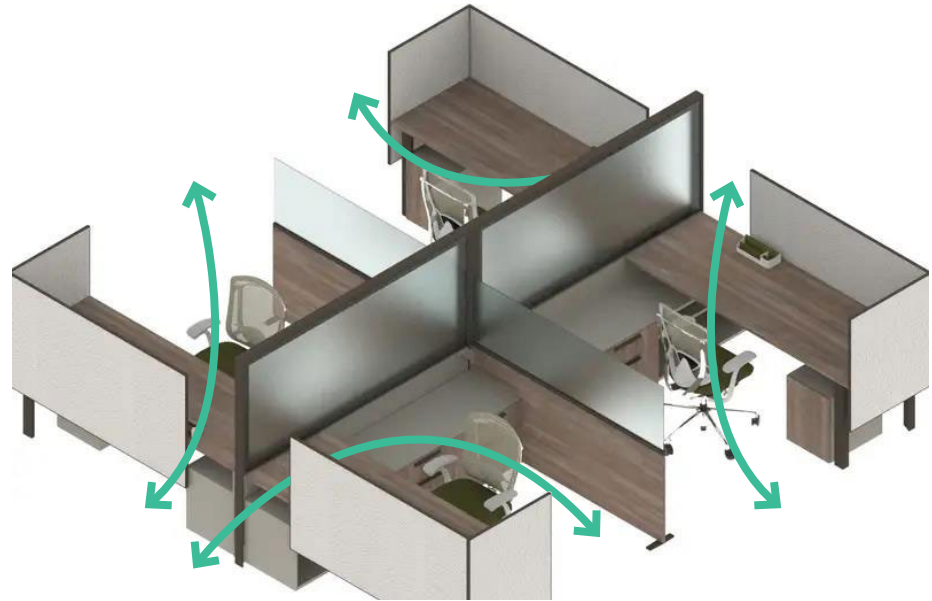
require a space to work in the office as well as have their own home office.

Many services provided by civic agencies have been transitioning to an online platform for years. People are able to renew their driver's licenses, submit plans for building and safety review, visit loved ones who are in jails and prisons, pay taxes, and even respond to court cases. The common thread of all of these is that they still require someone from the civic agency to review and process these items. This has opened up the civic work environment to any place where a secure Internet connection is available.

Occupancy demands could drop as 20 percent or more staff are allowed to work from home each day. Staff may not be assigned to a specific desk location, but rather allowed to pick a location available each day. Enclosed office spaces may become less used as they do not provide the flexibility that an adaptable work-from-home staff will require. For agencies trying to meet these changing demands, this will mean that the layouts of spaces could become less dense, less hierarchical, and potentially more collaborative. The overall space needs may in fact be the same as before. Space use, however, has changed.



An air purge setting could be an effective way of assisting in sanitizing a space if an occupant is determined to have an airborne viral infection.



Teknion, 2020

One economical way that office space could be made safer is to develop a “Kit of Parts” solution that is appropriate for your agency. Furniture manufacturers are marketing a variety of clear dividers with different heights that could be added or taken down depending on the pandemic “threat level.” While these may provide a reduction in the viral risk, clients and architects will need to understand how these new materials change how the building system operates. Air flow is designed to provide fresh air to inhabitants at the desk level in office spaces. When temporary walls impact that flow, the effect can be stagnant areas where stale air builds. Materials are also a concern with workspaces. Acoustic materials may become a way that virus is stored for the next person. Hard surfaces may be easier to clean but reduce the acoustic absorption that is necessary for a focused environment.

MECHANICAL SYSTEMS

Holding stale air in a space is not helpful to prevent transmission of communicable diseases. Instead, air systems need to remove the stale air and bring in new air at a higher rate during these pandemic events. Temporary dividers need to be designed to allow these systems to operate similar to how they were originally designed, while also providing protection against direct contact between staff. They also need to be tested and proven effective. The worst thing would be to let your guard down thinking that you are safe and rely on faulty products.

Air systems may need to be re-commissioned based on these new factors. An air purge

setting could be an effective way of assisting in sanitizing a space if an occupant is determined to have an airborne viral infection. This setting is built-in, but only used when it is required—when a positive test result is determined.

This would be a more sustainable solution as opposed to increasing the number of air exchanges in a building (CDC, 2019). Other air systems changes that could be effectively used during a pandemic event that could be turned on and off are adding UV filters in the air ducts, increasing the Minimum Efficiency Reporting Value (MERV) setting of your air filters to filter out smaller than a micron objects, and revising the percentage of outside air (OA) that is mixed with air that returns to a space (Lieberman, 2020).

The most important element of these new systems is that they are able to be turned on and off depending on the need at the moment. If it takes weeks to transition from one to the other, clients will end up leaving the systems on when they are not necessary. Flexibility and simplicity are going to be key to how these systems operate. A single button that turns on and off these cycles is ideal. A system that checks back in if a setting is not turned off after a certain time period would help as well.

PUBLIC GATHERING SPACES

Indoor public gathering spaces are some of the most difficult to deal with during a pandemic, and to prevent the next pandemic. In the short-term, limiting the number of people in a space or providing on-time appointments



Technology allows inmates to have online visitation which would otherwise be unavailable during a pandemic event.



Ailand, 2020

are possible. Long-term, these changes could affect the level of service that an agency is able to provide. While work-from-home and online services will assist in keeping (Ailand, 2020) the need for in-person services lower, there will always be services that demand in-person meetings. Many of these types of services are for the most at-risk among us.

Based on the CDC guidelines, they recommend closing common areas during a pandemic event (CDC, 2020). This would include break rooms, lobbies, and other community areas, which is not a long-term solution for these spaces.

LIVING QUARTERS- JAILS AND PRISONS

Police lockups, jails and prisons have dealt with the outbreak in a number of ways. In the State of California, police departments and jails and prisons have utilized emergency powers to reduce the number of inmates incarcerated by dramatic numbers—a 20,000-inmate reduction over two and a half months (Matt Hamilton, 2020). This has allowed facilities to provide private living spaces that may have been designed for multiple occupants. There will be long term research on whether these releases caused a public safety concern or if those released did not re-offend. Police have begun to cite and release misdemeanants to reduce the fueling of epidemic. This has reduced the number of people brought back into the police facility. These efforts to reduce police, jail, and prison populations could provide evidence that bail reform is effective, which has been debated for years in many jurisdictions across the U.S.

Dorm units that house up to 128 inmates may not be feasible in this new reality. Staff and inmate safety are concerns for the rest of



Las Colinas Detention and Reentry Facility, HMC Architects

society. Many of these low-level inmates are released each day back into the community. Staff go back to their own homes where their families are waiting for them. These secondary outbreaks can fuel an infection rate in isolated areas where everyone is following the rules.

While these release programs may have reduced the risk of jail transmissions, they are not long-term solutions to jail and prison overcrowding. Cells may be designed for multiple people but occupied by one person during a pandemic event. Common spaces such as dayrooms and classrooms may have reduced occupancies as well. Rooms that are designed for these common uses may become triage centers or quarantine rooms in the face of a serious outbreak. Technology allows inmates to have online visitation which would otherwise be unavailable during a pandemic event.

STAFF AMENITIES

Fire departments are temporary homes for firefighters. These facilities have traditionally been designed with communal living in mind. Living quarters may have been designed for single occupants but break rooms and recreation spaces have been designed for the entire station to use. Some departments are creating rules to limit the number of staff in a single space. Gyms and entertainment rooms provide staff the ability to relieve stress in a stressful work environment. Since these staff encounter many different people each day, they assume everyone is infected. This means that isolating from others throughout the day is critical. Personal Protective Equipment (PPE) is used during calls but is not realistic all day and night.



Windsor Fire Station, HMC Architects

SUMMARY

Civic spaces need to be designed with flexibility and adaptability in mind. How an agency operates during and after a pandemic event will differ greatly. Short-term solutions are not always realistic for long-term operations.

Some changes will become the standard as staff go back to working together. Public safety agencies may rethink how limited funding resources are spent. Working from home and relying on technology may allow agencies to continue to do more with less, while also addressing future pandemic risks.

As new techniques to reduce risk are proposed and developed, 'post-occupancy' research needs to be conducted to ensure that the operational and organizational changes are working as planned.

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