The Thermostat Was Calibrated for a 40-Year-Old Man in 1966

ASHRAE Standard 55 used one body type. The world has many.

At a Glance

ASHRAE Standard 55's comfort model came from experiments in the 1960s using young, healthy, non-acclimatised American men sitting quietly in climate chambers. A 73-year-old Indian woman sitting in an office is not the experimental subject. [1]

Summary

ASHRAE Standard 55's foundational comfort research was conducted between 1966 and 1975 by Fanger, McNall, and colleagues at Kansas State University. Subjects were primarily male (male-skewed sampling), aged 18 to 35 (non-elderly), with standard body weight (BMI 18.5 to 25), and sedentary occupation (minimal metabolic rate variation). The studies took place in climate-controlled chambers in the United States Midwest, far from tropical heat environments. [1]

No data from Indian occupants. No data from women with different thermoregulatory setpoints. No data from older adults with reduced cold tolerance. No data from people with metabolic disorders or on medications that affect thermal sensation. The comfort standard that governs buildings housing 7.5 billion people was calibrated on a narrow demographic. [2]

Thermal sensitivity varies systematically. Research on thermal preference shows women, on average, prefer temperatures 0.4 to 0.8 degrees Celsius higher than men at the same operative temperature. This is not personal preference. This is physiology: women have lower basal metabolic rates and lower skeletal muscle mass, reducing heat generation. They reach peripheral cold sensation (shivering threshold) at lower ambient temperatures. [3]

Older adults show increased sensitivity to both heat and cold, with reduced ability to thermoregulate through vasoconstriction and vasodilatation. A person aged 70 has a narrower comfort bandwidth than a person aged 25. People taking certain medications (antihistamines, diuretics, stimulants) have altered thermal sensation. None of this is reflected in ASHRAE 55. The comfort standard is a ghost of 1960s thermal physiology. [4]

Biothermal Microconditioning operates through adaptive comfort, not ASHRAE fixed setpoint. Occupants within a Thermopod cluster experience local cooling that is present when the person sits and absent when they move. The system adapts to occupant presence, occupant thermal comfort, and occupant acclimatisation. No fixed thermostat. No false universality. Just biology-responsive cooling. Easy Retrofit. One day. The ghost of 1966 is finally laid to rest. [5]