Creating the Better Workplace Under Real-World Conditions

In recent years, a vast amount of research has been conducted, articles written, and presentations made regarding the growing "value" of the workplace. From this wealth of information, two facts have become very clear:

- People spend 90% of their time indoors.
- Our physical environments are responsible for 70% of our state of health (Genetics and Quality of Medical Care are responsible for the other 30%).

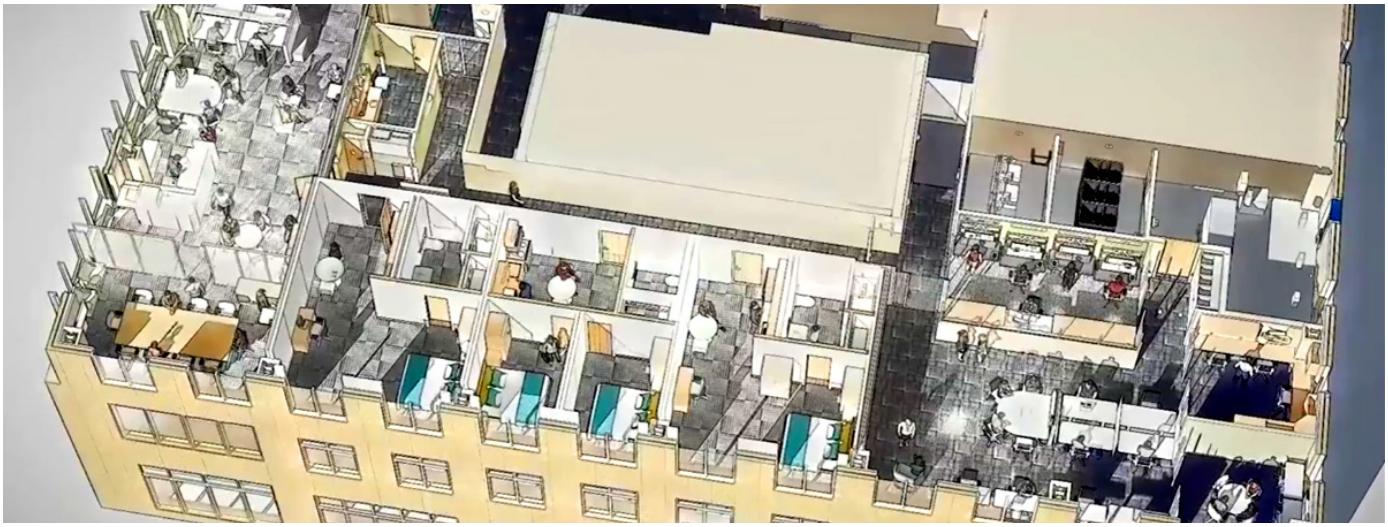

Image: snapshot taken from the WELL Living Lab video - http://welllivinglab.com/

Backed by such data, the importance and impact of interior environments on the people who work within them has never been as fully understood as it is today. Building owners AND their occupants expect more. This expectation comes with its own set of 21st century challenges, including a world full of information from abundant sources. How does one confirm the quality and relevancy of this data? Without correct context, research can be easily misunderstood or even false.

Enter the WELL Building Standard (WELL) and the WELL Living Lab. Created by Delos, WELL has combined the knowledge of medical science with that of building science. Now in *Version 2.0*, WELL is aimed at being more flexible and possible for all types of projects in every part of the world.

In 2015, Delos and the Mayo Clinic created the *WELL Living Lab*, designed to "transform human health and well-being in the indoor environment." With the intent of merging the silos of health science, building science, and business economics, the WELL Living Lab enables scientists to conduct real-world building research with human subjects in a 7,000 sq. ft. applied research laboratory facility. This highly flexible, HIPAA compliant, and environmentally adjustable "Living Lab paradigm" has allowed researchers unique advantages in the "control and monitoring of environmental conditions in the experimental space and around individual participants." In addition, more typical research tools such as regular surveys and interviews are conducted and recorded to capture specific responses from the participants.

Recently completed and analyzed, the first research study for the WELL Living Lab was designed to "test the ability of the lab facility to vary combinations of environmental conditions and measure their effects on the participants." Workers spent their day in the lab office space and performed their normal daily work routines. The initial lab variables tested were those conditions which frequently garner the most negative comments: Lighting, thermal and acoustical conditions and their perceived resultant comfort levels. These three conditions were combined into a variety of different environmental "scenes" which were varied over the course of the 18-week study. The full-length report, as detailed in the journal ***Building and Environment***, provides an in-depth look at the facility and space configurations, the participants, the varied scene types, with their make-up, and the survey's scientific method.

A "baseline" scene was established at move-in and occupancy. Scenes were created, research data collected and surveys conducted. As compared to the baseline, study participants were:

1. Least satisfied with the Scene 3 workplace which incorporated low color temperature light fixtures, cooler-than-normal workplace temperatures and low-level white noise. These conditions made it more difficult for participants to complete their work. In addition, the study found that participants were marginally less energetic, and less happy, after a day in this scene. (Some specifics: Scene 3 featured 2700K lamps, dark glass tint, closed windows and blackout shades, 67°F temperature, and the low-level white noise.)
2. Less satisfied with lighting levels when blackout shades were closed, with no access to daylight. (Lighting temperature was varied, but does not appear to have been mentioned in surveys.)
3. Marginally more distracted in Scene 5 - No natural light and high-level white noise.
4. Better able to sleep at night when light fixtures used 6500K lamp temperatures. (This happened in both Scenes 5 and 6.)
5. Differing in their satisfaction with air circulation and air quality between scenes, even though these were NOT intentionally varied during the study.

The study also found that changing one or more of the variables elicits additional responses – sometime favorable, sometimes not. Mixing variable modifications had similar outcomes but, it appears, made it challenging to predict whether participants would find the modifications beneficial or not. Interestingly, sometimes perceptions changed even though a variable had NOT changed.

The Holy Grail of workplace design continues to be productivity. Designing for the participants and what they do is paramount. The environment in which they do their work is equally so. As building systems continue to become more flexible, variable and responsive, the outcomes will be positive for the participants and forward-thinking building owners. In the meantime, the WELL Living Lab will continue its research, and Hixson will also continue to monitor, learn, and share the results from this important endeavor.

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To learn more, contact:
Brian MacKenzie, Director
Client Development
bmackenzie@hixson-inc.com
P: 513.241.1230
www.hixson-inc.com

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