CHAPTER 2 - CONSERVATION AND EFFICIENCY: BUILDING SYSTEMS

502.18 COOLING OF CORRIDORS AND PUBLIC AREAS

Platinum Sa'fa

INTENT

To utilise renewable energy based systems for cooling open spaces thereby reducing associated carbon emissions.

REQUIREMENT

For Platinum Sa'fa and for all new buildings other than villas, all open corridors and open public areas shall be cooled by use of renewable energy systems.

SIGNIFICANCE

During summer months, building occupants and visitors accessing open corridors and public spaces are often exposed to high temperatures, which leads to thermal discomfort. This discomfort if addressed, would encourage people to use outdoor space more often. This would not only be beneficial for human health but also promotes efficient use of outdoor spaces.

Cooling of corridors and outdoor spaces through building systems would increase the energy consumption of the building and thereby increased operating cost. However, cooling of these spaces by using renewable energy systems would help to cut the overall building energy cost, energy demand and reduce carbon emissions.

APPLICABILITY

This regulation is applicable to all building types, except villas. Refer to Table 101.07(3) in Section One - Administration for detailed applicability levels.

IMPLEMENTATION

This regulation requires the project team to utilise various innovative cooling strategies to reduce thermal discomfort conditions in open corridors and open public areas. Renewable energy systems should be used for implementing these cooling technologies.

Evaporative cooling (direct / indirect) is a commonly used method to cool open spaces because of its high energy efficiency and it can be powered by an on-site renewable energy system.

In evaporative cooling (direct / indirect) when air blows through wet medium or atomised water, some of the water droplets gets transferred to the air thereby lowering air's dry bulb temperature. The cooling effect depends upon the temperature difference between dry and wet bulb temperatures, the pathway and velocity of the air and the quality and condition of medium.