



PROPERTY MANAGEMENT

Quarterly

Management

An infection risk estimator shares valuable insights

When shutdowns happened in March, we saw companies very quickly shift to work from home. Companies whose culture typically didn't support a work-from-home option were suddenly forced to figure it out, and quickly. Even in the construction industry, which typically is very collaborative, people had to get creative with various technologies, video calling and virtual white boards or dashboards. In what is a relatively short period of time, we saw a decrease in demand for workspace leasing and an incredible shift in where people were working.

Now that we have been working from home for about nine months, with some companies declaring they will never go back to an office building, as a collective society we're starting to evaluate the potential negative health impacts caused by not seeing co-workers, partners, clients and collaborators in person. As a social species, humans have evolved for face-to-face interactions, and there is a lack of good understanding on how significantly increasing WFH impacts:

- Our ability to effectively collaborate;
- Our levels of engagement and ability to identify with the organizations we're a part of; and
- Our individual mental health.

Looking at this as a potential evolutionary mismatch and thinking through how we structure such a future to avoid associated negative impacts would be prudent. An evolutionary mismatch refers to evolved traits that were once advantageous but became maladaptive due to our changing environment. Humans experiencing an extreme evolutionary mismatch can lead to increased stress, depression, drug addiction (including alcohol), obesity and various other diseases. Working from home has significantly impacted our evolved traits of storytelling, working together to achieve a common goal and sharing ideas within a group. While isolated in



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our new WFH environment, in-person communication has disappeared, collaboration has become more difficult and it's extremely challenging to get creative as a group. Working from home every single day can have a dramatic impact on an individual's psyche.

So, how do we get back into the office? As a collective,

we recognize the successes and failures of our new work-from-home environment, but also the dangers of transitioning back to a shared space. If we agree working from home isn't a long-term solution for our psychological well-being, then we also can agree on the importance of returning to buildings safely. Returning to the physical building solves the first issue of the evolutionary mismatch created through isolation and lack of collaboration, but also creates a second issue, "Will I get sick or contract the virus while at work?" So, how do we reduce this anxiety from a facilities and owner perspective? What strategies could be implemented to help occupants return to a shared working environment?

To address these exact questions, we developed the Facility Infection Risk Estimator, which provides assurance for building owners and facility managers, in turn disseminating to the building occupant. Understanding exactly how each strategy will decrease probability of infection provides real numbers behind these nebulous strategies. The tool is designed for experienced engineers and facility operations staff. Ideally, a consultant would be hired to plan and design for a post-COVID-19 workplace, using the Facility Infection Risk Estimator to evaluate every option before reopening to the public.

Facility Infection Risk Estimator™

Number of individuals infected in the space:



The charts show research for a client that wanted to reopen its 400-square-foot conference room, but before doing so needed to measure the risk. The research assumed one person enters the space infected with coronavirus, and the team wanted to know how many people could be permitted and for how long before the virus was transmitted to an additional person.

Conference rooms have been a beacon for collaboration and in-person meetings in workspace design. A confidential client wanted to reopen its 400-square-foot conference room, but before doing so engaged our firm to measure the risk. Assuming one person enters the space infected with coronavirus, the team wanted to know how many people could be permitted and for how long before the virus was transmitted to an additional person. To conduct this analysis, we assumed one infected person. It's important to coordinate with your local health officials to help determine what number of infected people is the best to use. With basic room information, like the amount of outdoor air and return air, percentage of relative humidity, filter type and mask wearing behavior, we calculated the maximum amount of time and the number of people that should be permitted in the space.

To better understand, the charts on Page 16 show the number of employees and the time spent in the conference room (hours of exposure). The numbers within the charts are people

who would leave the space infected. In this example, the team agreed that less than 0.5 people leaving the space infected was safe enough. Based on the results, the client set a rule within the building that only two employees were permitted in the conference room for a maximum of four hours. As seen in the second chart, if every employee was wearing a higher-quality mask, perhaps provided by their employer, then they could increase to four employees for up to five hours, or six employees for up to three hours, etc. It was important for this client to have the decision to reopen backed by data. The communication to building occupants about the limited hours and maximum people allowed in the conference room was much easier for our client.

By implementing reopening strategies based on data, not speculation, confidence can be restored for building owners and facility managers, and employees can get back to a shared environment, collaborating and having in-person meetings once again, no longer feeling isolated at home. ▲

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