

Pandemics Driving Design Changes

The 21st Century has so far seen Sars, Mers, Ebola, bird flu, swine flu and now Covid-19. We have entered an era of pandemics. Let's identify how pandemics have changed design features in the past and present.

Cities Were Death Traps

The bubonic plague, or Black Death, killed one-third of the world's population in the 14th century helped trigger the Scientific Revolution. Following 9/11 skyscrapers continue to be constructed however stricter building codes requiring additional exits, improved fire suppressant systems and better communication methods were implemented within buildings.

Cities have come a very long way regarding disease prevention. Years ago living in a city would reduce life expectancy, identified as death traps by science scholars and medical professionals. The Industrial Revolution created rapid population growths in cities leading to polluted streets, and air - a ripe environment for infection, especially in big cities like London and New York. As these cities grew, outbreaks of typhoid and cholera became a major public health crisis that led to the construction of entire new design feature - sanitation sewer systems. With the implementation of sewer systems in England alone, the death rate from pulmonary diseases was reduced by 50%.

Bacteria Covered Surfaces

Many surfaces and objects we come in contact with every day are covered with bacteria and germs. Some of the surfaces with the most bacteria and germs we touch frequently:

- Handrails
- Doors
- Refrigerator handles
- Light switches
- Elevator buttons
- Water faucets
- Copy/fax machines
- Remote controls
- Fuel pumps
- Computer keyboards
- Phones
- Coffee machines
- Airplane bathrooms/food trays
- Shopping carts
- Keys

One of the most bacteria and germ surfaces - the transmitter between the above - **our hands.**

Modern Offices

There will be design changes driven by COVID-19 with projects undergoing short term, and long-lasting transformation, specifically the modern office. The office space is where a large numbers of people work in close proximity for long periods of time, the perfect environment for infections to spread. Some see the pandemic leading to the end of the open-floor plan, workspaces designed without walls, with employees working side-by-side and shared meeting and eating areas. The concept was to enhance interaction and communication between employees. Office designers are rethinking office design, entryways, workspaces, meeting and shared areas, HVAC systems and bathrooms.

Design Concepts and Hygiene Practices

Based on the list of the dirtiest surfaces, it is easy to see some of the new design concepts and hygiene practices that would be implemented in the workplace. Experts suggest this could involve a combination of short-term fixes aimed at boosting worker confidence, reducing the number of staff in the office at any one time and longer-term design upgrades and modifications that put hygiene at the heart of workplace.

Design changes include knee-operated utility sink in the entryway so workers and visitors can wash their hands before entering the building, a touch-free thermometer to check that workers and visitors are not running a fever, hand sanitizers throughout the building and a UV light disinfection system installed in the ductwork to kill viruses and bacteria in the air systems. Design entryways without doors or with doors that open automatically so workers don't have to touch them, more waterless and touch-free bathroom facilities such as faucets and toilets, and signage on walls and floors indicating the maximum number of people allowed in a room or elevator at the same time. Conference rooms fitted with voice-activated technologies to control lighting, audio and visual equipment.

Incorporating Hospital Design Concepts

Elements commonly used in hospitals will be designed into office buildings. One of the guiding principles is choosing materials that can withstand heavy cleaning using disinfecting products. Porous surfaces like natural oiled wood will be avoided, with a preference for stone, laminates, synthetic products including solution-dyed carpets with moisture-barrier backing because they can withstand heavy shampooing. Building owners must be thinking of implementing such upgrades because tenants will demand and expect regular cleaning disinfecting work areas.

Remote and Staggered Workforce

Remote work will be used more frequently along with scheduling shared workspaces amongst workers and increased sanitizing cleaning practices between shifts. A staggered workforce may become standard, with smaller groups coming in on alternate days and shifts that avoid transport rush-hour peaks. For example, one person could use a workspace on Monday, Wednesday and Friday while another on Tuesday and Thursday. On their off days, they' work from home, in the field or project site.

Safe, Healthy, Clean Work Environment

Whatever happens in the months ahead, and even when a Covid-19 vaccine becomes available, the pandemic will have short and long-lasting impact on design, how we work and how the workplace functions. The idea of coming to work sick, while some think an indication of dedication, will become socially unacceptable. The focus will be creating a safe, healthy and hygienically clean work environment.

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