Ingenhoven Architects' Marina One mixed-use development in Singapore achieves a remarkable intensity of use and form, writes Jeremy Melvin.
(Previous page) a view into the green heart, residential towards the top of the image, offices towards the bottom (Opposite from top) Marina One is part of Singapore’s emerging CBD; the office buildings soar above their residential counterparts; the area is a scene of intense development; external shades minimise direct sunlight penetration and echo the curving coastline – Gardens by the Bay is visible just in front of Marina Bay.
I f we are going to tame and transform the unholy but visceral contemporary political trinity of neoliberalism, retro-socialism and popular nationalism into a possible frame for future existence, Singapore is a good place to gaze into the proverbial crystal ball. Its politics have a touch of each of the above without succumbing to their worst excesses and, for an island that would quite quickly revert to humid, tropical jungle if humans ever left, its built environment is becoming more intriguing as its long-term planning strategies unfold. And these strategies are a harbinger of the intensity that will increasingly define urban life, as they are geared to accommodating six million people in an island – albeit expanding through land reclamation – of about the same size as the Isle of Wight off England’s south coast.

Marina One, a competition-winning 400,000m² mixed development, designed by Ingenhoven Architects with Gustafson Porter + Bowman subsequently appointed for landscape, shows a particularly intense engagement with these issues. A member of the small but growing club of £1bn buildings (1.8bn Singapore dollars is the quietly acknowledged figure), it has more than 200,000m² of office space (more than half the first phase of Canary Wharf), 1,042 apartments (two more than Ole Scheeren’s celebrated Interlace, which has a larger site and is purely residential), 110,000m² of podium-based retail and a pair of signature restaurants. It is designed for a total population (office workers and residents) of around 20,000 people across a 24-hour cycle. This is a scale rare in Europe but fairly common in Asia, Christoph Ingenhoven points out, and this gives it an intensity which his design understands, reinforces and turns into a possible vision for future urbanism.

Its intensity is remarkable because it started with what appears to be as close to a blank canvas as an architectural project can get. On a site reclaimed from the sea between Marina Bay and the main port, now scheduled for redevelopment once shipping has been safely relocated to the west, the plot itself is a more or less level piece of ground 225m square (about five hectares). Its nearest neighbours include a Toyo Ito–designed tower distinguished by a translucent glass outer skin and a giant pineapple growing from its core, a facade of balconies to a Ben van Berkel housing scheme, and some crude extrusions which might have originated as quite smart KPF diagrams. But its immediately adjacent sites are still mainly undeveloped. One is likely to be left as open space, another will have an MTA station, while the others will be developed at a similar scale to Marina One.

This is the heart of Singapore’s emergent CBD, bigger, better and more suited to commerce in a digital age than the post-independence iteration with buildings by IM Pei, Paul Rudolph and Philip Johnson, and about as far from the original commercial hub of shophouses and wharfs along the river, where white men in white suits inspected their exotic wares before dispatching them to Europe for alienated profit. Singapore’s great achievement since independence in 1965 has been to plan for economic, physical and demographic growth, integrating these with raising standards of living, education and healthcare, and in so doing projecting a concept of intensity which individual designs, pineapples and all, bring into being. These mark an increasing recognition that quality of life includes quality of environment, visually, socially and sensorially.

So what might have seemed a blank canvas was in fact a cat’s cradle of planning and environmental regulations as well as a commercially focused brief. International politics also play a part, as the site is one of a pair which make up a complicated land swap with the Malaysian government whereby Singapore acquires the station and track of the railway to Kuala Lumpur, Malaysia owns 60 per cent of Marina One and Singapore the remainder, through their respective wealth funds Khazanah Nasional Bernard and Temasek, which created M+8 as the development vehicle.

At Marina One all these factors come together to indicate what a new form of urbanism could be. Sites of this size demand subdivision: vertically into a podium which may have several levels for car parking, retail or other activities that can use deep-plan space, and then spaces for living and working above, which are differentiated from each other by their position on the horizontal plane. Making these spaces suitable for their functions means pushing them as far apart as possible, to the corners of the site where they may be further differentiated by flamboyance of form or shoehorned into regular shapes, a parti which leaves a void at the centre. Scale, especially of the street facades, suggests breaking this into a cruciform with two cross-streets and so four possible entrances.
'Bringing together many people for numerous different purposes has myriad social and economic advantages over the old paradigm of zoned developments'
Such a generic typology can be found in almost any developing city across East Asia, especially those with plenty of fresh land unimpeded by the inconveniences of topography or historic settlement. Singaporean culture adds some twists of its own, an unrelenting combination of heat and humidity with little wind to provide relief. Local regulations prescribe a certain reaction to these climatic challenges, for example in imposing an increase in the already elevated "ground" level by 1m in anticipation of sea-level rise, and defining the criteria for the local Green Mark environmental accreditation system — in which Marina One rates as platinum.

As with so much else the Singaporean government plans, it sets a frame within which all endeavour has to fit. Olaf Kluge, the Singapore director of Ingenhoven Architects, explains that this puts more focus on achieving their targets for sustainability rather than innovation per se. But he acknowledges that the basic strategies, for thinking about transport, combining living and working into one location, are sound.

Climate also provokes personal reactions and Christoph Ingenhoven's is the seed that lifts Marina One above its obvious counterparts. "I prefer to be outside", he says, but admits to finding Singapore's heat and humidity uncomfortable. He saw how the commercial condition of a void at the centre of the site could be turned to advantage as a "green heart", a modified outdoor zone that would satisfy his desire to be outdoors but designed to induce comfortable conditions. This space would be well shaded by the buildings, while plants would add further levels of both perceptual and tangible comfort, minimising the "heat island" effect, providing extra shading, some dehumidification and the occasional pleasant aroma. There is also a cleverly conceived waterfall, where the liquid descends along thin fibres to fall almost silently into a pond, gently refracting light as it does so.

Ingenhoven's early sketch (the opening image) shows buildings surrounding 'squiggles' which encapsulated the idea and became a token of the primary concept without resolving how it might be achieved. It quickly progressed during the competition, where he saw off Foster + Partners among others. GPR's subsequent appointment as landscape architects, with Henry Steele of Singapore-based ICN (an expert on local plants), brought knowhow to the vision. Their input started to meet the regulatory requirement that any new development must replace at least the site's surface area with the same amount of greenery, albeit broken into different segments on various levels. Marina One achieves 125 per cent.

Many of the design moves follow from Ingenhoven's deceptively simple perception.
The four buildings expand towards the top, with the two office towers merging on their upper levels to make 10,000m² floorplates on levels 28 and 29. This shades the ‘heart’ without compromising its greenness as Steed explains, most of the plants need no more than a few hours of sunlight a day, preventing the building fabric from becoming too homogeneous and encouraging it to adopt a variegated form for sufficient solar penetration. It also takes advantage of the ‘vacant’ nature of the site. There is no natural ground level, or a context to generate one, so what might typically be ground-floor functions are spread over three levels, with the offices and apartments starting on level 4.

There are approximately 90 species of trees and 160 varieties of ground-level plants, spread around the numerous pockets of green. He delights in pointing out successes such as delicate pitcher plants (whose flowers are the shape of a pitcher), beginning to grow happily up an external lift shaft. He also acknowledges that planting is not an exact science and that some types, for no predictable reason, simply do not take to their new location, despite being nurtured in a regularly monitored nursery beforehand. Fortunately, the client recognised this and allocated a certain proportion of the budget to plants which could be changed at the landscape architect’s discretion.

Planting alone cannot turn a vast conglomeration of building into a comfortable place to live and work. After all, as Steed admits slightly ruefully but with discernible pride, plants account for no more than S$8.8 million of the budget. Facades address climate conditions and the shading devices need to work overtime to prevent direct sunlight, on this almost equatorial latitude, from penetrating the interiors.

For the residential buildings, balconies can naturally double up as solar shading as well as adding amenity to the individual apartments. The office buildings, with their floor-to-ceiling glazing, need their own uniquely purposed devices. On the outer facades, these follow the straight lines of the building perimeters, but where they face the ‘green heart’ they bend and flow, echoing their counterparts on the residential side to add a degree of organic form-making which complements the genuinely organic planting.

Looking down into the ‘green heart’ suggests an only slightly irregular order to the 35km of these shades, balconies and maintenance walkways. But the composition does not follow a simple formula, and although a parametric algorithm played its part in the design process, its prescriptions were, as Ingenhoven explains, tested and sometimes modified by intuitive human input. In this way, quite complicated demands for ‘city rooms’ – spaces usable for social purposes and restaurants, as well as the vast amounts of revenue-generating accommodation, could be met.

Inevitably, those spaces, whether offices or residential, are anti-climactic after the drama of the public zones. The offices have generous foyers and welcome amenities, such as a large auditorium and spaces that can be separated for private receptions, but their floorplates have to do what all speculative office buildings do – offer as great a degree of flexibility as possible within prescribed limits.

The residential units present an analogous challenge: they need to be ‘individual’ within what are believed to be the expectations of the market. Here the client stepped in, taking over from the architects and producing apartments aimed at those putative buyers. So rather than a single overarching architectural vision running the spectrum scale from urban impact to personal cocoon, there is a mildly jarring disconnect between the apartment interiors and the overall concept. Rooms feel too small and finishes too opulent for 100m² homes – albeit priced at several million Singapore dollars, at which level there is also an expectation for ‘wet kitchens’, an unfortunate euphemism for cramped maids’ bedrooms. The apartments do have enviable amenities, from ‘city rooms’ rentable for private functions to a swimming pool (though the portholes in its bottom may give swimmers something of the sense that Josephine Baker might have had if she had built the house Adolf Loos designed for her).

No doubt the economic model on which such a large investment is based – to say nothing of its implications for transnational politics – foresees a degree of stability both as to the nature of the home and the office. But within this building’s lifetime, digital technology may render fixed interior decor obsolete just as it may undermine the organisational model on which the concept of office depends. In this case, the rest of Marina One, with its proposition for public urban space in an intense, tropical location, will come into sharp focus.

It has much to offer. It recognises that bringing together many people for numerous different purposes has myriad social and economic advantages over the old paradigm of zoned developments: to lean on Jane Jacobs, this gives at least the opportunity if not the certainty of evolutionary innovation, where new industries, working practices and modes of living gradually replace obsolete predecessors. It shows how the formal demands of different functions can be fashioned to a complementary whole around a proposal for the public realm, and that by the imaginative use of different ‘ground’ levels their varying needs for privacy can be achieved. Above all, it bears out Ingenhoven’s belief that ‘architects can’t really generate authenticity, but they can create the long-term conditions for it’. 

(Above left) second level walkway, with waterfall in foreground looking towards apartments (Left) variegated plants and sunlight lend a unique intensity to the green heart (Above) exploded plans showing principal green areas: the lower public levels and the private roofs.
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Executive architect
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Structural and
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