

# Sustainable Design - Using Energy Efficient Air Movement in Air-Conditioned Spaces

## OVERVIEW

*With a focus on passive design - working with the climate, not against it - Rebecca Steffanoni will give you a better understanding of how to incorporate air movement in a building's design, reducing energy consumption and offering a more sustainable comfort solution.*

## LEARNING OUTCOMES

1. Identify the factors that affect thermal comfort. (Design; Conceptual Design; 3.4)
2. Name the 6 factors that affect thermal comfort (Design: Schematic Design; 4.7)
3. Understand the use of elevated airspeed to improve thermal comfort, air distribution, and energy efficiency in conditioned spaces. (Design 3.2; 4.4)
4. Describe the design benefits of minimising ductwork, lowering HVAC first costs, and improving ventilation rates. (Design 2.2; 2.3; 4.5)
5. Explain stratification and the energy-saving potential of de-stratifying a large open space. (Design 3.3)

## FORMAL CPD ACTIVITY QUESTIONS

1. **What standard defines thermal comfort?**
  - a) The Green Star rating system
  - b) ASHRAE Standard 55
  - c) ASHRAE Standard 90.1
2. **Air temperature and humidity are the most important factors in determining thermal comfort.**
  - a) True
  - b) False
3. **Which of the following are benefits of incorporating elevated air speed in a space?**
  - a) Energy savings
  - b) Improved IEQ
  - c) Reduced initial materials costs
  - d) All of the above
4. **A fan can change the perceived air temperature by up to 6 degrees?**
  - a) True
  - b) False



5. Fans cool spaces so they should be placed throughout a whole facility to provide even air distribution?
  - a) True
  - b) False
  
6. A space can maintain the same level of comfort using just air conditioning or using air conditioning paired with elevated air speed?
  - a) True
  - b) False
  
7. In heated spaces in the winter, indoor air tends to stratify with the hottest, less dense air accumulating at the floor due to gravity?
  - a) True
  - b) False