Rooftop greenery to cool down car park heat traps

There are about 660 multi-storey car parks in Singapore and though they save space, they also turn the heat up because their concrete roof's trap heat.

On a hot day, this can make their surface temperatures rise as high as 60°C.

This creates what is called the "urban heat island effect" in which concrete surfaces trap heat during the day and release it during the night.

And since these car parks are usually no higher than three or four floors, the surrounding air temperature goes up to the extent that residents can feel it.

To cool things down, the Housing Board and National Parks Board have started a pilot project to green the roof of a multi-storey car park in Punggol.

Associate Prof Wong Nyuk Hiong from the building department of the National University of Singapore said plants would absorb the heat and prevent the concrete from storing it.

The plants also cool the area when the water they transpire evaporates.

A study he did showed temperatures in built-up areas like Orchard Road were 4.5°C higher than in a rural area like Lim Chu Kang which has more greenery.

The new Punggol project launched on Thursday will not just be a roof garden.

For one, residents will not be able to walk through it as the vegetation will be dense.

It will also cost less than a rooftop garden.
The Star Online: Rooftop greenery to cool down car park heat traps

The roof of the car park is divided into four plots and different plants, some of them imported, will be tested to see which can survive the best.

The goal is to find a plant that grows well, looks good and needs little maintenance and watering.

But the plants will not be grown in soil.

Each plot will test a different growing surface – such as volcanic stones, pumice and sand, recycled brick and clay chips and mica.

Tay Bee Choo, a senior landscape architect with the Housing and Development Board, said soil will require loosening every month and will have to be fertilised regularly.

It will also break down after a while, unlike the other materials that are being tested.

The idea is to come up with a garden that needs to be tended only once or twice a year. – The Straits Times/Asia News Network