

Sustainable living takes to the skies

Despite spending the last 15 years of my working life living in London, Amsterdam, Brussels and Manama – cities that could hardly compare to the high-rise nature of Singapore – the concept of high-rise living, working and playing are ideas that I am all too familiar with academically and professionally in the pursuit of a “vertical urbanism” for the 21st century. Relocating in 2008 to establish a design studio in Singapore provided a perfect platform to apply both design and research in a city state that is increasingly being heralded as a model vertical garden city.

Singapore has witnessed rapid urbanisation and densification in the past few decades – a trend set to continue with predicted population growth from 5 million people now to 6 million by 2020. But urbanisation in its traditional sense – horizontally over land – cannot be indefinite due to acute space constraints. This has pushed development skywards, with more high-rise buildings and structures constructed since post-colonial times. Much of the centrally located low-rise shophouses were eradicated to make way for a “city of towers” for international institutions, and with the outlying villages being cleared to make way for public housing.

With increased urbanisation, it is inevitable that many public spaces where individuals would rest, relax or socially interact would be incrementally removed. The creation of social spaces have sought to replenish such a loss, and span a spectrum of environments ranging from the hotel lobby and the retail mall (which have proven to be also popular social environments for transient, international groups of expatriates and tourists to interact within its air-conditioned confines) to the void decks beneath public housing (or what is colloquially known as HDB) blocks, which offer a setting for social interaction among Singaporeans.

Socialise mid-air

Recognising the effect rapid urbanisation has on open spaces, the Singapore government has advocated above ground-level social spaces within tall buildings, allowing us to see the traditional void deck being vertically extrapolated to form mid-air or rooftop social spaces – in the form of sky courts and sky gardens.

The incorporation of such alternative social spaces in the sky can be seen in younger housing estates like Sengkang and Punggol, where sky courts and sky gardens decked in verdant tropical greenery dot the roof of multi-storey carparks and apartments and provide perfect settings for gatherings or an individual’s rest and recuperation. Away from the heartland, they can also be found in landmark structures like Marina Bay Sands. Spatially, these sky-rise places are meant to complement the existing ground and subterranean network of streets, squares, void decks and the integrated retail mall and MRT concourse, whilst socially providing greater opportunities for social interaction and the ability to foster a sense of community.

Such alternative social spaces in the sky are not solely confined to Singapore, but have also been incorporated to new hybrid buildings worldwide by firms like Moshe Safdie, Llewelyn Davies and Yeang, Steven Holl, and KPF. We are part of this burgeoning scene, and have designed and researched over 150 examples of skycourts and skygardens that will be documented in a book due for publication next year.

Hanging gardens

From the Marina Bay Sands Skypark to the Sengkang/Punggol rooftop skycourts and skygardens, these skyward social spaces have also helped define Singapore as a Garden City, as they are often densely foliated. This has come as a welcomed addition to our urban habitat, particularly as increased urbanisation has led to the consequent rise in urban



temperatures, and vegetation is surrendered to concrete. The negative impacts brought about by this include increased health risks through higher ambient temperatures, aggravated atmospheric pollution, more emissions of ozone gases and increased energy consumption for cooling – around 5% for every 1 degree of temperature rise.

Hence, alternative means to green the urban habitat becomes key, and the skycourt and skygarden provides perfect settings for such to take place. Enhancing the diagonal and vertical “green” planes in addition to those on the horizontal ground, can help reduce storm rainwater run-off, reduce temperatures by as much as 5 degrees centigrade, remove noxious pollutants from the atmosphere and act as an acoustic buffer to noise. Landscaping has also been proven to enhance productivity in the workplace, and provide heightened recuperation times amongst trauma victims. It probably comes as little surprise that Singapore’s commitment to creating a vertical Garden City has seen the government implement guidelines for the incorporation of ‘Landscaping for Urban Spaces and High rises’ (LUSH), offering incentives for eco-friendly building practices, and organises industry conferences, like the Build Eco Xpo Asia, for which coincidentally I will be speaking at this year on such a topic.

Accessibility key

However, creating sustainable designs via vertical urbanism is not without its challenges. A fundamental component of sustainability is the social element which, alongside economic and environmental parameters, forms a sustainable consciousness. Simply put, the social efficiency of these alternative open spaces in the sky has yet to be fully tested for future success.

For instance, the Marina Bay Sands Skypark may prove successful given the throngs of tourists that pass through each day, but there are stringent restrictions on the use of the space — above and beyond the already restricted “public” spaces on the ground, which are increasingly privatised spaces controlled by corporations and thus not truly “public”. In this case, it is arguable that the freedom of passage, speech and action, and the ability to use the sky courts and sky gardens as one feels free to socialise in the street and square, has yet to be fully embraced.

Hopefully, the government will continue to find ways to make these spaces more habitable. After all, if anyone has the tenacity and single-mindedness to create a world-class city state in such a short period of time – and lead by example in creating a vertical Garden City – surely this would be Singapore?

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