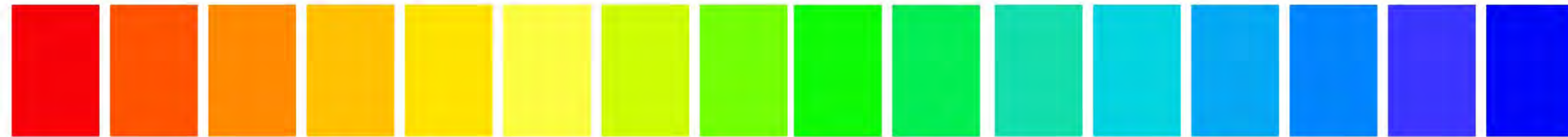


Development of an
Adaptive Thermal Comfort
Standard for India

Background

Given India's rapid economic growth and concomitant expansion in its commercial sector, soaring demand for air-conditioned commercial buildings can be confidently predicted. This increased demand for air-conditioned buildings in India has been attributed to an increased expectation for stable comfort conditions as the workforce shifts away from an industrial production towards a service-orientation that is office-based. If permitted to grow unchecked, building air-conditioning will add immense pressure on electricity infrastructure and exacerbate the already extreme peak-demand problem in the country.

In the absence of an adaptive thermal comfort standard specifically focused on India's climatic and cultural context, the recent trend in India is to design air-conditioned office buildings (that often operate at 22.5 ± 1 °C all year round) to meet the stringent "Class A" comfort specifications articulated in documents such as ISO 2005 and ASHRAE 55 for air-conditioned buildings. This approach may elevate Indian comfort expectations to levels that require unsustainable energy inputs, without substantially improving overall occupant comfort, satisfaction and productivity.

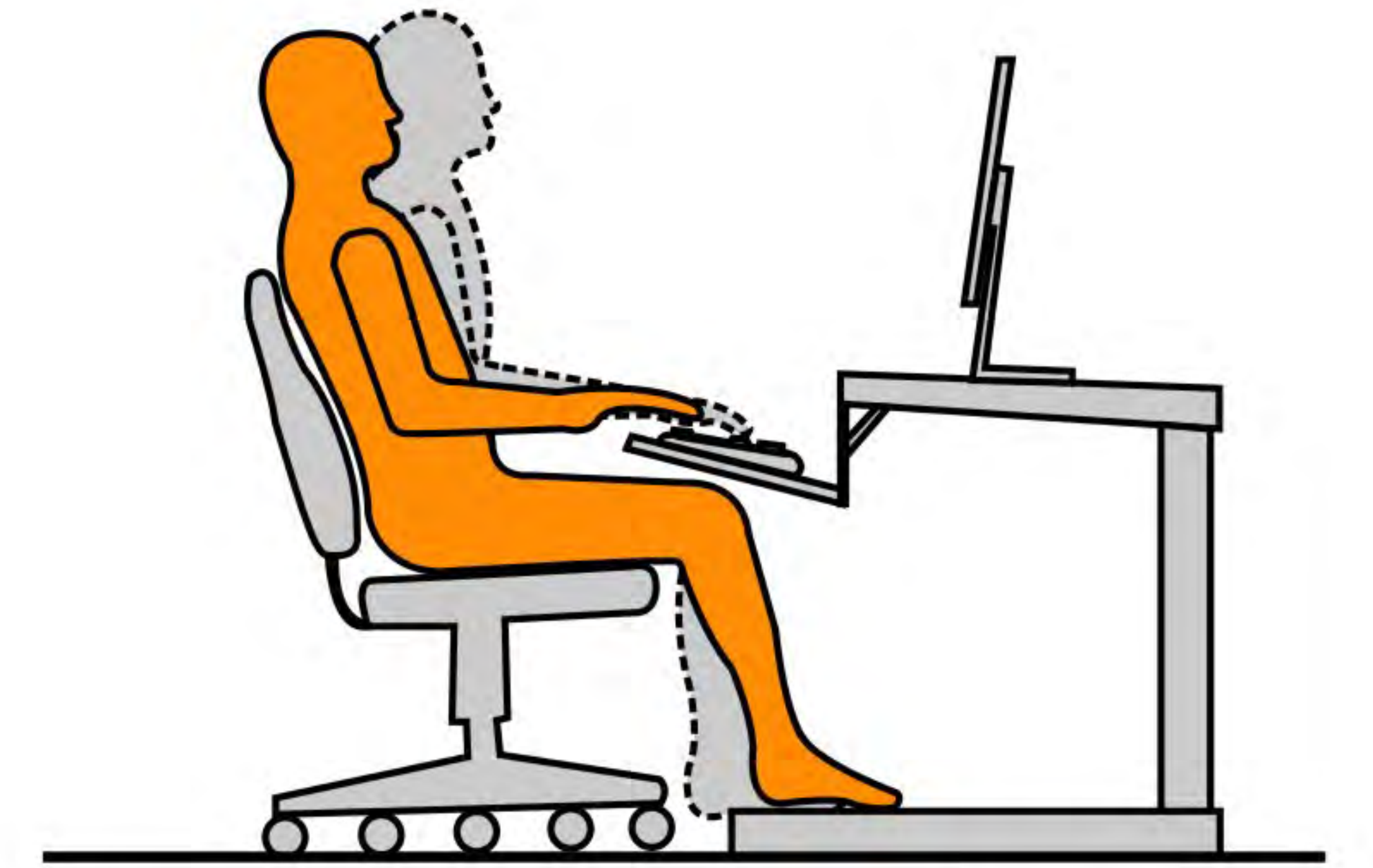




About Project

This project will develop an adaptive thermal comfort standard based on rigorous field studies of commercial buildings and their occupants located across the climate zones of India. By climatically adapting indoor design temperatures, the standard will offer India energy efficient low carbon development pathway for its commercial building sector without compromising overall comfort or productivity. In addition, the proposed research will develop a contextual design approach to comfort that is cognizant of the greenhouse emissions abatement potential of naturally ventilated and mixed mode buildings.

This will be done by using extensively validated and scientifically recognized methodologies for post occupancy evaluation and detailed thermal assessment of buildings and occupants' experience.



Study will encompass all five main Indian climatic zones and the thermal comfort surveys will be repeated for seasonally distinct times of year to ensure adequate coverage of a wide range of comfort conditions. It should be clear that the goal is not to compromise on levels of comfort, but rather to demonstrate a much wider-than-usual band of comfort deemed acceptable whenever occupants are permitted to adapt to their indoor environment.

About CEPT University

CEPT University sponsored by Centre for Environmental Planning and Technology Trust, is a premier institute in India offers various academic and research programs.

Centre for Sustainable Environment and Energy (CSEE) at CEPT University aims to providing an impetus for research in energy efficiency in built environment & energy - resource management at large.

CSEE has been awarded a status of a "Regional Energy Efficiency Centre on building energy efficiency" by USAID ECOIII program and "Centre for Excellence in Solar Passive Architecture & Green Building Technologies" by Ministry of New and Renewable Energy, Government of India.

This study is a collaborative effort initiated by Centre for Sustainable Environment and Energy (CSEE) at CEPT University through partnership with the leading international research team for post occupancy evaluation in the built environment from the University of Technology, Sydney led by Leena Thomas and eminent international expert on thermal comfort Professor Richard de Dear (University of Sydney). CSEE is also partnering with local Indian academic and research institutes to accomplish this exercise. This study is supported by Ministry of New and Renewable Energy, Govt. of India and Shakti Sustainable Energy Foundation, New Delhi.

For further information

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