"We shape our buildings; Thereafter, they shape us."
- Sir Winston Churchill

ASK the Expert?

Q: What types of sensors are used in Demand Control Ventilation.

A: CO$_2$ sensors are most common followed by moisture, heat, photo cells and occupancy counters

OSHA
Occupational Safety and Health Administration

1. OSHA's COVID Vaccination-or-Weekly Testing Emergency Temporary Standard was blocked by the US Supreme Court on January 13, 2022. This sets in motion employer self-mandated rules.

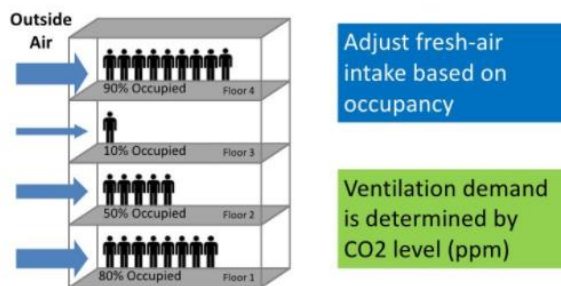2. The requirement for CMS funded health care workers to be vaccinated was upheld.

3. Supply chain management is moving from Just-in-Time to short-term warehouse storage. Why? To capture productivity when scarce skilled labor is available. Storage costs are small versus labor costs.

Demand Control Ventilation (DCV)?

Developed in the 1980's for energy conservation, DCV uses sensors to measure the need for fresh outside (OA) air as occupancy increases. The OA air dilutes indoor pollutants. The key concept is that OA supply is constantly matched to occupancy. This is more efficient than either continuous or programmed HVAC operation. DVC systems are endorsed by the U.S. Green Building Council. It's a double win - both energy savings and better indoor air quality. If you have or want DVC, test your carbon dioxide levels to evaluate potential benefits.

Demand-Controlled Ventilation (DCV)

Outside Air

90% Occupied — Floor 4
10% Occupied — Floor 3
50% Occupied — Floor 2
80% Occupied — Floor 1

Adjust fresh-air intake based on occupancy

Ventilation demand is determined by CO2 level (ppm)

POWERCAST Wireless Sensors

Computational Fluid Dynamics (CFD)

You can't improve what you don't measure. Worse. You could measure the wrong thing. CFD is software used to solve airflow problems. Air streamlines reveal invisible pathways. It can be done using your own BMS outputs – no onsite interruption.

Velocity 36 / 29 / 22 / 14 / 7 / 0 [m s^-1]

Ansys 2021 R2 STUDENT
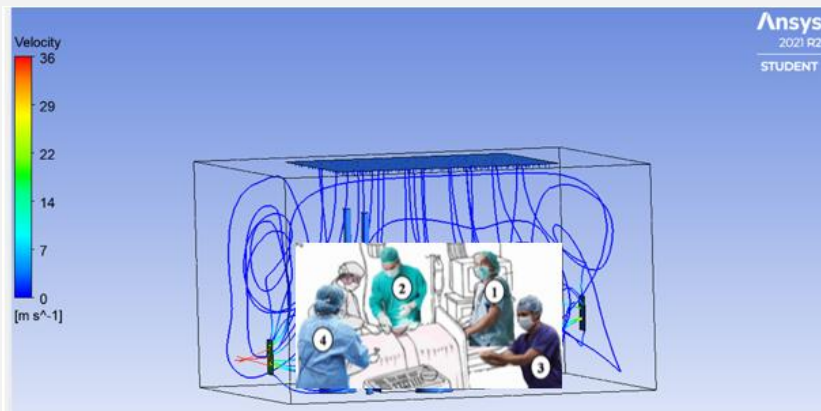
	Yes	No
Clean Room (Hospital & Drug) Applications …….	☒	☐
Office Space & Industrial Applications …….	☒	☐