

towns are designed with a density of 2,000 to 2,500 inhabitants per hectare. If there is a Nobel Prize for the most efficient and effective use of land resources, Hong Kong will win hands down. Apartment blocks some 100 metres high are packed so closely together that the distance between them is a meagre 40 metres. To ensure that no valuable land is wasted, each block is built on top of a multistorey podium which houses all the amenities required to support the community. To service the towns, mass-transit railways are being built, cutting estates into manageable plots. Any land that is left over will be given to charitable organisations for school buildings and community centres. The crumbs will be collectively known as parks and leisure grounds. Hong Kong is a vision that all the world will need to share within a generation.

**Verbena Heights, Tseung Kwan O**

One of the many new towns that are taking shape is Tseung Kwan O on the east side of the old Kowloon peninsula. Part of the town was a landfill site until 18 years ago when massive land reclamation took place. Today Tseung Kwan O is thriving, with 250,000 inhabitants living in an area just under 600 hectares. In two years' time the mass-transit line will be completed and the town will continue to grow until the population reaches 500,000 to 600,000.

Situated at the heart of the town centre is the award-winning Verbena Heights designed by Anthony Ng. The development is reputed to be the first high-density housing in Hong Kong that took green and environmental issue seriously from day one. The architect states that:

The project represents an attempt to address environmental design concerns (energy minimisation, resources efficiency, water conservation, occupancy health and comfort) appropriate to the subtropical climate whilst

providing a high-density, high-rise housing design integrating with identity and delight for residents. Instead of the prevalent cruciform plan commonly adopted elsewhere in Hong Kong, an alternative thin linear layout is developed for the residential floors.

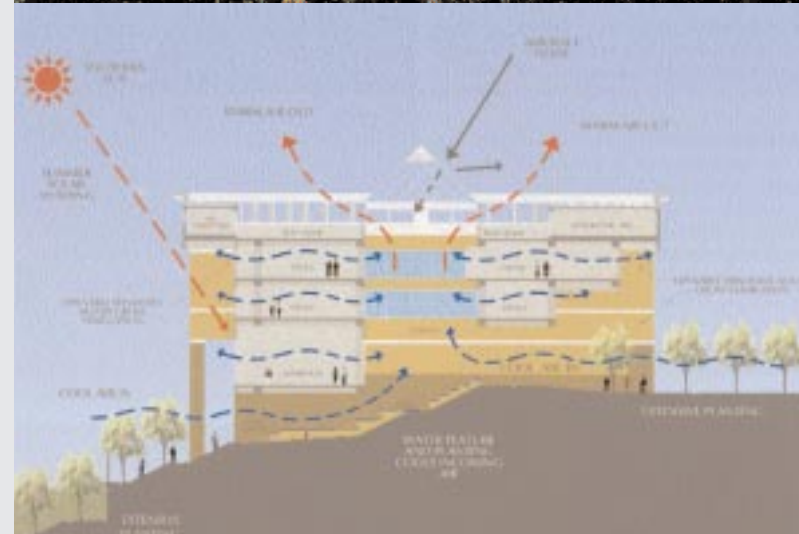
The linear blocks are planned around three elevated landscaped courtyards. Extensive wind-tunnel tests were conducted to maximise natural and cross ventilation at the ground and upper levels. The building height steps down towards the direction of the prevalent summer breeze. Multistorey mid-air balconies were devised to enhance wind permeability of the building mass. As a result, drastic improvements in air movement in and around the site have been achieved. So much so that windbreaks and canopies have to be employed at strategic positions to the wind climate at pedestrian level.

Solar and daylight studies went hand in hand with ventilation studies. External screens and light shelves were employed to provide effective shading as well as to enhance daylight in interior spaces. Vertical shading devices were preferred as they are less problematic in terms of maintenance and hygiene in high-rise living conditions. Low embodied energy and longer lasting and recycled materials were specified, and construction wastes were reduced by using reusable formworks.

The development is provided with a wide spectrum of community facilities at the ground and podium levels. Landscaped and covered walkways connect the blocks to each other, to other nodal points and to the nearby public transport interchange. The careful consideration of human scale, and spaces distributed at 'walking' intervals, ensures that it remains a pedestrian environment.

**Hollywood Terrace, Western District**

Whilst Verbena Heights consciously addressed the issue of environmentally-friendly design, another example of urban high-density housing, by Rocco Yim, approached the notion of sustainability more subtly. Hollywood



Top  
Simon Kwan & Associates,  
Jockey Club Environmental  
Building, Kowloon Tong, 1996.  
This view looks towards the  
main entrance of the building.

Bottom  
Drawing illustrating the  
concepts behind the  
environmental provisions  
in the Jockey Club  
Environmental Building.

Terrace is located at the heart of an old and established district in urban Hong Kong. The challenge was to respect, 'sustain' and complement the existing urban pattern of open space and traffic and circulation systems. Nesting through the development is a series of public landscaped terraces. Lifts and stairs form part of an elaborate and efficient route that links the two plateaus of the sloping site and allows 24-hour pedestrian access through it. The journey is a pleasant and surprising one, almost like an oasis and a maze combined. Environmental comfort has not been neglected. The apartments are configured so that they all face predominantly north and south – despite a very difficult site. Overlooking between apartments is effectively avoided, so occupants have the option of pulling back blinds for daylight. And, despite the small unit size, most living areas are capable of being cross-ventilated.

Both Verbena Heights and Hollywood Terrace were designed for the Hong Kong Housing Society – a provider of cheap and affordable housing. Little advanced technology or gadgets are employed but identity and dignity are provided through sustainable design.

Above: left to right  
Rocco Yim, View of Hollywood  
Terrace from Queen's Road  
Central.

Hollywood Terrace, Western  
District, 1998.

Plans highlighting the  
concepts behind the spatial  
layout (top), circulation  
(middle) and environmental  
provisions (bottom) of  
Hollywood Terrace.