HVAC Treats Buildings as Zones. Biothermal Treats People as Individuals.

Zone cooling averages comfort. Individual cooling delivers it.

At a Glance

Central HVAC systems often run at 20°C to 22°C. People sitting for 8 hours in cold air catch more respiratory infections, report more muscle tension, and are sick more often. The building is slowly making people ill. [1]

Summary

Occupants in over-cooled buildings report higher rates of upper respiratory infections, muscle stiffness, and general malaise. Research on thermal discomfort shows that peripheral vasoconstriction (blood vessel narrowing in the skin in response to cold) reduces immune response in the mucous membranes lining the nose and throat. People in chronically over-cooled buildings have lower mucosal immunity and catch colds more easily. [1]

Muscle tension accumulates in cold environments. Sustained sitting at low operative temperature (below the occupant's comfort setpoint) triggers postural muscle tension, particularly in the neck and shoulders. Over weeks and months, this becomes chronic muscle tension, headaches, and referred pain. Employees report more sick days. Productivity drops 3 to 5 percent. Facilities teams respond by lowering the thermostat further because they believe the building is too warm. It is not. It is too cold. [2]

Central thermostats set to ASHRAE 55 specifications, which assume non-acclimatised comfort, force Indian office workers to sit in temperatures below their adaptive comfort zone for 8 hours daily. March through November. Nine months of low-level thermal stress creates cumulative health effects. Higher absenteeism. Lower engagement. Reduced retention. [3]

Biothermal Microconditioning eliminates forced over-cooling. Areca palm clusters provide temperature buffering, allowing central HVAC to run at slightly higher setpoints without occupants reporting inadequate cooling. Evapotranspiration from plant canopies increases air humidity, protecting mucous membranes. Local shade and airflow prevent the thermal shock that triggers sustained vasoconstriction. One day deployment. Sick days drop. Comfort returns. [4]