ENGINEERING AWARD (DESIGN) | BUILDING

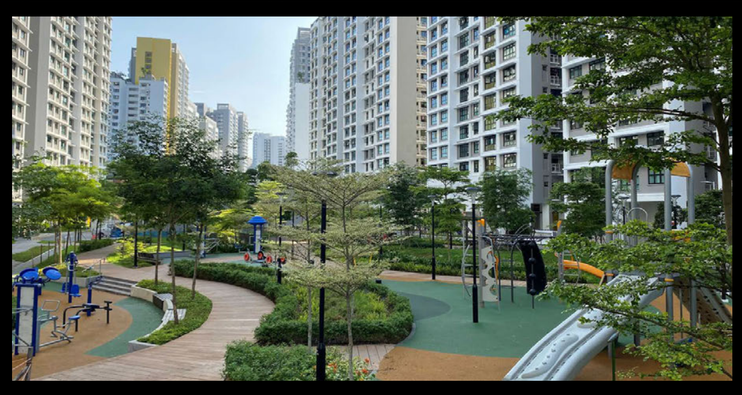
Waterfront I & II @ Northshore

Project Overview

Waterfront I & II @ Northshore is part of Punggol Northshore, HDB's first smart and sustainable waterfront district planned from design stage. The project consists of 15 residential blocks of 19 to 26 storeys (total 1,694 units), a 3-storey commercial building – Northshore Plaza with Electric Sub Station (ESS), 3 blocks of ESS, 3 blocks of social communal facilities and 2 common greens at Northshore Drive.

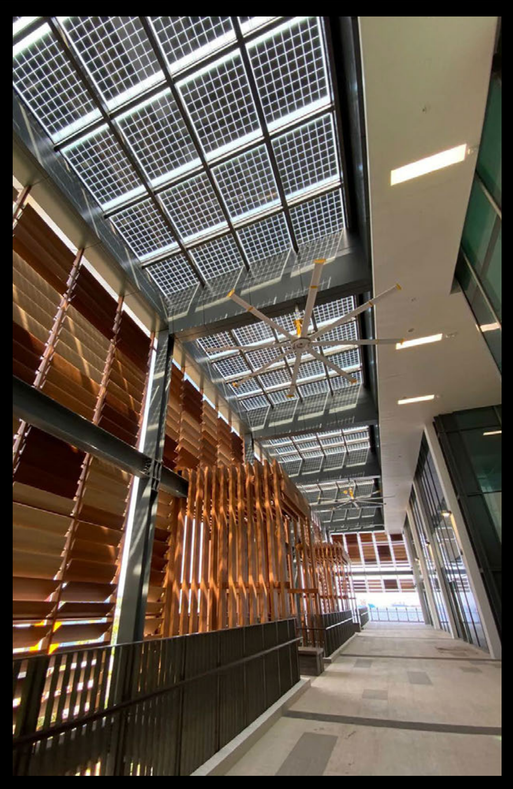
Project Achievements

- Waterfront I & II @ Northshore is the culmination and execution of HDB's multi-disciplinary team efforts which successfully piloted several smart initiatives
- These initiatives have been rolled out to all new public housing developments launched since November 2021, in support of the vision of Singapore as a Smart Nation
- This project has clinched the Green Mark Gold^{PLUS} rating under the Residential Building Category, for having adopted initiatives and strategies which are estimated to achieve:
  - Energy savings of 2,900,000 kWh/year
  - Water savings of 200,000 m^3/year
  - Annual maintenance productivity savings of 300 man-hours per block



Well-shaded playground and landscape deck

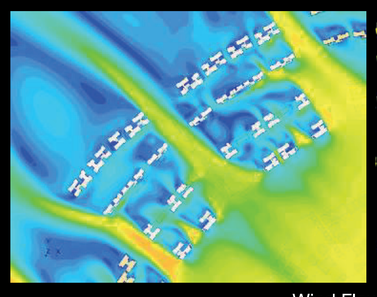
A comfortable environment at Northshore Plaza, located conveniently in the precinct

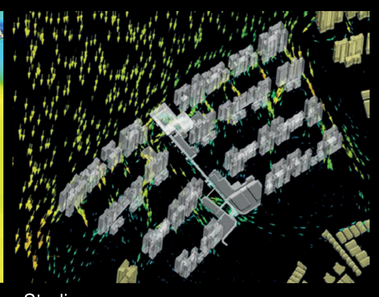


Building Integrated Photovoltaics (BIPV) and Smart Fans at Northshore Plaza

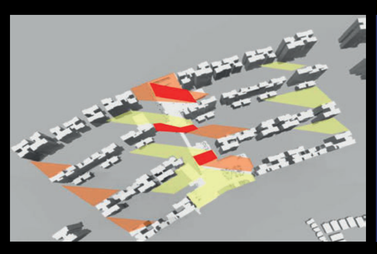
Smart Planning

Smart Planning was achieved through the adoption of a multi-disciplinary design approach, marrying engineering analysis with architectural design to create a more comfortable environment for residents. Through environmental modelling and data analytics, the design team was able to gain valuable insights of the possible climatic conditions and interactions when simulating various iterations of the building design.

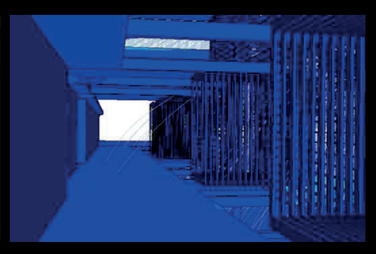




Wind Flow Studies



Sun Shading Studies

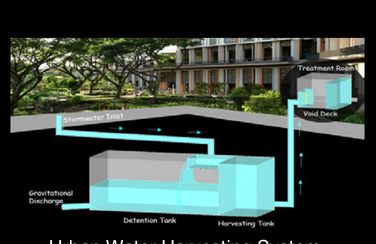


Wind Driven Rain Studies

Smart Environment & Estate

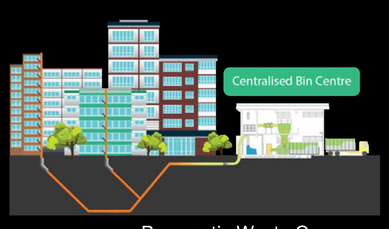
Smart Environment & Estate was realised via the design and integration of sensors into a wide array of systems. Some of these sensors capture real-time information on environmental factors to optimise system functions, while others collect estate data such as human traffic for analysis, which can provide useful insights for improving estate services, where maintenance is done during off-peak periods to minimise inconvenience to residents.

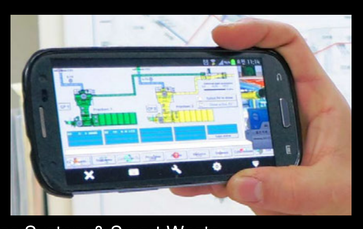
Smart Lighting



Urban Water Harvesting System

Smart Electrical & Water Sub-meter

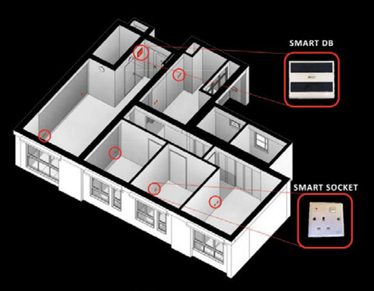




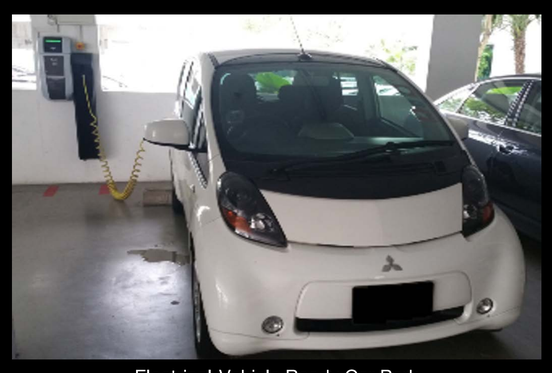
Pneumatic Waste Conveyance System & Smart Waste

Smart Living

Smart Living – Efforts to introduce smart technologies have gone beyond the common areas and into residents' flats. Flats in Waterfront I & II @ Northshore are equipped with smart distribution boards (DB) and smart sockets to help residents monitor their energy consumption across household appliances. This provision makes it easier for residents to adopt smart home solutions and applications offered in the market. Electric Vehicles (EV) - ready car park lots also encourage residents to adopt EVs, which reduces environmental pollution.



Smart Enabled Homes



Electrical-Vehicle Ready Car Park

HOUSING & DEVELOPMENT BOARD

HDB AWARDS 2022