



NEW GREEN HEIGHTS IN  
PUBLIC HOUSING DEVELOPMENT

# THE PINNACLE @DUXTON

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Photography by Adrian Koh/ milk photographie





Who has seen the wind?  
Neither your nor I;  
But when the trees bow down their heads  
The wind is passing by.

*from 'The Wind', by Christina Rossetti (1830-1894)*

Towering at 50 stories, but in actual fact even more as seven individual blocks of the Pinnacle@Duxton sit on an elevated parking deck, the Pinnacle@Duxton is likely the most strategically placed government housing development in the heart of Chinatown, Singapore. Its design was awarded to Singapore architecture firm, ARC Studio Architecture +Urbanism, following an intensive competition exercise in 2002. The Duxton Plain Public Housing International Architectural Design Competition set the challenge of replacing existing blocks of HDB (Housing Development Board) at the same location, whilst fitting in a new density three times that of the old, or in this case, one thousand eight hundred and forty eight household units, to be exact.

The Pinnacle@Duxton is complex in its simplicity—using an elevated environmental deck as an 'urban organiser', all movements across, within and above the site draws referential points and connections to this environmental deck. Here, the platform itself is a sculptured urban hill, that replaces the earlier surface car park typologies of HDB estates. Yet, it is not entirely deviant from old. Like before, where the open surface car parks allowed for greenery to exist and soften an otherwise hard and monotonous rhythm of cars and columns, this urban hill performs the same, and better, with the elimination of cars parked and the inclusion of communal spaces and activities.

With car park provisions allowed for in semi-basement conditions below the raised environmental deck, almost the entire footprint of the site is now open to sky and winds. Without adding stress to the environment, natural cross ventilation within the multi-levels of car park is encouraged via vertical airwells carved into the parking stack. These natural airwells allow light into the car park and, as they push through the environment deck, provide for purposeful elevated structures for timber pavilions dotted across the deck. With a raised building podium, the view from the street level remains ubiquitous and uninformative. This way, the common grouse of privacy issues, prevalent to first-storey occupants in a typical HDB flat, is succinctly answered and with head-on.

A strong suggestion of overlapping conditions and stratas begins to take form. Here is the complexity which was mentioned. The environmental deck weaves through the site like ribbons. It cuts through the spaces horizontally, as pathways and access to blocks, and in so doing, gently redistributes the high density of occupants that traverse the compound. Using gentle green slopes and incorporating access ramps that hug the varying levels, a vertical play of form then allows for unexpected changes in sightlines and frames. These vertical lulls and accents also make for successful suggestions of territorial private spaces, necessary



non-physical boundaries that are much needed in this otherwise completely public environmental deck. Like all HDB estates, the only true separation between public and private is really at the gate of one's own apartment.

As a result of its sloped elevation, the environmental deck is able to encourage and receive much desired winds. With the seven different blocks all slightly angled away from the harsh east-west facing, surprising eddies of wind are created. Through working closely with a softscape consultant, *Terminalia molinetti* trees were selected based on their natural ability to bend and bow in the force of winds. Interestingly, these trees are one of the most commonly specified in hurricane prone areas, like South China and Taiwan. With small petal-like leaves and a layered branch structure, the shimmering sound of movement and light is magically expressed and impressed. With the same concerns in designing the green sky bridges most iconic to this estate, similar choices of plants, like *Dalbergia longifolia*, were also thoughtfully specified. Where endowed with a light branch structure, continuous views are encouraged beyond the plants. Located on the 26th and 50th storeys as inter-connector belts between all the blocks, the sky bridges are attempts at infringing the hard matters of building with the light and natural precociousness of nature. Each pocket of garden in the sky bridge weaves a story with a thematic approach. In spite of their differing elements, they express the same emphasis and concerns of erasing the reality of density, against the maximisation of sky and space, again, through the mediation of levels and paths.

In the face of climate fears, Pinnacle@Duxton has re-written a page of public housing prototype. In wrestling with the hardened needs of human consumption—car park space, increasing waste disposal facilities, incessant demands on electric energy and immediate accessibility—the introduction of building platforms that accommodate those said functions, with nature as their main tenant, is warmly welcomed and to be embraced. Nature should continue to be the datum for design. This is a concept never foreign, as studied in the works of Frank Lloyd Wright and Tadao Ando, but its very interpretation and implementation remains varied and specific. The specificity lies in the context and its constraints and concerns. Sustainability is really not so modern an afterthought, after all.



“THE SKY BRIDGES ARE ATTEMPTS AT INFRINGING THE HARD MATTERS OF BUILDING WITH THE LIGHT AND NATURAL PRECOCIOUSNESS OF NATURE. EACH POCKET OF GARDEN IN THE SKY BRIDGE WEAVES A STORY WITH A THEMATIC APPROACH.”





“ LIKE BEFORE, WHERE THE OPEN SURFACE CAR PARKS ALLOWED FOR GREENERY TO EXIST AND SOFTEN AN OTHERWISE HARD AND MONOTONOUS RHYTHM OF CARS AND COLUMNS, THIS URBAN HILL PERFORMS THE SAME, AND BETTER, WITH THE ELIMINATION OF CARS PARKED AND THE INCLUSION OF COMMUNAL SPACES AND ACTIVITIES. ”



#### Project Credits

developer Housing & Development Board, Singapore  
 design architect ARC Studio Architecture + Urbanism, Singapore  
 landscape architect EnviroSpace Consultants Pte Ltd, Singapore  
 project architect RSP Architects Planners & Engineers (Pte) Ltd, Singapore  
 civil engineer Housing & Development Board, Singapore  
 structural engineer Surbana International Consultants Pte Ltd, Singapore  
 mechanical and electrical engineer Surbana International Consultants Pte Ltd, Singapore  
 project manager SIPM Consultants Pte Ltd, Singapore  
 cost consultant Surbana International Consultants Pte Ltd, Singapore  
 lighting consultant Lighting Planners Associates  
 main contractor Chip Eng Seng Contractors (1988) Pte Ltd, Singapore

#### Project Details

site area 25,172.100 m<sup>2</sup>  
 storey height 51st storey private viewing gallery, 50th storey for apartment units and public observatory level  
 total units 1848 (4-room and 5-room units)  
 commercial/ social community facilities 7 shops + 1 Convenience store, 1 food court, 2 Residential Committee Centres, 1 Education Centre, 1 Childcare Centre, Sky Gardens and Roof Terraces across the 7 blocks at 26th and 50th storey  
 other facilities 3rd storey and 50th storey Pavilions, Jogging track at 26th storey, Children's Play grounds/equipment at 3rd, 26th, 50th storey, Basketball Court, Multi-purpose area at 3rd storey, Elderly Fitness area at 26th storey, Drop-off porches, Vehicle-free Landscape Decks at 3rd storey  
 parking facilities Basement, 1st storey, 2nd storey  
 number of floors 51 (above ground)  
 number of floors below ground floor 1 (below ground)