

UK Schools Passive Cooling, UK

Although schools in the UK may require cooling for only a few days of the year but the current regulations dictates to keep the upper limit below an acceptable limit. This over-heating may occur south facing classrooms.

Conventional mechanical cooling might solve this issue but cost associated with not only installation but also on going maintenance services can not be accommodated with the school budgets.

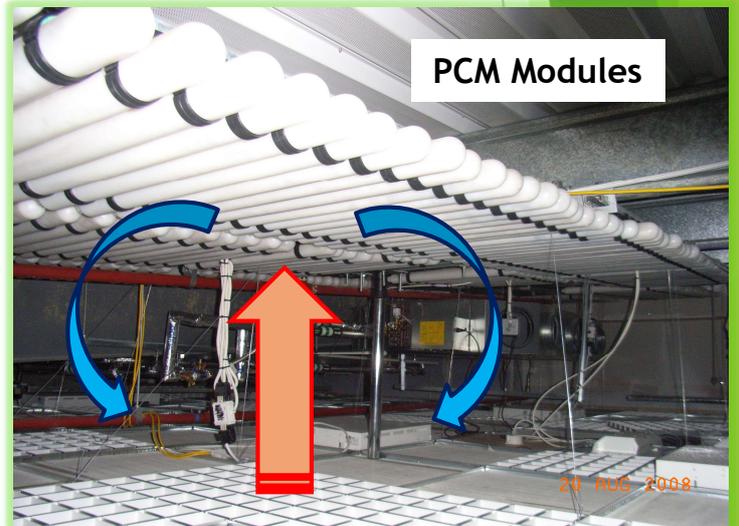
Old school building tends to be lower exposed ceiling and therefore may be difficult to apply the passive cooling modules but they tend to be heavy building with lots of building mass with smaller window areas hence they do not get warm rapidly like the newly built light weight classrooms. A typical light weight construction as illustrated in the pictures tends to be getting very rapidly warm once the sun comes up and therefore over-night stored energy acting like a heat sponge to soak up the heat both from solar and other internal loads.



Eggcrate Grilles

The cooler night ambient is used to store cool energy within the PCM passive cooling modules placed within the false ceiling area and this stored energy enables the day cooling loads / solar gains within the classroom is absorbed by PCM modules without using any mechanical cooling machinery.

+27°C (81°F) PCM encapsulated in 50mm (2") diameter x 1,000mm (40") HDPE **TubeICE™** containers. Tubes are fixed at ceiling level using standard 50mm (2") pipe bracket system behind the false ceiling panels. Solid ceiling panels are replaced with egg crate panels allowing air to escape to the ceiling void whereby tubes acts like a heat sponge..



PCM Modules

