Ecostratum Insights

Summer 2021- Special Edition

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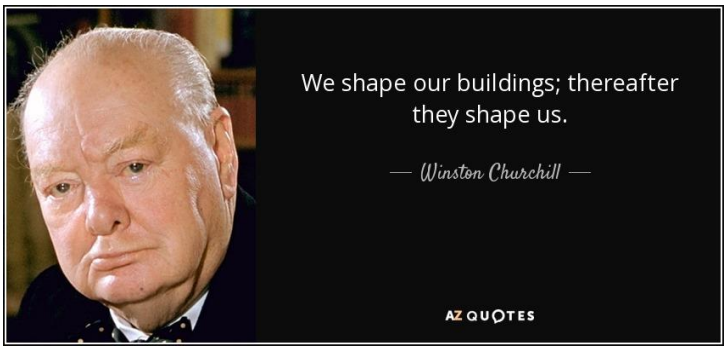

Foundries of Thought?

The 19th century foundary was a workshop for casting molten metal into new usable forms. The Idea Foundry, Columbus, Ohio, and The Cincinnati Foundry project located at the former Macy's Store on fountain square are $300 per month memberships to coworking hubs. What happens post-pandemic? Expect the new business model to include classes in leading edge technologies to rebuild membership. More than ever, apply air quality science to determine acceptable occupancy load for work conditions. Prevent outbreaks that will surely derail new business. Develop your SOP, test working assumptions and use ROI for decision making.

3-D Printing: Additive Manufacturing Apps

Customized prescriptions are desirable. Instead of making formularies, then waiting for patients who need them. 3-D printing allows customized prescriptions for your unique needs. This only reinforces the saying "the patient comes first". The same idea of customization applies to integrated circuits (ICs). 3-D printing is already used to make printed circuit boards (PCBs) so using it to attach ICs to PCBs is efficient. So what? This eliminates a tedious and hazardous welding process while adding flexibility to fabrication – the advantage is customized circuitry. Ecostratum is helping air test 3-D scale-up operations. Did you know that 8 of the top 10 semiconductor foundries making ICs are in SE Asia, China, or South Korea and that on February 24, 2021, the Biden Administration announced review of federal support up to 37 billion to "supercharge" U.S. manufacturing? Why? IC supply-chain disruptions are adversely affecting important parts of the economy: consumer electronics, telecommunications, and defense-

Ask the Expert?

Q: Do HEPA filters capture viruses and improve IAQ?

A: Yes, but not how you think. Filters work because droplets collide with fibers and stick – even though the pore size is large enough to let them pass. It is temporary adhesion, not straining that works. Now you know why they are not 100% efficient.

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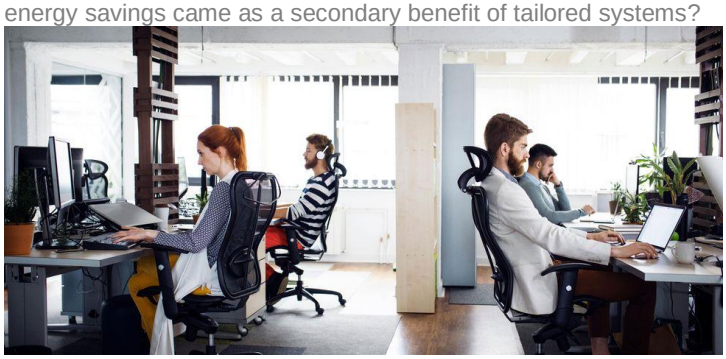
Ecostratum

CDC Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

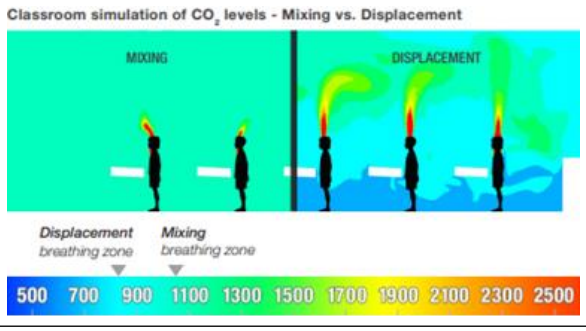
Returning to Office Work

What's clear is that employers and employees now know far more about remote work than they did at the start of the pandemic. The CDC's return to work position "If you return to work, continue to protect yourself by wearing a mask, 6-ft social distancing and get a COVID-19 vaccine." However, these short-term behavioral guidelines are not the long-term solution. What is? Maximizing the HVAC systems to effectively dilute pollutants accumulated indoors. In short, HVAC designs prior to 1990 did not use demand control ventilation (DVC) which is triggered by CO_2 sensors. So. The post pandemic challenge is to determine if your building has DVC systems capable of meeting current minimal fresh outdoor air standards (called ASHRAE 62.1). For pre-DVC systems, reuse forced draft systems already in place and test CO_2 to determine how much additional airflow is needed to achieve concentrations below 1000 ppm CO_2. Did you know that California schools worked with the CDC Department of Health & Human services to study classroom CO_2 accumulation for improved comfort and that energy savings came as a secondary benefit of tailored systems?



CO_2: The Key IAQ indicator in the COVID Era

The correct amount of exhaled air (CO_2) allowed to accumulate indoors is under review. In short, the tradition of mixing fresh outside air to dilute stale indoor air is being challenged by a non-mixed method called displacement – which allows *hot air* to rise and leave the room. The advantage is lower CO_2 levels (called bioeffluent) which can spread bacteria and viruses. Perfect for the COVID era, but with possibly higher energy costs. Ecostratum is working with math models to balance better IAQ with the energy requirements of air displacement systems.



		Yes	No
Commercial Office Application	……..	☒	☐
Work from Anywhere Application	……..	☒	☐
Well Building Institute™ Application	……..	☒	☐
In-Person Learning Application	……..	☒	☐