HAPPY MEETINGS LIVING LAB: BIOPHILIC ELEMENTS & WORKER WELLBEING

CHALLENGE

Buildings are fundamentally linked to the health and wellbeing of the people who live in, work in and visit them. In an office, the quality of the indoor environment has a profound impact on worker health (both physical and mental), productivity and satisfaction. Recently, the World Health Organization (WHO) officially classified 'burnout' as a medical condition, resulting from 'chronic workplace stress that has not been successfully managed.' Given that buildings are ultimately for people, what changes can be made to improve the quality of life of building users?

OPPORTUNITY

One way to improve an indoor environment is by implementing biophilic elements, that is, natural elements such as plants, water and daylight. Biophilic elements have been shown to reduce stress, increase creativity and improve air quality in all types of buildings. In an office environment, the inclusion of biophilic design elements can also improve worker health and well-being. The goal of this living lab is to measure the impacts of biophilic elements in meeting rooms.

RESEARCH QUESTION

How do various biophilic elements in meeting rooms impact air quality and user experience?

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INNOVATIONS

The ***uHoo*** device contains nine air quality sensors to continually monitor the air quality of different spaces and report the results via an app. The app will send alerts if there are any sudden changes in air quality and also provide tips on how to make changes to improve indoor air quality.

Read more at uhooair.com

The LifeMCC moving living wall by ***Sempergreen*** is a free-standing plant wall that can be moved around and used in different spaces. Each living wall incorporates plants that have proven air-purifying qualities, in addition to being aesthetically pleasing.

Read more at www.sempergreen.com

EXPERIMENT

This living lab was conducted at the Provada real estate conference in Amsterdam. Three identical *Skepp* meeting rooms in the conference area were used to measure the impacts of biophilic elements. The meeting rooms were set up as follows:

1. Control room (no biophilic interventions)
2. Biophilic imagery room (images of nature in the room)
3. Biophilic installation room (with a green wall from *Sempergreen* installed)

In each meeting room the air quality (including CO_2, humidity, temperature, fine dust and ozone) were continuously measured using a *uHOO* air quality monitoring device. In addition, meeting participants were asked to provide feedback about their level of alertness and their perceptions about the meeting spaces as a comfortable working environment.

IMPLEMENTATION TIPS

- Including live plants or images of nature into meeting spaces is an easy and affordable way to improve the quality of the indoor environment
- Make sure your meeting spaces are well ventilated, as CO_2 levels with air temperature can increase rapidly in small rooms with multiple people. Improving ventilation can be as simple as opening a window or the door during the meeting
- Making air quality monitors visible (such as the *uHoo* device) can create awareness and spark conversations about air quality

MEASURED IMPACTS

Environmental

- The green wall room was up to 2°C cooler than the other rooms and cooled down faster after meetings
- The green wall room had lower concentration of volatile organic compounds (VOCs) (6% lower) and fine dust (25% lower) than the other rooms

Economic

- Improved air quality and employee alertness can lead to cost savings associated with increased productivity and decreased absenteeism

Social

- Participants reported feeling more alert with the nature imagery (13%) and with the green wall (24%) than the room without biophilic components
- Participants rated the rooms with biophilic elements as more pleasant work environments (21% - 24% higher)
- The room with the green wall was the most popular meeting room: people naturally gravitated towards this room as a work and meeting space

PARTNERS

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