CHAPTER 1 - CONSERVATION AND EFFICIENCY: BUILDING ENVELOPE

501.04 AIR LOSS FROM ENTRANCES AND EXITS

Silver Sa'fa

INTENT

To reduce wastage of energy and to maintain adequate thermal comfort.

REQUIREMENT

For all new air conditioned buildings other than villas, loss of conditioned air in regularly used air conditioned entrance lobbies, must be mitigated by use of efficient barrier system.

SIGNIFICANCE

Building entrances in many places like supermarkets, shopping centres, office and residential towers etc. (where the door opening frequency is high) plays a significant role in building's energy consumption. Heat transfer occurs when air enters through the entrances and mixes with conditioned air inside the building. Leakage of conditioned air through entrances adds to the energy wastage, and as a result, this requires additional energy to condition the inside air, thereby increasing the energy consumption.

Having an efficient barrier system at air conditioned building entrances not only reduces the energy losses but also helps maintaining adequate internal thermal comfort for building occupants. It can also act as a barrier for airborne dust, pollution, fumes and bad odours from entering into the building.

APPLICABILITY

This regulation is applicable to all building types. Refer to Table 101.07(1) in Section One - Administration for detailed applicability levels.

IMPLEMENTATION

Many buildings have an entrance lobby (space immediately between the entrance door and the interior), which acts as a transition area into a building. Heat transfer occurring through the entrances may have a significant impact on energy consumption in a building. This regulation applies to all the buildings that have an entrance lobby and also to the main entrances in showrooms.

Efficient barrier systems should be provided to make sure that the conditioned air is not lost through the lobbies. Conditioned air loss can be minimised with an efficient door design that considers door's function, location and traffic. There are several door design techniques available. The project can incorporate either one or combination of techniques to meet the compliance. Some of them are given below.