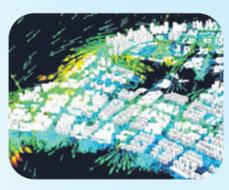
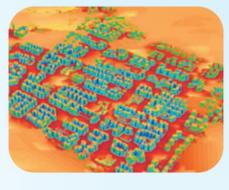


# Smart designs in Punggol Northshore Residences

**Higher use of smart planning tools in designing new town promises liveability and sustainability.**



**Wind flow**  
Computer simulations of wind flow through a town help planners to decide where buildings face and where to locate wind corridors to bring down ambient temperature and improve ventilation.



**Solar irradiance**  
Computers chart the amount of heat gain or solar exposure in a particular area throughout the year to identify spots with the highest heat concentration. This helps planners decide where greenery can be introduced to bring down ambient temperature and where best to install solar panels.



**Sun shade**  
Computer simulations of the shadows cast by a range of buildings at different times of the day or year can help planners decide where to place outdoor amenities such as playgrounds and fitness corners.

**Smart fans**  
Ceiling fans in community spaces will be automatically activated when the temperature rises and when there is a crowd. The speed is regulated, depending on human traffic, to avoid energy wastage.

**Smart lighting**  
Lighting in common areas will be equipped with sensors to automatically adjust luminosity based on human traffic. When there is little or no human traffic, luminosity can be reduced to 30 per cent, potentially reducing energy usage by as much as 40 per cent.

**Solar panel sensors**  
These will monitor the effectiveness of solar panels and predict when they will be due for cleaning and maintenance.



**Smart pneumatic waste conveyance system**  
Sensors will monitor the volume of waste and recyclables to optimise the deployment of people to collect them. As with all new public housing developments launched since 2014, centralised chutes for recyclables will be part of the standard suite of eco-friendly features in Punggol Northshore Residences.



**Basement carpark planning**  
Computer simulations allow basement carparks to be better designed to harness an area's wind flow for better ventilation. Ventilation airwells and open spaces can also be designed to take advantage of natural lighting so 24-hour lighting is not needed.

**Smart carpark**  
Sensors will monitor parking demand for residents and visitors. The system will be programmed to make available more parking spaces for visitors when residents with season parking tickets are likely to be out, and reduce the number of spaces for visitors in the evening, when residents are home.

**Smart irrigation**  
Sensors constantly monitor the amount of water retained in the soil. The data is fed into an automated system that manages landscape watering schedules so watering will be done only when necessary.

## WHAT ARE THE POSSIBLE SMART USES IN A SMART-ENABLED HDB HOME?

All 1,400 units in Punggol Northshore Residences will be fitted with smart power sockets and distribution boards. The smart infrastructure adds intelligence to just about any appliance – lamps, fans, coffeemakers and cameras – connected to a power source.

**Smart door lock**  
Home owners can remotely open the front door for visitors via a smartphone app. If they forget the keys, home owners can still unlock the front door using their fingerprint.

**Smart energy meters**  
Residents can monitor the energy consumption of every household appliance via an app and adjust usage to minimise bill shocks.

**Smart controller**  
Users can check surveillance footage throughout the flat, or control any appliance via an app on a tablet.

**Motion sensors**  
Caretakers will receive alerts on their smartphones when someone, an elderly person, for example, has remained motionless in the bathroom for an unusually long time.

**Smart aircon**  
Home owners can turn on the aircon via a smartphone app while driving home, to cool the flat before they get home.

**Panic button**  
This can be placed by the bedside. The elderly can trigger it during emergencies, such as when they fall or when they feel unwell. Caretakers will receive an alert via a smartphone app.

**Smart lamps**  
Lights can be controlled simply by speaking through the phone app.

