The Building Blocks of Change

COVID-19 accelerates need for adaptable, flexible healthcare facilities

With COVID-19 now impacting every aspect of our healthcare systems, hospitals around the world are radically changing to meet the demands of future pandemics. From how to manage the sudden swell of patients arriving due to seasonally recurring viruses to which materials and cleaning processes work best to mitigate the spread of disease, everything from floor tiles to waiting rooms are being re-evaluated. But beyond patient flow and enhanced hygiene measures, even the physical structures are changing—and as we look ahead to what the future might hold, the need for flexible, adaptable spaces is largely guiding the way.

Jennifer Watson, Associate at RJC Engineers specializing in healthcare projects, has already witnessed the movement toward hospitals with more flexibility in their design, a trend she says began before COVID-19, but has been profoundly accelerated because of it.

"For a while now, hospitals have been moving in this direction—not necessarily in anticipation of a pandemic but for reasons like changing demographics and shifting patient needs," she says. "For example, what if one day we needed fewer cancer beds and more maternity beds? Having adaptable, flexible spaces would allow for easy conversion and potentially help to allow for patient isolation in dangerous situations like what we are seeing today."

BRINGING PLANS TO LIFE

To build a flexible, adaptable healthcare facility, Watson says a consistent grid layout forms the basis of the overall building structure. After the architectural team has completed the plans with input from the hospital as to future programming and general requirements, the structural

STRUCTURAL CHANGES WE ARE ALREADY SEEING:

1. Flexible, adaptable hospital spaces
2. Higher ceilings for better air flow
3. Wider and/or single-direction corridors
4. More single-patient rooms vs. multi-patient wards

engineers enable that vision, bringing the plans to full, operational life.

"The flexibility comes from setting the columns in a regular pattern so that the interior walls can move if need be," she explains. "Stairwells and elevators go somewhere permanent, but the rooms and interior spaces can be played with. That way, if one day more patient beds are required, or fewer offices are needed, the conversion is easy."

The other benefit, says Watson, is that when the next infectious disease pops up, the allowances to move things around are already in place. "Having the available space and the means to allow for programming changes is crucial," she says. "By using a grid layout, that space can be temporary and reconverted to something else when there is no longer a need for it."

OTHER TRENDS

Along with flexible, adaptable spaces, hospitals are changing in other ways too. Modern healthcare facilities today offer more single-patient rooms and fewer multi-patient wards. Additionally, Watson says the ceilings are getting higher and ceiling spaces are getting larger. "New hospitals are being built with more ceiling space for air circulation," she observes. "Moving air and natural light have known health and wellness benefits, and, higher ceilings are more aesthetically pleasing."

In terms of COVID-19's direct impact on hospital layouts, Watson prophesies interior corridors and pathways will widen. "If we need to keep people moving in a single direction, spaces will widen" she says. "And of course, internally we'll see more touchless technology in elevators and other systems."

One thing, however, that likely won't change when it comes to future hospitals is the building materials used to construct them. "Steel and concrete are here to stay," Watson says. "I can't imagine even a pandemic will change that."

To learn more about RJC's services, please visit **www.rjc.ca** or contact Jennifer Watson directly at Jwatson@rjc.ca.

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