



Marina Promenade

Connecting the Marina Bay Fabric

Text by urchin
Photography by Aaron Pocock

1. The Marina Promenade slows the pace by integrating large open spaces that also serve as public recreation and performance areas such as The Promontory @ Marina Bay in the foreground.

Essentially the district needed a solution that could bring the Marina to the rest of the city and its people to the Marina.

The explosive growth of Singapore's city core doubles in size with the completion of the planned development of the Marina Bay area. The further increase in the already high density of landmarks and "iconic" or heritage infrastructure evinced a clear need to establish harmony and physical dialogue between these disparate structures. Essentially the district needed a solution that could bring the Marina to the rest of the city and its people to the Marina.

As a result of winning an international design competition held in 2006, Cox Architecture, in joint venture with Architects 61 and Arup & Partners, led an international interdisciplinary team to create a conducive and conductive humanising intervention in the urban fabric. Built at a cost of 35 million dollars, the result is a 3.5-kilometre atmospheric and experiential walking path that forms a vital vascular system linking the area's urban points of focus, formally opened in 2010. These include the Gardens by the Bay, Marina Centre, Collyer Quay, Marina Barrage, Marina Bay Sands (MBS), Marina Bay Financial Centre, and the future Sports Hub.

By making transitional spaces more open and congenial for visitors and the public, the promenade acts as an antidote to Singapore's "air-conditioned nation" syndrome. The need to mitigate adverse tropical elements was approached as an opportunity for interdisciplinary experimentation.

The resulting bespoke thermoclimatic interventions throughout

the path are researched responses to the sparsely studied tropical context. These are successfully expressed as elegant public sculptures that perfuse the landscape. In fact, the widespread recognition of the promenade's aesthetic sensitivity prompted the establishment of the Youth Olympic Park, which functions as a prominent public platform for the exhibition of the nation's young artistic talent.

A 300-metre-long stainless steel pipe threads sinuously across a section known as the "Mist Walk", providing climate control and an immersive light and sound display. Its materiality and unique shape reinforces the promenade's biofuturistic vocabulary. Its light, dance-like quality of movement is frozen in space and time, suspended in the air with its kinks and loops.

Black, cuboid stone benches provide a well-executed and comprehensive contrast to the pipe's ethereal silver lining, in colour, weight, shape, height, materiality, and function. This effect is highlighted in the evening, when bands of orange light embedded in the benches illuminate them, referencing the city's late night streetscape. This warm glow meaningfully interacts with the Mist Walk's blue LED lighting to create a memorable and dynamic atmosphere.

Colourful water jets provide another instance of an interactive ambient cooling feature. To provide respite from the sun and rain, three breeze shelters bloom across the path. Each one has a massive disc-shaped canopy supported by a central column that is lined with

photovoltaic cells. The renewable energy powers a nine-metre-large, motion-activated ceiling fan.

The use of solar energy extends to the striking visitor's centre, which conveys its position as a point of convergence for the promenade through its acute angularity and intersecting lines. Its steel and glass box presents a transparent two-storey façade that is caged by a trigonometric steel mesh. The building serves not only as a landmark but also as an information, activity centre, and exhibition space.

The promenade extends to the foreshore on the side of MBS, connected by the Helix Bridge, aptly, to the doorstep of the ArtScience Museum. The bridge's exquisite lightness and dynamism counterbalance the concrete megascale that frames it, including the homogeneity of a tangential vehicular bridge. Its novel structural form was chosen to answer the brief's call for a unique shape that could convey Singapore's identity as a "connected city".

The bridge's familiar and potent DNA iconography, projects the city's current emphasis on developing a progressive and enterprising culture of research, design, and innovation. This biotechnological imagery is reinforced by lighting that represents each of DNA's four constituent proteins, which are embedded throughout the connecting struts or "base pairs" of the bridge and light up at night to emphasise the rhythmic interface of the two helix tubes.

The symbolism of connectivity extends beyond structural literality. By recalling the role of DNA as the code of all terrestrial life, and that of the genome as a repository of ancestral memory, the double helix reminds observers not only that our past and future are intertwined, but also of the harmonious efficiency in this complex web of interdependent relationships between us and the natural landscape that constitutes sustainable development.

Curiously, the bridge's double helix is not DNA. Its subversive chirality, which earned it a place in the 2010 Left-Handed DNA Hall of Fame, could be read as a public monument to science, a nod to synthetic biology, or maybe even as a form of geeky scientific-architectural humour; it is especially significant in the context of the country's self-perceived lateral-thinking deficit. It also exemplifies a genre of light-hearted topical architecture sorely wanting in Singapore's overly serious urban and cultural landscape.

The rotational geometry of the bridge allowed for highly efficient non-linear load bearing performance, consequently using only 20 percent of the steel that would have otherwise been required by a



2. A bird's eye view of the three breeze shelters.

3. The use of curves is a key factor in creating a compelling and heterogeneous landscape that bridges land and water, work and play.

4. The misting pipes in action on a hot day, providing relief to pedestrians by lowering the ambient temperature.



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conventional box-girder bridge design. This allowed the bridge to be built entirely out of stainless steel and reduced its embodied energy dramatically.

The visually striking geometry also effects a dynamic sense of movement that sweeps through and encapsulates the performative area of the bay. Additionally, it enabled the naturalistic integration of the required canopies, which provide shade and shelter, into the intermediate spaces between the helix tubes.

Unfortunately some have complained that the embedded glazed glass canopies, while beautiful, are extremely ineffective at both keeping out the rain and keeping the bridge cool. In response, developers and policy-makers could update their managerial patterns to engage user concerns like these earnestly and also encourage public tolerance of risk-taking in urban development by propagating awareness that such flaws are a hallmark of experimentation—which should be proliferated not avoided.

Looking to the future, to attain the type of ubiquity of a national urban icon, the virtual space of the internet should be leveraged. This should be done beyond the contrivance of social media updates, particularly through the pursuit of more symmetry, depth, and currency in the exchange of information.

The promenade's extensive use of passive environmental sensors inspires the possibility of data-sharing and an online virtual interface. These reference projects like Carlo Ratti's LIVE Singapore!, which proposed that such distributed real-time information could help a city's residents optimise their daily decisions and personal utility, and the 2010 Shanghai World Expo's online virtualisation of the pavilions, which eroded spatial and temporal barriers.


Providing the public with access to real-time environmental data is one simple, non-invasive, cost-efficient solution that addresses the need to productively, responsively, and sustainably include public opinion into public action. Researchers, hobbyists, and any interested parties could use these data sets to plan their day, and discover or produce solutions to problems they would otherwise have no other recourse than to complain. A sense of agency leading to a sense of ownership and belonging could be forged through this collective responsibility, skill sharing, and community action.

Free and open access to information is the bedrock of a knowledge-based economy and a crucial component of cybersecurity, through strategic resource distribution. Investigating the development of a public space's digital and virtual infrastructure is especially appropriate for the waterfront promenade, which is itself a self-reflexive exposition on the benefits of open access. Furthermore, it is geographically distant from the other urban nuclei in an increasingly polycentric city.

Openness aside, the project's key conceptual triumph is its emphasis on phenomenological, interactive, multi-user artefacts that expand its scope as a transitional or transportational conduit, by embedding sensorially rich and dynamic fields for the generation of socially adhesive collective experiences.

The disjunction between art and science within which architecture operates results partially from a conflict between the search for value in repeatability versus uniqueness. The Marina Promenade's distinct and contextual visual language presents an opportunity to demonstrate how these goals are not mutually exclusive. Like the flow of a stream of water from its source, its successful innovations and phenotypes should be replicated in other parts of the island. This would also make the promenade more functionally and formalistically recognisable and consequently endear it into the public.

The project provokes many interesting questions for public spaces that were beyond the scope of this essay—such as how to deal effectively with water runoff, quantitatively justify and control noise and light pollution, make it responsive, and to what extent embodied energy should determine a material's "renewability". These are issues that, much like the promenade itself, should welcome the avid participation of the public to meaningfully explore.

All things considered, the promenade sets an impressive precedent for the future of more experimental, research-oriented, open and accessible civic architecture in Singapore that responds directly to the bioclimatic and cultural contexts of the city rather than import pre-existing solutions. Hopefully, the seeds of progress it has sown will continue to grow and be allowed to flourish. 



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5. The misting pipe subtly traces the topography of the city skyline.

6. The breeze shelters magnify the familiar form of a flower on a stalk to convey a respect for nature that underlies the city's development.



7. The colours, textures, flora, and lighting result in a vibrant rhythm that formalistically and functionally provides the city core with maritime access.

8. The visitor's centre posed as an upward arrow that reflects the city's ambition and progressiveness.

9. As dusk falls on Marina Bay, the Mist Walk's blue glow brings the sky and the future almost within reach of pedestrians.

