

HVAC Design For IAQ

Optimal Comfort, Health, and Energy Efficiency



1 Ventilation

Use an Air Flow Measurement Station (AFMS) to ensure optimal fresh air ventilation across all airflow rates. Zone level alerts.

2 Energy Recovery

Exhaust stale building air while recovering energy. Options include; Rotary wheel, fixed plate exchangers, heat pipe systems, and pumped run-around.

3 Filtration

Pre-Filters - Initial Stage Media, Various Efficiencies.
Advanced Filters - High Efficiency Media, Activated Carbon.

4 Coil Treatment

Protective coatings and/or special materials to limit microbial growth.
UVC for surface treatment of coil and condensate pan.

5 Dehumidification

Cooling coil provides primary humidity removal. Re-heat options to avoid over cooling are available. Run-around, precooling, reheating systems.

6 Humidification

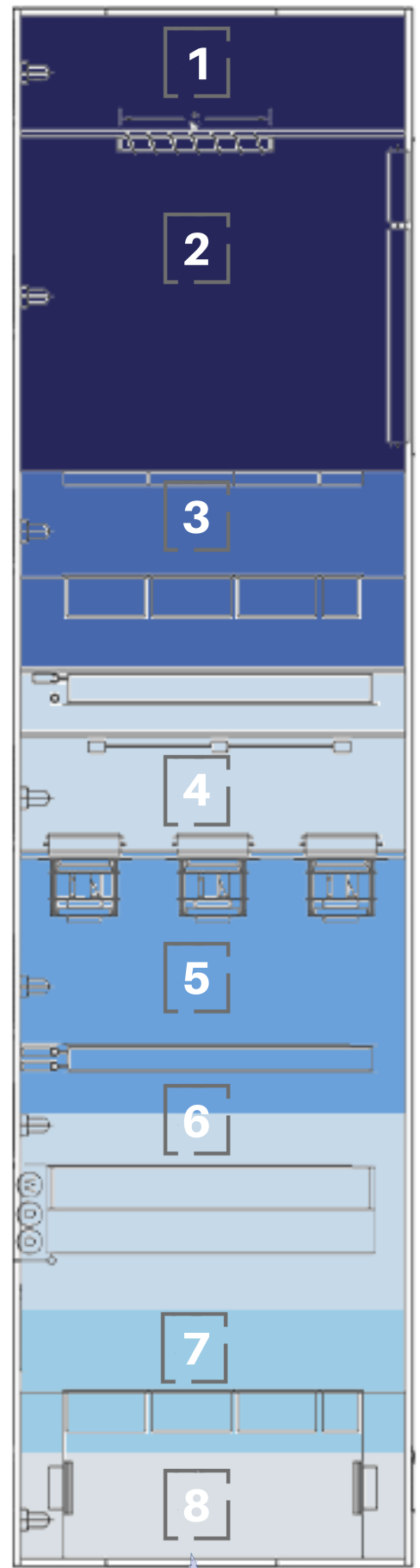
Technologies for increasing and maintaining healthy levels of humidity; steam, adiabatic / evaporative, and atomizing.

7 Final Filtration

Added stage of protection in the AHU, up to 99.99 (HEPA).

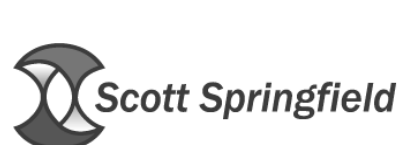
8 Sterilization / Purification

Application of advanced technologies for air treatment of biologicals, chemicals, smoke, and/or odors.



Zone Level IAQ Measures

- Room pressure controls for critical spaces.
- Localized humidifiers - electronic, steam, atomizing technologies with or without blowers.
- Filtration at air outlets (especially critical zones).
- CO2, occupancy, and others sensors enable smart buildings
- HVLS fans increase circulation for proper air changes, increased air movement enhances occupant comfort



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