

# Vertical Cities Asia

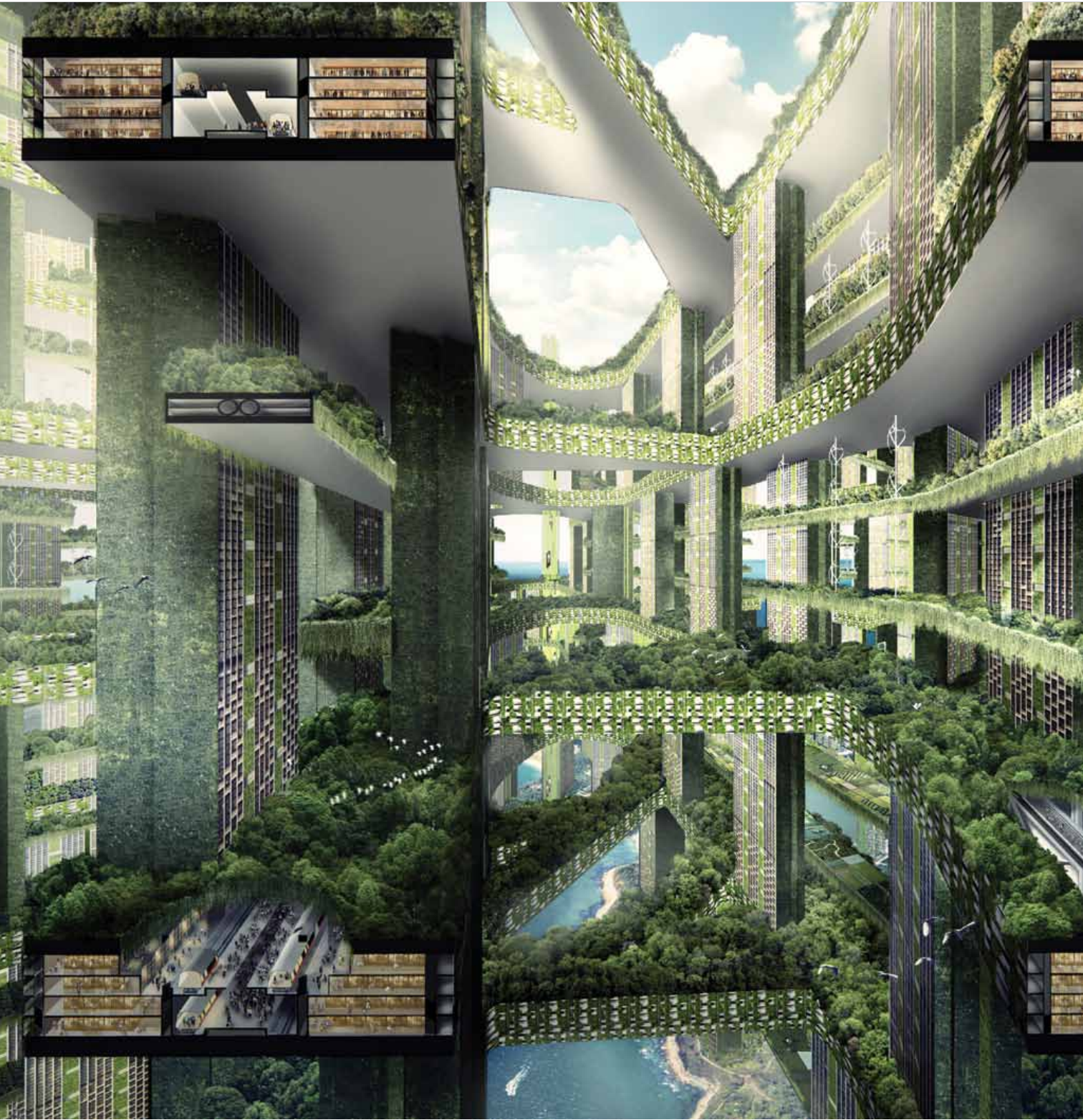
- **City Within a City:** Beyond form or technology, there should be innovation in the range of amenities. High density, as well as open-air living areas, sky gardens and communal terraces can make high-rises the vertical equivalents of cities.
- **Structure & Future Proofing:** A tall building could be considered a number of stacked communities, within a framework of structure, systems and aesthetics. The design and infrastructure must allow multiple configurations or additions over time.
- **Club Sandwich Approach:** Land use intensification via stacking of diverse functions enables smaller building footprints, opens ground levels for activity-generators, and maximises areas for facilities.
- **Multiple Ground Levels:** Facilities on the ground plane – like parks, streets, and other civic functions – must be replicated in the sky. The ground plane is an essential layer of the city which needs to be replicated strategically at high floors across buildings.
- **Tropical/Perforated City:** To achieve comfort without mechanical systems, high-rises can be perforated with open spaces to bring fresh air and nature into dense mega-cities, and enable quality living in an imaginative and sustainable way.
- **Breezeway Atriums:** Large elements like roof top stadiums can form umbrellas that float over the ground level, creating comfortable and delightful areas beneath for activities. Towers may be orientated to funnel prevailing winds.
- **Natural Daylight:** The proportion of high-rises must allow daylight to reach all areas. Plazas, concourses and sky terraces should ensure no dark spots in the building. Light wells/scopes can strategically bring natural daylight into central areas.
- **Greenery:** Green living walls act as environmental filters, screening off noise, glare, dust and heat, concealing services, and adding visual interest. Landscaping provides end-user enjoyment, with homes having their own little garden plots in the air.
- **Humanistic Approach:** More recreational spaces can improve economic returns, and people's well-being and productivity. Shared spaces can nurture a sense of community. Flexible floor plans or customisable façades can enable individual expression.
- **Streets/Parks/Villages in the Sky:** To address high-rise alienation, design community and social spaces in the sky. Intersperse these shared areas throughout the towers to create comfortably scaled public spaces in the sky.



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ingapore architecture firm **WOHA** participated in the Vertical Cities Asia programme organised by the National University of Singapore in 2011, where it contributed a paper outlining its approach to high-rise, high-density tropical living. Developed by WOHA Directors Wong Mun Summ and Richard Hassell and Architect Alina Yeo, this paper is summarised here. These ideas are also seen in WOHA's vision of a 'Permeable Lattice City'.







### Permeable Lattice City

WOHA Director Wong Mun Summ was part of the Vertical Cities Asia design competition jury. The competition brief required housing 100,000 people on a one-square-kilometre site. Without submitting a competition proposal, WOHA still took the opportunity to compare densities in different cities and buildings before producing these two images of a 'Permeable Lattice City' – its vision of an extraordinarily dense and high-rise tropical Asian city that is liveable and sustainable.

WOHA found that 100,000 people could be accommodated over four one-square-kilometre stacks of Manhattan or Hong Kong's Central district, or nine such stacks of Singapore's city centre. They could also be housed in 67 of WOHA's 'The Met' condominium in Bangkok (photo above), stacked over three tiers. Based on these findings, WOHA envisioned a 'Permeable Lattice City' with a density of 111,111 people per square kilometre.



Here, modules of The Met become 'City Columns', staggered for high porosity. City-scale cross-ventilated breezeways allow fresh air and daylight to reach every part of the inner city. 'City Columns' also free the ground for nature and heavy industries. Columns are linked by a 'City Conduit' network that serves as elevated ground levels. They are vertically interconnected by multi-cabin lifts and people mover systems, and woven socially by 'City Community Spaces'. This fully pedestrianised city negates cars above the ground level, and encourages a highly sustainable and liveable vertical city.