

NTU sports a new GREEN HALL

The new three-storey NTU sports hall, which opens in 2016, will boast the region's first large-span timber structure roof. The 10,000 sq m space will benefit from 40 per cent in energy savings and use 30 per cent less water. Carolyn Khew takes a closer look at the building.

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WAVE-LIKE TIMBER ROOF

At over 70m long, the arching timber roof provides five times better heat insulation compared with concrete roof structures. This ensures that minimal heat energy gets absorbed into the roof and reduces the cooling load needed for the hall, which can house three basketball courts or 13 badminton courts.

GLASS LOUVRES FOR NATURAL VENTILATION

Powered electrically, these louvres help to allow natural ventilation and sunlight into the hall when the conditions are appropriate. This reduces the amount of air-conditioning and lighting needed. There are also other common areas that rely entirely on daylight and natural ventilation, such as the carpark and staircases.

DOUBLE-SKIN WALLS

The outer wall consists of sunshade louvres made of timber, which help to cut out the solar heat and glare that comes into the building. This in turn reduces the cooling load. To cool the remaining air that enters the hall, metal coils with cold water flowing through them are installed in the inner walls, removing heat from the hall quickly.

WATER-EFFICIENT FITTINGS AND 'GREEN' PRODUCTS

- All water fittings in the sports hall are rated 'excellent' under the PUB's Water Efficiency Labelling Scheme.
- To monitor water usage, meters will be installed in common toilets.
- All the construction materials used in the building are Green Label certified. For example, the cement used is produced using recycled industrial by-products such as ash and slag.
- Ceiling tiles are made using mineral fibres from recycled newsprint and starch.