Annex A – Geneo's sustainability features

Geneo comprises people-centric, resource-efficient and future-ready buildings where passive and active design strategies work seamlessly together to achieve the maximum positive outcomes.

Overall, Geneo is provisionally designed to achieve energy savings of about 13 million kilowatt-hours (kWh) per year, equivalent to powering the annual electricity consumption of over 3,343 four-room HDB flats. Meanwhile, Geneo's estimated annual potable water savings are sufficient to provide the water supply for 190 four-room HDB flats for a year.

Geneo's key sustainability design features are as follows:

- *Distributed district cooling network*

Geneo is the first cluster of buildings in Singapore Science Park to adopt a distributed district cooling network. In partnership with SP Group, the sustainable cooling solution will help Geneo to reduce carbon emissions, enhance reliability and improve cooling-related energy-efficiency. Instead of having an individual chiller system for each building, economies of scale are achieved by centralising cooling plants that distribute chilled water to all five buildings through a network of pipes to provide air conditioning.

- *Photovoltaic solar panels*

To offset energy demand, the roof-level layout of the mechanical and electrical (M&E) system has been optimised to fit approximately 1,400 photovoltaic solar panels that generate an estimated 1.1 million kWh of renewable energy each year – equivalent to powering the annual electricity consumption of 236 four-room HDB flats.

- *Design strategies to minimise energy use*

Geneo's layout has been carefully oriented to minimise heat gain from the sun. The closely knitted u-shaped arrangement of the various buildings and the design of their accordion facade help to block out sunlight, thus reducing the amount of heat trapped within the buildings. This arrangement also helps to channel wind to naturally ventilate the event plaza.

- *Central gardens and water features*

To enhance the biodiversity of Singapore Science Park, two verdant central gardens and a pair of water bodies provide Geneo with an ecological connection to the nearby Kent Ridge Park. Greeting visitors at the Geneo arrival area is a cascading water fountain bedecked with lush foliage along the edges of its planters. Dubbed the "biodiversity island", it features vibrant trees with colourful and textured bark, serving as a sanctuary for wildlife with native plants that attract birds and butterflies. The other water body takes the form of a naturalistic stream adorned with boulders and river cobbles that will be home to various aquatic plants and fishes.

- *Abundant greenery to reduce the urban heat island effect*

With a total landscape area of more than 21,000 sq m, equivalent to about 33% of its site area of about 64,000 sq m, Geneo's abundant greenery also helps to reduce the urban heat island effect. Approximately 80% of the trees planted along Geneo's site boundary are native species, specifically chosen to attract local birdlife, butterflies, squirrels and other fauna. In addition, foliage trees are planted to soften the appearance of the built structures and provide shade for pedestrians. Besides a lushly planted landscape deck that runs the entire length of Geneo, there are also walking paths in the central gardens that offer visitors a respite from the hustle and bustle of everyday life.

- *Encouraging low carbon mobility*

In support of the sustainable transport vision in the Singapore Green Plan 2030, Geneo has catered for several low carbon mobility options. These include 466 bicycle lots complemented with end-of-trip shower and locker facilities, as well as 14 electric vehicle charging lots with options for alternating current (AC) and direct current (DC) chargers. Users of public transport will enjoy a covered walkway to the Kent Ridge MRT station and nearby bus stop, while cyclists may utilise the dedicated 490-metre cycling path and park connector that is linked to the nearby Kent Ridge Park and other linear green corridors that are part of the National Park Board's island-wide Round Island Route.

- *Promoting active lifestyles*

To encourage the park community to lead active lifestyles, Geneo provides a diverse range of fitness and recreational facilities. These include a basketball court, a yoga deck, a running track that circles the perimeter of Geneo and a 25-metre lap pool in Citadines Science Park Singapore. For workouts with a twist, fitness enthusiasts can visit the "MyEquilibria" fitness corner located in 5 Science Park Drive. Designed by Italian artist Vito Di Bari, MyEquilibria features a seven-metre-tall sculpture which doubles up as an outdoor fitness system that supports an array of over 500 different forms of exercise from nine sports disciplines, including callisthenics and yoga.

- *Water savings initiatives*

Water-efficient fittings are adopted throughout Geneo and rainwater is harvested for non-potable uses. An auto-irrigation system is also employed to optimise water usage for landscaping.

- *Live energy and water carbon footprint dashboard*

A live energy and water dashboard will be integrated with the Building Management System to track the real-time energy and water carbon footprint of the Geneo buildings. The live dashboard will be placed at prominent location to enhance the environmental awareness of the building users and engage their support for Geneo's green initiatives.