Hong Kong's sub-tropical climate is typified by long summers of prolonged high temperatures and heavy summer rainfall, which contrasts to short and mild winters, with comparatively low rainfall. The summer therefore presents a situation where comfort indoor conditions normally mean providing ample cooling through airconditioning.

The power supply companies in Hong Kong rely on mainly gas-fired and coal-fired generation to supply users with electricity. A very small portion is generated from renewable energy sources. If this remains the case, where no significant uptake in initiating renewable energy, there will also be no significant reduction in green house gases (GHG) being released into the environment.

Advancing to Net Zero aims to empower the community to think more about how they consume and how they deal with waste. It requires a holistic approach and an awareness that needs to be brought to the forefront our daily lives; by using less, we may be doing more.

We look into the natural elements that presents themselves as plentiful; sunlight, rainwater and to a certain extent wind. We generally think of keeping these natural elements away from our indoors, however in our proposition of Advancing Net Zero, we strategically tap into these resources to help reduce our consumption on energy. In addition, the site's proximity to the harbour, will allow us to further consider the use of it as a cool water source, again to reduce our demands on energy required for cooling.

The use of rainwater harvesting for irrigation of plants and gardens in our development is conventional. We also like to utilise the same harvested rainwater by distributing it to the facades via a ceramic pipework system acting as a microclimatic skin, allowing heat and sunlight to create a cooling vaporization from the water in the ceramic pipeworks to cover the façade zone. In doing this the façade is cooled passively and a reduction of up to 12 degrees celsius could be achieved on very hot days, hence making a positive impact to reducing heat island effect in its vicinity. Moreover, this veil of cool air creates a cooling buffer over the building, meaning that interior cooling loads can be reduced.

Further energy reduction are proposed, all of which relies much on the utilizing of natural resources to bring down cooling loads and creating wastage in the form of hot water that can be used as a supply source.

In our Advancing Net Zero Tower design, we also seek to use less carbon embodied material where it matters. By using less concrete, a high carbon embodied material, we consider replacing it in the superstructure with more efficient composite structural systems. Recycled steel will be used for the primary structure, whilst combining it with Mass timber for office floor slabs and secondary structure will give a much lighter building which in effect would mean utilizing less concrete by mass in the sub-structure.

The use of agile and flexible materials that can be recycled and reused is encouraged in our proposal. The circular economy shall be championed by Swire Properties, where tenants are encouraged lease interior fit-out systems, that would be returned to a pool for re-deployment at the end of the tenancy, rather than seeing the end of their life-cycle.