

RECLAIMING GEORGE TOWN'S CIVIC CENTRE

The George Town Strategic Masterplan
and the North Seafront Transformation



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**PREFACE BY
YAB TUAN CHOW
KON YEOW,
CHIEF MINISTER
OF PENANG**

The regeneration of George Town's Civic Centre represents one of the most significant urban initiatives undertaken by the state in recent decades. It has been a collaborative effort across all levels of the Penang State, notably Chief Minister Incorporated and the Penang Island City Council, guided by a shared commitment to heritage, liveability, and environmental responsibility. The close partnership with the Aga Khan Trust for Culture (AKTC), which has provided expert advisory support throughout, and the wide-ranging consultation with community stakeholders have been central to this endeavour.

What sets this initiative apart is its innovative and integrated planning approach. Rather than relying on fragmented and uncoordinated piecemeal development, we have embraced a comprehensive vision that reconnects George Town to its layered past while preparing it to meet the challenges of the future. Attention has been placed on cultural continuity, spatial coherence, and environmental sustainability—principles that underlie the George Town Strategic Master Plan and its detailed Framework Area Plans.

At the heart of this work lies a deep respect for the city's heritage and its "spirit of place." The projects illustrated in this publication—ranging from the reconstruction of the seawall and moat at Fort Cornwallis to the restoration of civic gardens and promenades—are not only about physical renewal. They are about re-establishing the cultural identity and civic pride of Penang's capital in ways that also align with the Sustainable Development Goals and climate resilience imperatives.

These public realm improvements are helping to restore the integrity of George Town's historic centre, strengthen community ties, and reaffirm Penang's status as a destination of choice for visitors from the region and beyond. More importantly, they are renewing the city's sense of self for the benefit of all who call it home.

I commend the team that has made this vision a reality and present this publication as a testament to what is possible when heritage, planning, and public engagement come together in a unified and forward-looking vision of George Town's Civic Centre.



GT CDC signing ceremony in 2019. A partnership between CMI and Think City, with AKTC as technical advisor.

1. RECLAIMING GEORGE TOWN'S CIVIC CENTRE

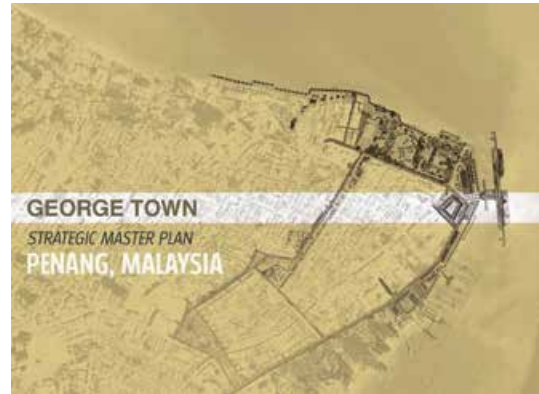
The historic city of George Town, with its layered history and vibrant multicultural life, is a place where past and present meet in intricate and surprising ways. Located on the island of Penang in northern Malaysia, it was recognised as a UNESCO World Heritage Site in 2008 for its architectural and cultural diversity. For the past decades, the city has faced the challenge of balancing heritage conservation with the demands of modern urban life and environmental change.

In 2014, CMI, Think City and the AKTC established a partnership to address these challenges by enhancing the quality of the city's historic assets. GT CDC was established to formalise the collaboration and tasked with spearheading the conservation of heritage monuments and landscapes in partnership with the MBPP and other relevant agencies.

An early initiative of the GT CDC was the development of the George Town Strategic Master Plan to guide long-term conservation, community renewal, and city-building efforts. It recognises that heritage is not just about preserving buildings or monuments—it is about revitalising the spaces that shape civic identity and daily life. Alongside the George Town Strategic Master Plan, the city introduced a series of Framework Area Plans to bring focus and coordination to areas where physical decay, underuse, or loss of meaning had set in.



The signing of the Management Collaboration Agreement between AKTC and the Malaysian delegation in 2014, witnessed by former Penang Chief Minister YB Lim Guan Eng and His Highness the Aga Khan.



Cover of the George Town Strategic Master Plan of 2014.



Aerial view of George Town looking west with the east seafront and cruise ship terminal in the foreground.



The north waterfront and adjacent areas bear testimony to the traditional town plan of an East India Company Settlement; the Fort, the parade ground, the government house, and the church all clearly demonstrate the EIC plan—its values and influences.

The most emblematic example of this strategy in action is found in the North Seafront, where a series of high impact, carefully calibrated public projects have transformed a neglected waterfront into a vibrant civic promenade, cultural landscape, and ecological corridor.

Historically, the North Seafront precinct has played a central role in George Town's civic and ceremonial life. It is home to some of the city's most important public buildings, including the historic Fort Cornwallis, Town Hall, City Hall, and Dewan Sri Pinang, and forms the backdrop to key events, public gatherings, and performances. Its open spaces and layered heritage have long made it a stage where the city's diverse communities come together, expressing both shared memory and evolving identity. The physical proximity of colonial-era architecture, war memorials, and the Fort itself underscores the area's significance as a cultural anchor—connecting the city's maritime past with its present aspirations.



The North Seafront Master Plan.

As such, revitalising the North Seafront was not simply a matter of urban repair. It was a deliberate effort to reclaim George Town's principal cultural and civic arena—a space where history is experienced, public life is enacted, and the multicultural character of the city is most visible. The restored promenade, landscaped gardens, reinstated moat and interpretive initiatives at Fort Cornwallis have all contributed to re-establishing this area as the heart of the city's public culture. It is now a place where residents gather, traditions are celebrated, and the narrative of George Town is shared with new generations and visitors alike.

2. THE GEORGE TOWN STRATEGIC MASTER PLAN AND FRAMEWORK AREA PLANS

At its core, the George Town Strategic Master Plan presents a unified vision for conservation-led regeneration. It puts forward a General Planning Framework, which defines broad strategies for land use, development control, heritage protection, and the improvement of public space. It also recognises the need for more detailed, localised interventions—delivered through Framework Area Plans—to address the city’s most complex and vulnerable zones.

The plan is grounded in four main principles:

1. **A new regulatory framework** aligned to World Heritage Site requirements, integrating conservation with development rather than treating these as opposing forces.
2. **Integrated planning proposals** for key urban areas, encouraging private–public partnerships and a vision of heritage as opportunity.
3. **Institutional reform** to improve governance, coordination, and technical capacity for managing heritage areas.
4. **Active community involvement**, ensuring that local voices shape regeneration efforts and heritage is understood as a shared civic resource.

This framework allows George Town to move from policy to practice—to test ideas, engage communities, and build confidence in public space as a vital element of city life.

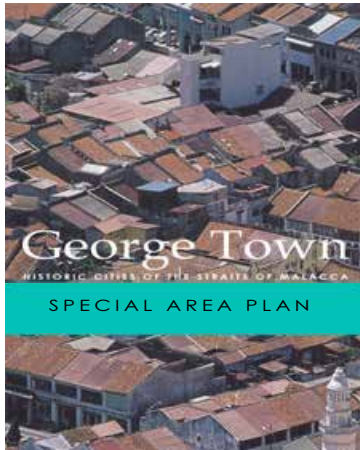


Fort Cornwallis and the adjacent Esplanade from the George Town Strategic Master Plan of 2014.



Concept Plan for the North Seafront and Central Area from the Strategic Master Plan.





The George Town Special Area Plan approved in 2016.



The Special Area Plan Public Realm Addendum gazetted in 2018.

While the George Town Strategic Master Plan sets out broad conservation policies, these alone are insufficient to address the specific needs of local precincts. The Framework Area Plans were developed to respond to this challenge by focusing on selected areas requiring detailed planning, careful analysis of current conditions, and realistic future options. Their success depends not only on sound planning but also on public support, political will, and a mix of public and private investment.

When incorporated into the statutory Public Realm Addendum to the Special Area Plan, the Framework Area Plans played a pivotal role in translating strategic goals into place-based visions and action plans. These plans articulated each area's potential and envisioned how it might contribute to George Town's future. Some proposals have already been implemented, while others remain in progress or under development. Importantly, demonstration projects—particularly at the North Seafront—have shown how conservation can enhance both heritage values and contemporary use.

Two priority zones were selected for early action: the North Seafront, centred on the Esplanade and civic buildings, and the East Seafront, once the commercial heart of the port. Revitalising the North Seafront as George Town's primary civic centre restored spatial coherence and



Aerial image of East Seafront.

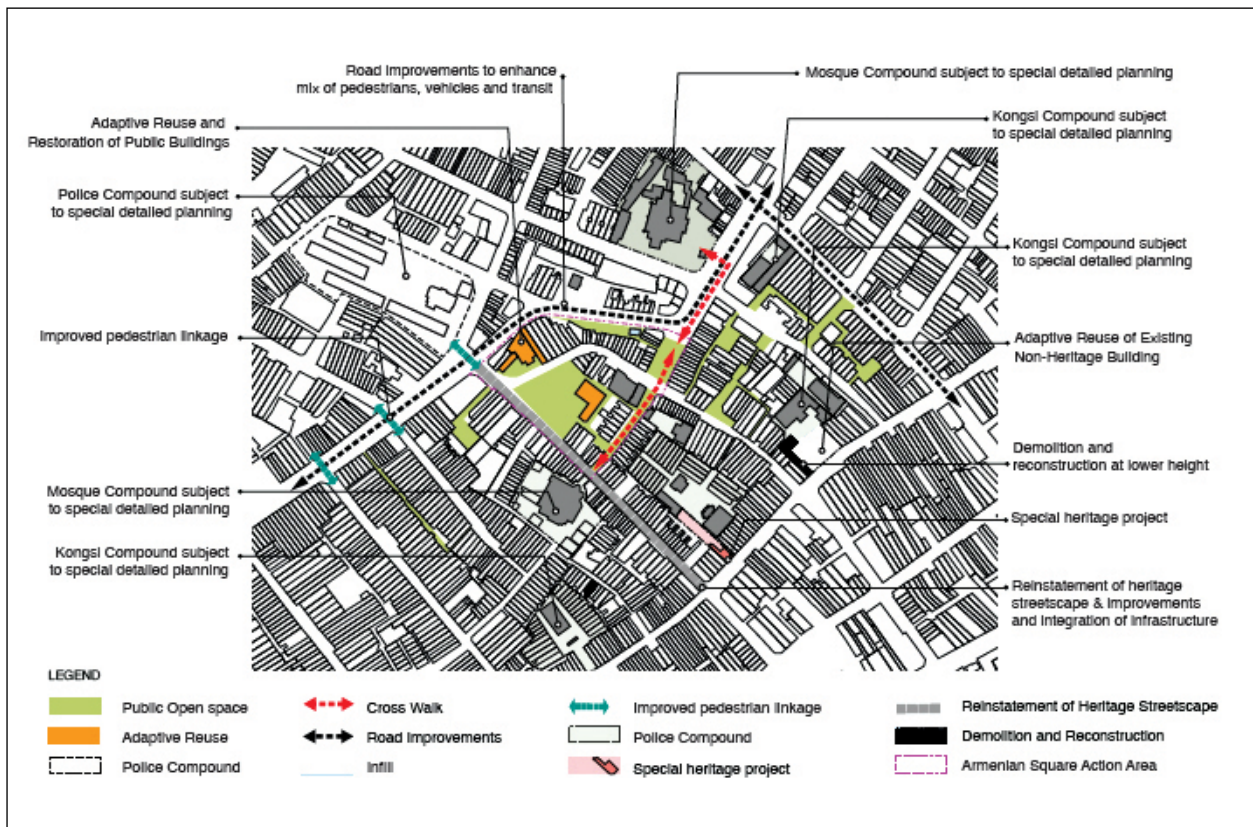
countered fragmentation caused by modern growth. In contrast, the East Seafront had suffered from disuse following the harbour's partial decommissioning. Plans here focused on reconnecting the city to the waterfront through new public spaces, adaptive reuse of port warehouses, and visitor amenities near the cruise terminal.

Elsewhere, the Framework Area Plan for Jalan Masjid Kapitan Keling, also known as the Street of Harmony, proposed redesigning this wide thoroughfare to prioritise pedestrian access and reinstate its role as a vibrant public corridor linking the North Seafront to George Town's historic core.

Three additional frameworks targeted dense 19th-century neighbourhoods shaped by migration: the Trade Zone, Little India, and the Lebuah Armenian/Lebuh Aceh enclave. These areas—rich in cultural assets but



Harmony Street Improvement Programme (Strategic Master Plan, 2014).



Lebuh Armenian/Lebuh Acheh Neighbourhood – Summary of Intervention Criteria.

largely in private hands—required different strategies, including housing upgrades, infill development, and small-scale improvements to streets and backlanes. A successful pilot, Lebuh Armenian/Lebuh Acheh Park, created in 2016, demonstrated how even modest interventions could catalyse local pride and reinvestment.



Upgraded Lebuh Armenian/Lebuh Acheh Park.

Finally, early proposals addressed the Clan Jetties, focusing on preserving their unique heritage through improved infrastructure, water quality, and housing rehabilitation, ensuring their survival as part of George Town's living cultural landscape.



Concept Plan for the Clan Jetties (Strategic Master Plan).



General view of the upgraded North Seafront.

3. REPURPOSING THE NORTH SEAFRONT AS A CIVIC AND COMMUNITY SPACE

As noted above, the North Seafront—stretching from Dewan Sri Pinang to Swettenham Pier—has always been a symbolic and physical gateway to George Town. Once a site of fortification, colonial governance, public gathering, and sea-based trade, by the early 21st century the area had fallen into functional and visual disrepair. Roads bisected spaces, the seawall crumbled, the Fort was isolated and green areas were degraded or lost.

The transformation of the North Seafront has reversed this decline. It has restored connections between land and sea, revived the meanings embedded in historic places, and reimagined the waterfront as a place for gathering, reflection, and play. It includes:

- The improvement of **Padang subsoil and drainage system**
- The reconstruction of the **seawall and public promenade**
- The creation of the **Linear Garden**
- The **reinstatement of the moat** at Fort Cornwallis
- New **museum installations** at the fort
- The restoration of the **Fountain Garden**
- The enhancement of the **Lebuh Light Promenade**

Together, these projects represent a new chapter in George Town's history—where civic space, heritage, and sustainability work in unison.

3.1 Improving Drainage at the Esplanade: A Foundational Project for GTCDC

The 2016 drainage improvement project at the George Town Esplanade—commonly known as the Padang—marked a turning point in public space enhancement for the historic core of Penang. As the first physical intervention undertaken by the GTCDC following its establishment through the AKTC–Think City partnership, the project demonstrated a commitment to pairing thoughtful planning with technically sound and contextually appropriate implementation.

The Padang, one of the city’s most iconic and intensively used public open spaces, had long suffered from chronic waterlogging, especially after heavy rain. These drainage issues were most evident in the northeast corner of the field, near a large permanent stage structure installed in the early 2000s. Ponding not only rendered the field unusable for days but also caused damage to the turf, leading to unsightly patches of bare or brown grass.

GTCDC, working with a civil engineering consultancy (Perunding YAA) and landscape designers (Permata Green), conducted a detailed site assessment in collaboration with the MBPP Engineering Department. This analysis revealed that the massive concrete stage was the primary cause of poor drainage. By compressing the soil beneath it—already composed largely of compacted marine clay—the stage acted as a barrier, impeding the natural flow of rainwater toward the sea.

In response, GTCDC developed an alternative proposal built around four interrelated interventions:

1. **Removal of the Permanent Stage:** The plan proposed demolishing the heavy concrete stage and replacing it with a portable, prefabricated unit that could be temporarily erected when needed. This would reopen the natural drainage paths and restore the soil’s permeability.
2. **Installation of Subsoil Drainage:** A secondary herringbone-pattern drainage system was introduced to ensure that rainwater infiltrating the surface would be efficiently channelled toward stormwater outlets. This built upon and corrected earlier drainage works, which had been compromised during the original stage installation.

3. **Redesign of Vehicular Access and Utilities:** To avoid heavy vehicles entering the lawn and further compacting the soil, temporary vehicular access points were limited to existing paved edges. New utility connection points were positioned to serve public events without encroaching on the turf.
4. **Improved Maintenance and Regulation:** Recognising that infrastructure alone would not solve the problem, GTCDC recommended new protocols for lawn care, including suitable grass species (cow grass, in lieu of Japanese turf), regular mowing, fertilising, and clear guidelines for permissible activities and event structures.

Importantly, the project was designed to align with the principles of the North Seafront Public Realm Plan and the Special Area Plan for the George Town World Heritage Site. It served not just to solve a localised problem, but to establish a broader model for resilient, low-impact interventions in public spaces within the heritage zone.

This modest yet highly strategic project set the tone for future GTCDC initiatives by demonstrating that careful diagnosis, inter-agency cooperation, and a concern for long-term viability can deliver results that respect both heritage values and contemporary urban needs.



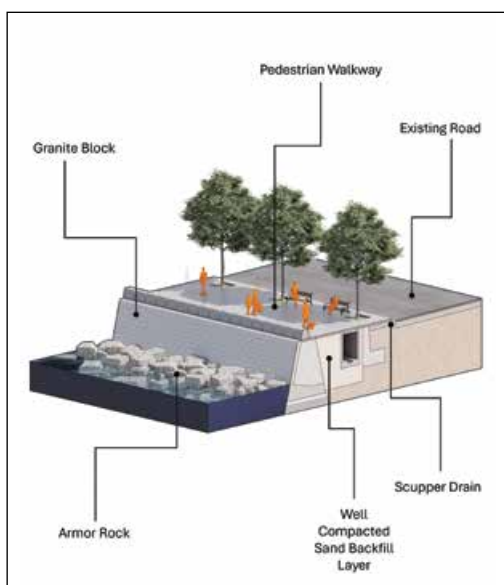
Padang Esplanade before and after.

3.2 The North Seawall and Public Promenade

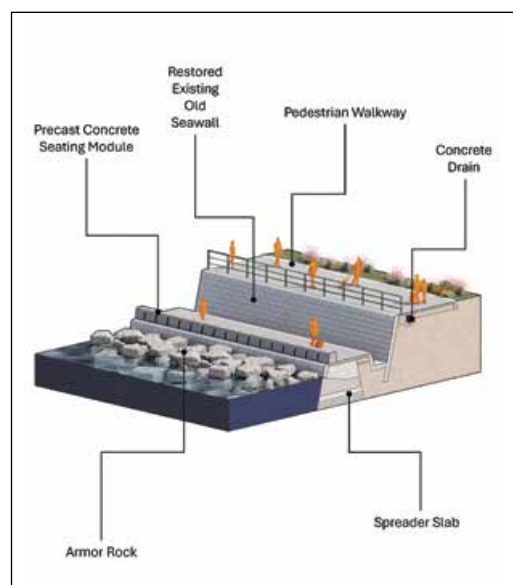
Once a deteriorating piece of coastal infrastructure, the Esplanade Seawall has been transformed into a place of encounter and renewal. Stretching 570 metres from the Royal Malaysian Navy base to the Medan Renong Food Court, the seawall was reconstructed using marine-grade concrete reinforced with steel, designed to resist tidal forces and projected sea-level rise. While the structure is entirely new, it carefully retains the form and alignment of the original wall, preserving George Town's historic shoreline and its visual connection to the sea.

Rather than relying on patchwork repairs which had become impractical due to the wall's poor condition, a decision was made to rebuild it entirely. A 2017 structural assessment revealed cavities, erosion, and collapse resulting from substandard materials, poor drainage, and prolonged neglect. The reconstruction followed best practices in engineering and heritage-sensitive design, resulting in a mass gravity seawall with a 1:4 inclined face—simple to maintain, structurally resilient, and compatible with World Heritage Site requirements.

The new wall was intentionally set parallel to the original alignment, preserving the distinctive shape of the coastline while creating space for a public promenade—generously proportioned, shaded, and fully accessible.



Schematic profile of typical seawall configuration.



Schematic profile of double level promenade with the restored portion of the old seawall.

3. REPURPOSING THE NORTH SEAFRONT AS A CIVIC AND COMMUNITY SPACE



Seawall and Public Seafront Promenade under construction.

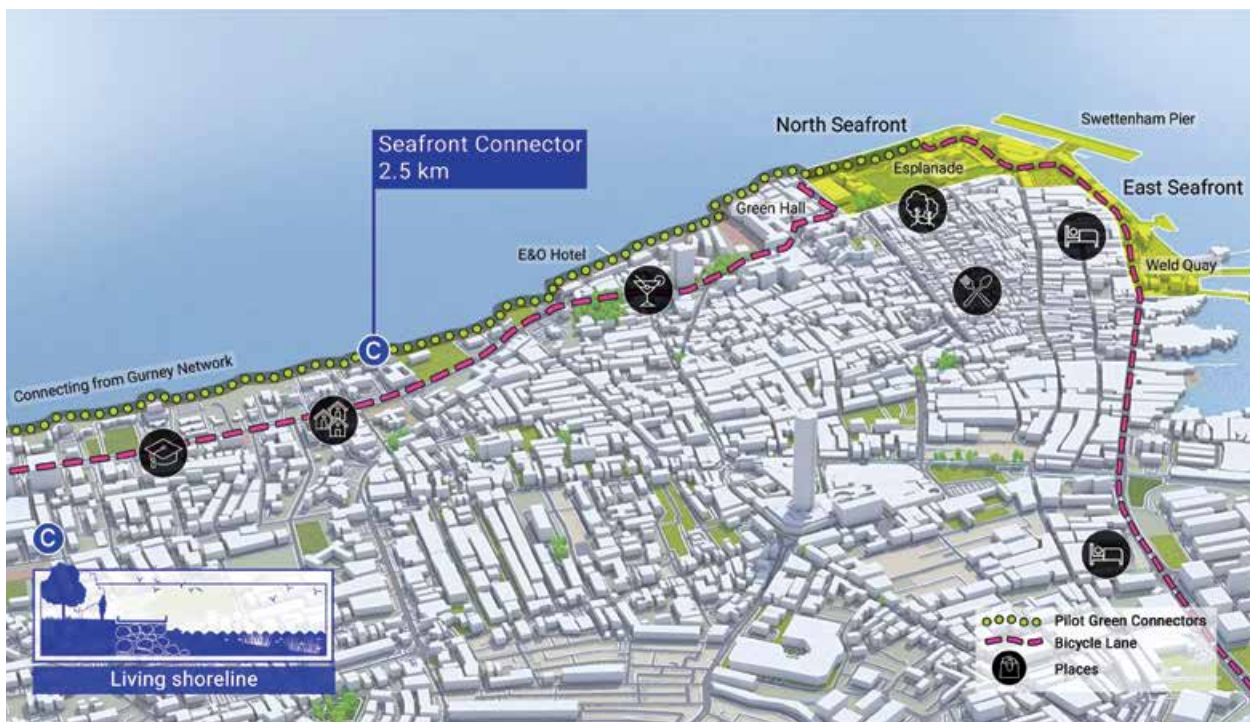


Completed Seawall and Public Promenade.

Features include terraced steps near the Cenotaph Memorial, allowing visitors to descend to the sea at low tide, as well as benches, interpretive signage, and ambient lighting that enhance comfort and atmosphere. A particularly distinctive feature is the low fronting wall, which ensures views of the water and continuity with the site's historic form.

This intervention, completed in 2022, was a core component of a broader revitalisation effort set out in the George Town Strategic Master Plan and Special Area Plan. Alongside the seawall reconstruction, related works included drainage upgrades, the restoration of the Fountain Garden, enhancement of Lebuh Light, and conservation of Fort Cornwallis. These interrelated improvements collectively reasserted the Esplanade's role as the city's principal civic and cultural space.

What began as an engineering necessity soon evolved into a placemaking initiative, guided by public feedback, heritage expertise, and integrated design thinking. The project was approached holistically, respecting the character of the North Seafront and responding to its historic, ceremonial, and recreational functions.



Planned coastal connector along George Town's eastern and northern seafront.



Residents gathering at the newly opened public promenade.

From a conservation perspective, the seawall exemplifies a sensitive synthesis of historical continuity and technical innovation. It demonstrates how modern materials and design standards can be applied in ways that reinforce, rather than compromise, the cultural significance of place. At the same time, it lays the foundation for future extensions, including a possible 2-kilometre continuation to Gurney Drive.

The Esplanade Seawall project also contributed valuable experience in the design of resilient waterfront public spaces—a pressing need in the face of climate change and rising sea levels, particularly within George Town World Heritage Site. By using locally sourced materials and techniques, the project supported environmental goals while showcasing the capabilities of regional craftsmanship and engineering.

Since its completion, the seawall and promenade have greatly increased public use of the area, enhanced recreational and economic opportunities, and raised awareness of the site's heritage and environmental importance. They have reaffirmed the Esplanade's identity as George Town's civic heart—a shared space for everyday enjoyment and historical reflection.



Completed Seawall and Public Promenade upgrading with the Cenotaph in the foreground and green expanse of the Esplanade behind.



3.3 The Linear Garden

Located between Lebu Duke and the Seawall Promenade, the Linear Garden adds a much-needed green corridor to George Town's civic district. Designed as a quiet retreat between the road and the coast, it strengthens the connection between Fort Cornwallis, the Padang, and the new seafront while offering a contemplative public space that supports biodiversity and commemorative use. The project was led by the GTCDC and completed in 2024, building on the promenade inaugurated two years earlier.

The Garden occupies a narrow strip of land previously underutilised. It now features two parallel walkways and several shorter cross-paths. A central circular seating area—marked with the UNESCO World Heritage Site emblem in stone—anchors the design. The site has been enhanced through the introduction of 60 new native trees, complementing existing mahogany and yellow flame trees and creating a shaded, inviting green space with direct views of the sea.

The Garden also reflects incremental and flexible planning and a future extension is planned to the west, on land currently occupied by the Medan Renong Food Court, which has been proposed to be relocated behind Dewan Sri Pinang. This approach allows the public realm to grow organically in response to evolving needs and opportunities. Already, the relocation of a small playground to a larger site near the moat has opened up space for planting and improved recreational facilities.

A central feature of the Linear Garden is the Cenotaph Memorial, which commemorates Allied soldiers who lost their lives during the First and Second World Wars. Originally completed in 1929 and partially rebuilt in 1948 after wartime damage, the memorial is modelled on Sir Edwin Lutyens's Cenotaph in London. It consists of a granite plinth, a tapered pylon, and an empty tomb set above receding steps, adorned with sculpted laurels and bronze plaques.

3. REPURPOSING THE NORTH SEAFRONT AS A CIVIC AND COMMUNITY SPACE



Completed Cenotaph.



UNESCO emblem located in the concourse area of the Linear Garden.



Aerial view of the Cenotaph and newly created Linear Garden.



Hand-carved granite blocks at the Cenotaph rotunda.



View of the Linear Garden's central walkway.



The expanse of the Linear Garden with the Cenotaph rotunda and the two-tiered seawall promenade below.

As part of the Garden's redesign, the Cenotaph's surroundings were fully re-landscaped. Previously enclosed and difficult to access, the monument is now open to the public, allowing close appreciation of its details and symbolic gravity. The Penang Veterans Association, which hosts annual Remembrance Day and Anzac Day ceremonies, was actively involved in shaping the space. Their input ensured that the monument's dignity was preserved and enhanced.

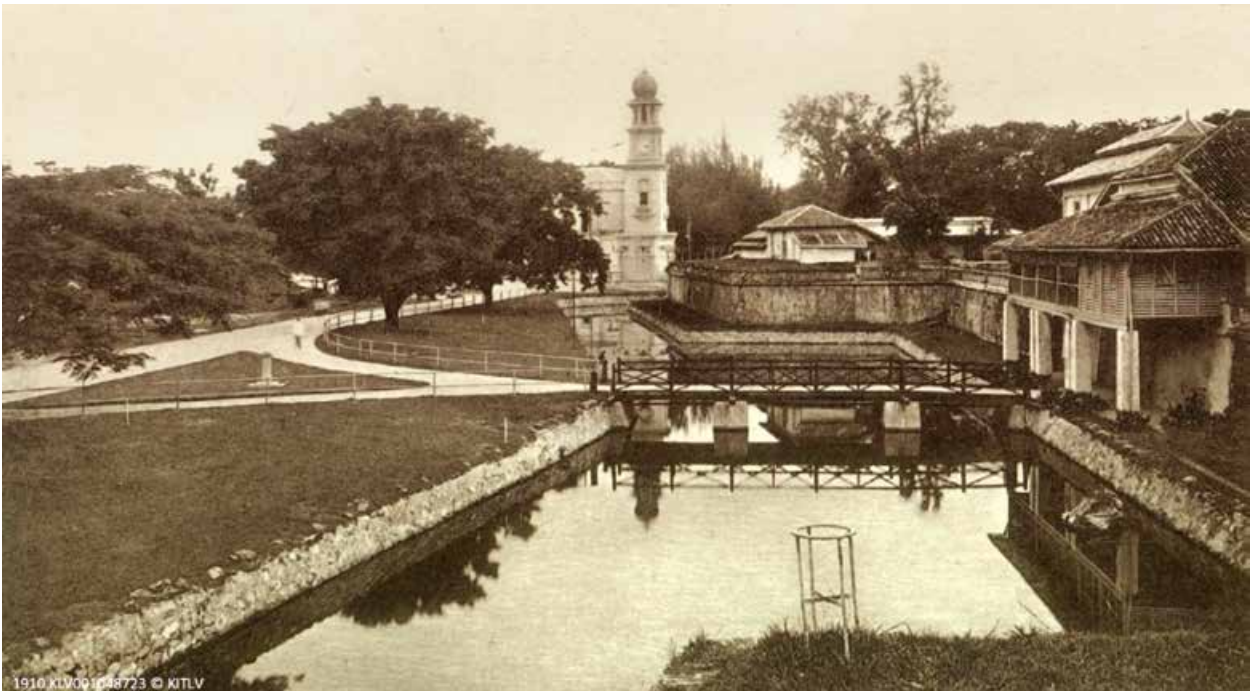
A new Veterans Memorial Wall, forming a circular frame around the Cenotaph, features re-inscribed names of the fallen on hand-carved granite blocks. This work was undertaken by one of Penang's last traditional tombstone engravers, underscoring the project's commitment to local craftsmanship and cultural continuity. By involving traditional artisans, the initiative supported the local economy while affirming the importance of intangible heritage in public realm design.

The Linear Garden also contributes to environmental resilience and social inclusion. Its layered planting scheme and tree canopy reduce urban heat and improve pedestrian comfort. Seating areas and open sightlines ensure safety and encourage use across age groups. With its combination of natural beauty, historical depth, and civic function, the Garden reflects George Town's wider strategy of conservation-led renewal.

As with other components of the North Seafont transformation, the Linear Garden illustrates how small-scale interventions can have far-reaching impact. By reconnecting underused land with the seafont and enhancing the dignity of the Cenotaph, the project reaffirms the value of public space in shaping collective memory and everyday urban life.



Sunset at the Cenotaph.



The east side of the moat in a late 19th c. photo.



The reinstated south and west sides of the moat.

3.4 The Reinstated Moat at Fort Cornwallis

Among the North Seafront projects, perhaps the most powerful symbol of the city's recovery is the wet moat surrounding Fort Cornwallis. Reconstructed between 2023 and 2025 after extensive archaeological work, the moat reclaims a forgotten defensive feature of George Town while offering contemporary environmental and civic benefits. It functions not only as a heritage reinstatement but as a form of climate-resilient infrastructure, capturing rainwater, improving site drainage, and supporting urban biodiversity.

The original moat, which ranged from 9 to 20 meters in width, was constructed between 1804 and 1810 as part of the Fort's defensive works, intended to protect against a possible French invasion during the Napoleonic Wars. Though the anticipated threat never materialised, the moat remained an integral part of the Fort's architectural and symbolic identity until it was filled in around 1921–1922, following a malaria outbreak. The decision to eliminate the water body for public health reasons had unintended consequences: the Padang area soon experienced periodic flooding, suggesting that the moat had also served a vital hydrological function as a catchment and drainage buffer for the surrounding low-lying terrain.

The exact manner in which the original moat was filled remains uncertain, but it likely relied on a combination of rainwater and brackish groundwater, with fluctuating levels tied to proximity to the sea. While much of the original structure was lost after infill, its shape and dimensions were clearly recorded in the Kelly Maps of George Town and in historic photographs. These records were substantiated by archaeological investigations, which confirmed the construction of stone containment walls capped with bricks, providing a solid foundation for the moat's reinstatement.

The idea of reintroducing the moat was first explored in early project planning. While a dry moat was considered—mainly for ease of maintenance—it was quickly dismissed. A dry moat would have failed to replicate the visual and environmental qualities of the original and would likely have become neglected or encroached upon. In George Town’s context, under-maintained urban voids often attract informal parking or ad hoc interventions, which would compromise the Fort’s setting. Moreover, reinstating a wet moat offered additional environmental benefits, such as heat island mitigation, improved drainage, and the creation of new green infrastructure in the heart of the city.



Detail of the Kelly map (1893) showing Fort Cornwallis surrounded by the moat along its four sides next to the central Esplanade.

THE MOAT'S CONSTRUCTION SYSTEM

The construction process began with the manual cleaning of the moat's boundary and glacis walls, carefully removing plant roots and debris, and storing the original bricks for reuse. Excavation commenced with a 1.5-meter-deep trench, taking care to avoid damaging the existing archaeological evidence. The trench was reinforced with bakau (a type of mangrove wood) piles to support the moat's boundary wall during subsequent excavation and dewatering. Deeper excavation to 2.3 meters below the datum level followed, with granite blocks inserted to reinforce the moat's foundation as the underlying sand was gradually removed. Damaged sections of the wall were then rebuilt from the foundation up, ensuring the structural integrity of the boundary walls.

The structural modules were crafted into quadrilateral shapes aligned with the moat's walls. Each module was designed to divide the moat into independent units, covering areas ranging from twenty to twenty-five square meters. Their foundations were established around the perimeter of the modules and filled with crush run to provide a stable underlayer. This underlayer supported stone blocks arranged in the shape of a rough cloister vault, effectively distributing the loads along

the modules' lateral walls. Upright pipes and release valves were installed at regular intervals to manage the water pressure exerted by the groundwater beneath the structure.

A first horizontal paving layer of granite stones bound with hydraulic mortar was then laid over the vaults in the moat basin. The external glacis wall, standing 2.4 meters high, was built from granite boulders over the foundation of the earlier structure, and a second paving layer added above the first to cover the base of the moat basin and glacis wall, ensuring a smooth, continuous surface. Finally, the moat boundary walls were capped with bricks, using recycled ones where possible, and plastered with six layers of lime mortar followed by a limewash after a 48-hour curing period. Similarly, various layers of lime mortar and a layer of recycled cooking oil from the nearby food court were applied to the base of the moat to prevent possible water loss.



Modular sub-base under construction (left) and layered paving of the water basin (right).



The modular construction system allows each structural component of the moat to function independently.



Completion of the pilot section of the moat in early 2023.

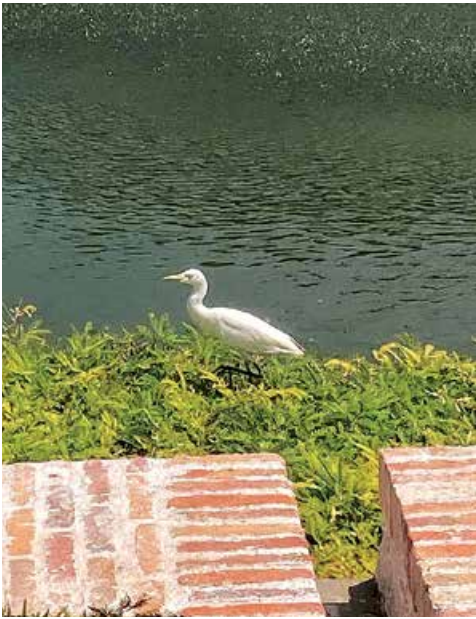


The hybrid filtration system makes use of aggregate filters inside the water basin and a plant-based bio-retention swale between the moat and the outer glacis.

To ensure authenticity and long-term sustainability, the south and west moats were reconstructed using a modular construction system, where each component was structurally independent and assembled on-site without the use of reinforced concrete (see page 33). Only materials consistent with the original—stone, brick, and hydraulic lime mortar—were used, faithfully reflecting the Fort’s 19th-century construction techniques. Numerous mock-ups and field trials helped refine the methods before full-scale implementation.

Water quality is maintained through a hybrid bio-filtration system, combining aggregate filters and bio-retention swales. The system is supported by low-energy pumps and aeration features such as fountains and nozzles that circulate and oxygenate the water. The moat is filled and replenished using natural groundwater, not potable supply, and monitored through a set of ecological indicators including dissolved oxygen, temperature, pH, phosphate, sulphate, and ammonia levels.

The biological diversity supported by the new moat is already significant. The introduction of native aquatic plants has created a healthy habitat for insects such as dragonflies, water striders, spiders, and butterflies—which in turn attract birds, amphibians, and reptiles. Even wetland species not commonly seen in urban areas have begun to reappear. The ecosystem is kept in balance through natural pest control, including the use of insect-repelling plants and the presence of bats and dragonflies to control mosquito populations. Continuous aeration and water circulation further discourage mosquito breeding.



Biodiversity and cooling effects at the moat mitigate urban heat through natural shading, vegetation, and water retention.



The restored south and west moats and inner courtyard of the fort.

3. REPURPOSING THE NORTH SEAFRONT AS A CIVIC AND COMMUNITY SPACE



The former car park area now occupied by the south moat.



The south moat after: from car park area to restored public and ecological space.



View of the reinstated south moat at night.



West moat after completion.

From a design perspective, the reinstatement of the moat has dramatically transformed what was previously a neglected and fragmented area—used in part as a car park—into an asset that is both ecological and cultural. The project contributes over 4,000 square metres of new waterbody and green edge to George Town’s historic core, reinforcing an environmentally conscious approach to urban design now gaining traction in Penang.

The moat’s influence also extends to the urban and social fabric surrounding it. The green edge it creates along Lebuhraya Light offers a buffer to traffic and re-establishes the visual coherence of the Fort precinct. With improved pedestrian paths, shaded viewpoints, and interpretive signage, the site has become more attractive for leisure, education, and civic gathering. Given Fort Cornwallis’ national and international significance, the moat’s reinstatement enhances its appeal as a visitor destination and symbolic monument.

From a heritage conservation standpoint, the project has been notable for its commitment to authenticity, a core concept in international heritage practice. According to UNESCO and ICOMOS, five key dimensions must be considered when evaluating authenticity: design, materials, workmanship, setting, and function (see page 40).

While only the south and west sections have been completed for now, the design allows for future expansion should funding and conditions permit. The project’s reversibility, combined with the availability of detailed evidence and the clarity of historical precedent, makes it a rare and exemplary case of full-scale reinstatement in a UNESCO World Heritage Site context.

Ultimately, the moat’s return is more than historical accuracy. It restores the visual logic, symbolic form, and spatial dignity of Fort Cornwallis. It turns an overlooked area into a dynamic interface between past and present. It also affirms the fort’s role as both a cultural anchor and a testing ground for environmentally integrated urban conservation.

In this sense, the moat’s reinstatement is not simply a heritage intervention—it is a strategic act of cultural repair, rooted in evidence, executed with care, and future-oriented in its purpose. Fort Cornwallis now stands not just as a memory of colonial origins, but as a model for how history can guide sustainable, inclusive urban design.

THE MOAT AND THE FIVE CRITERIA OF AUTHENTICITY

The reinstatement of the moat at Fort Cornwallis offers a rare and compelling case of urban restoration in which the widely accepted criteria of authenticity—**design, material, workmanship, setting, and function**—are convincingly addressed. Rooted in international conservation standards, including the Venice Charter (1964) and the Nara Document on Authenticity (1994), these criteria serve as benchmarks for evaluating the legitimacy of heritage interventions.

What makes this reinstatement especially noteworthy is the exceptional combination of two enabling conditions rarely found in similar cases. First, the precise documentation of the moat's original configuration—recorded in the Kelly Maps of George Town—provides a clear and accurate physical record of its design, dimensions, and relationship to the Fort. Second, the physical reversibility of the site made reinstatement feasible: although the moat area had been partially occupied by various structures over the years, it remained largely free of built structures by the time the decision to restore it was made. The only significant structure, a food court, encroached on the moat's footprint only marginally and was relocated slightly to the west, allowing the recovery of the moat's original alignment without major disruption.

Design: The reinstated moat faithfully recovers the original form, scale, and spatial configuration of the Fort's defensive structure. Guided by archaeological, cartographic, and photographic evidence, the design revives the 19th-century layout with clarity and precision. Later modifications—fragmentary and inconsistent—lacked the unity of the original design. Their removal has reinstated the formal coherence of the site.

Material: The project prioritised the conservation of original masonry and brickwork, integrating traditional materials and techniques. Where

reintegration was necessary, modern materials were used judiciously without compromising the moat's authenticity and the use of traditional materials. No cement was employed at any stage of the construction.

Workmanship: Historic craftsmanship was respected throughout, with construction techniques matched where original segments remained. New work reflects the scale and detailing of the original moat, while modern adaptations remain concealed and technically justified.

Setting: The moat's reinstatement re-establishes the spatial and symbolic prominence of Fort Cornwallis within George Town's historic seafront. Although only the south and west sections have been completed to date, they already demonstrate the potential of this intervention to recover the Fort's full civic and historical presence. Plans for reinstating the northern section will complete this spatial logic.

Function: While no longer serving a military role—a role that would be totally anachronistic today—the moat regains its historical function as part of the defensive ensemble, while taking on new civic and ecological purposes—supporting stormwater management, biodiversity, and public engagement with heritage.

In sum, the reinstatement of the moat is not only authentic and justified, but exemplary. Enabled by robust documentation and site reversibility, it shows that when supported by clear evidence and careful planning, the reintroduction of lost features can strengthen rather than diminish the cultural significance of a place.

3.5 Fort Cornwallis Museology

The museological approach adopted at Fort Cornwallis reflects a careful integration of conservation practice with interpretive storytelling, where the physical evidence of the site's layered history plays as central a role as the artefacts displayed. Rather than imposing a singular narrative or erasing traces of change, the new museum installations embrace the diachronic method, presenting the site as a palimpsest of events, uses, and transformations that span over two centuries.

The ten vaulted Storage Rooms along the southern interior wall of the Fort—among the earliest surviving structures within the compound—have been carefully conserved and repurposed as galleries. These rooms, scarred by war and altered through successive adaptations, now serve not only as settings for exhibitions but as exhibits themselves. Their architectural features, including the reconstructed arched openings and traces of the 1945 Allied bombing and Japanese occupation, remain exposed and legible. The museological strategy ensures that the building fabric—vaults, walls, floors, and scars—is treated as evidence, contributing to the interpretive journey.

This adaptive reuse approach adheres to international conservation principles. Interventions were deliberately limited and reversible: no adhesives, bolts, or permanent fasteners compromise the original masonry;



Storage Rooms before intervention.



Restored Storage Rooms.

all new elements—mounts, partitions, and multimedia installations—are free-standing, easily removed without damage. The design ensures optimal visitor flow, lighting, and accessibility, while respecting sightlines to key historical features. This philosophy extends beyond the rooms themselves, influencing the surrounding site experience, including orientation areas, outdoor ruins, and rampart views.

Artefacts recovered during archaeological excavations at the Fort have been integrated into the exhibitions, reinforcing the diachronic framework and highlighting the site's role in George Town's early urban development. These include remnants of building materials, tools, and military items that illustrate construction techniques, colonial adaptations, and the layered evolution of the Fort's function over time. The conservation works and interpretation strategy were aligned with the North Seafront Interpretation Master Plan, offering both educational value and opportunities to reconnect built environment professionals with nature-based solutions and sustainable practices.



Museology in the Storage Rooms: archaeological findings (above) and distribution of thematic displays (below).



One of the newly installed exhibit galleries at Fort Cornwallis.

The exhibition design follows a chronological and thematic progression, from the British East India Company's founding of the Fort in 1786 to its decommissioning, wartime trauma, post-independence transformation, and contemporary restoration. Visitors encounter Penang's colonial entanglements, multicultural exchanges, wartime narratives, and conservation practices through a variety of interpretive formats—objects, graphics, tactile displays, reconstructed environments, and oral histories. The final galleries focus on archaeology, conservation methods, and the future role of Fort Cornwallis within the George Town World Heritage Site.

In parallel, the site now functions as an active learning environment, particularly for younger audiences. The exhibitions and interpretive framework help schoolchildren and students grasp Penang's position within global processes of colonisation, trade, and geopolitical conflict. Fort Cornwallis becomes a lens through which the region's ties to East-West maritime history, empire, and post-colonial transitions can be better understood—bridging the past with contemporary reflections on identity and place.

Storage Rooms Exhibits

- Fort Cornwallis in the 19th Century
- Fort Cornwallis before, during and after WWII
- Fort Cornwallis' archaeology, conservation and heritage site's prospects

Exposed Outdoor Ruins

- Concrete trolley tracks from the Japanese period
- 19th Century structures

By adapting historic spaces for contemporary museological use, Fort Cornwallis presents not just a restored monument but a living narrative. The exhibitions reinforce the site's unique contribution to Penang's cultural identity and invite visitors to engage with its stories as evolving rather than static. Through this carefully staged diachronic reading of the Fort's development, the installation serves as a model for how heritage interpretation and conservation can coexist, enriching public understanding while preserving material authenticity.

3.6 The Restoration of the Koh Seang Tat Fountain Garden

Located adjacent to the Penang Town Hall, the Koh Seang Tat Fountain Garden is a significant public space in George Town's civic core. Established in 1883, the garden commemorated the inauguration of the Town Hall and featured a cast-iron fountain donated by Koh Seang Tat, a respected Chinese businessman, philanthropist, and Municipal Council Commissioner. Koh, who lived nearby, contributed the fountain as a gesture of civic pride and public generosity—one of many acts reflecting his support for education and social welfare.

Over the decades, the Garden suffered from incremental changes and neglect, diminishing its historical integrity. In 2018, a comprehensive restoration was undertaken by the MBPP, CMI and Think City in collaboration with the AKTC. Completed in 2019 at a cost of RM400,000, the project marked Malaysia's first formal historic garden restoration, carried out in accordance with the Florence Charter of 1981, a key conservation document developed by ICOMOS and adopted by UNESCO.

The restoration was guided by 1880s maps and photographs, including the Kelly Maps, which revealed the Garden's original symmetrical layout inspired by Renaissance principles. The team re-established the geometric organisation of the site, including two intersecting central pathways that



The cast iron fountain under restoration.



The original paint layers applied during the Victorian period were identified and reinstated.



Reinstatement of the original Renaissance plan of the Fountain Garden as shown in the Kelly Map.



Artist's impression of the restored Fountain Garden along Lebu Light.

created quadrants of well-maintained cow grass panels. Sparse and carefully placed furniture ensured the fountain remained the Garden's focal point, as originally intended.

A central element of the project was the conservation of the fountain itself. Years of overpainting were removed after material analysis identified its original Victorian-era colour scheme, consistent with examples found in the United Kingdom and former Commonwealth countries. The granite base, discoloured by rust and pollution, was meticulously cleaned, and cement-based patching was replaced with mortar matched to the stone's texture and tone.

The restoration also addressed accessibility and durability. Traditional gravel walkways—difficult to maintain and inaccessible to wheelchair users—were replaced with an innovative slab system reinforced with consolidated gravel. This preserved the Garden's informal character while providing a firm, inclusive surface. Period-appropriate park benches, based on the Spencer, Heath & George design, were fabricated by local craftsmen, reinforcing the Garden's historical aesthetic and supporting traditional trades. Although no documentation existed for the original lighting, simple modern lamp posts were introduced in a manner respectful of the site's historical character.

Planting schemes were informed by archival references. Existing mature trees were retained, and historical plant species were reintroduced to reinforce the Garden's period ambiance. New granite bollards helped define the Garden's edges and visually integrate it with adjacent colonial landmarks, including the Town Hall and City Hall, ensuring a cohesive civic landscape.

As a whole, the project demonstrated how a small but symbolically significant site can be revitalised through thoughtful planning, careful research, and attention to both tangible and intangible heritage. It also served a broader civic purpose by enhancing the public realm in George Town's historic centre. The restored Garden now functions as a quiet urban sanctuary, offering residents and visitors a contemplative space within the busy administrative district.

Its strategic location—within walking distance of Dewan Sri Pinang, Fort Cornwallis, and the seafront promenade—makes the garden a key node in the unfolding North Seafront Master Plan, which envisions a continuous network of high-quality public spaces from the city centre to the waterfront. The Garden's scale and simplicity complement the larger interventions



The Fountain Garden before.



The Fountain Garden after restoration.

in the area, reinforcing George Town's layered historic identity through landscape restoration rather than architectural intervention.

Importantly, the project underscores how international conservation guidelines can be adapted to local conditions. The integration of historical research, on-site investigation, skilled local fabrication, and modern needs illustrates how historic urban spaces can be renewed without compromising their authenticity. The Fountain Garden now stands as both precedent and prototype—a reminder that even small heritage landscapes, when carefully restored, can contribute significantly to civic identity and urban sustainability.

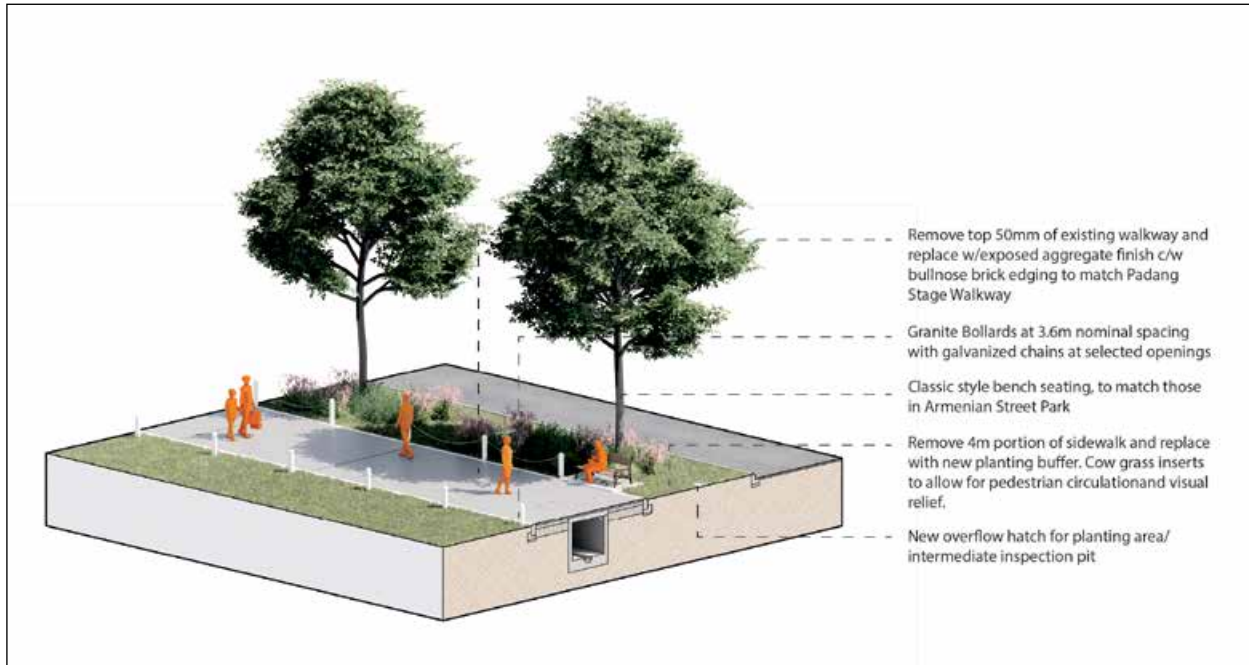
As the first restoration of its kind in Penang, the Garden offers a model for similar efforts across the city and beyond. It demonstrates that restoring public spaces is not merely a technical act but an investment in cultural continuity, community pride, and inclusive urban life.

3.7 The Lebuh Light Promenade

Lebuh Light, or Light Street, is George Town's oldest road, laid out shortly after Captain Francis Light founded the settlement in 1786. As the city's first formal street, it has long served as both a physical and symbolic axis, linking key civic landmarks such as the Penang Town Hall, City Hall, and the High Court. Its role as the ceremonial spine of the colonial city was reinforced through its alignment, views towards the Victorian Clock Tower, and modest yet dignified features such as granite bollards, chains, and a cast-iron drinking fountain.



An early photograph of Lebuh Light.



Reconfiguration of the Lebu Light Promenade inspired by its original layout.

Despite its historical prominence, Lebu Light had become fragmented over time due to road widening, changing traffic patterns, and the gradual erosion of its visual and spatial coherence. The North Seafront Master Plan, initiated by the GTCDC, sought to recover this important civic corridor by reinstating its walkability, visual order, and historical character.

The restoration of the Lebu Light Promenade was completed in tandem with the adjacent Fountain Garden project in 2019. Informed by the Kelly Maps and archival photographs, the project drew inspiration from the 19th-century layout without resorting to stylistic imitation. The design introduced wide, accessible pedestrian paths, green buffers between the roadway and the Padang, and lighting and furniture that respected the site's restrained historical language.



Lebuh Light before and after.

This approach followed international best practices, including the principles of the Florence Charter of 1981, which emphasises the conservation of historic gardens and urban spaces in ways that allow for continued use. Like the Fountain Garden, the promenade project respected the integrity of the historic setting while integrating modern interventions that addressed contemporary urban needs, such as universal access and pedestrian safety.

Funded through a RM1.325 million collaboration between the MBPP and GTCDC, the project reversed prior alterations that had undermined the character of the promenade. It restored visual corridors, enhanced connectivity between heritage landmarks, and improved the pedestrian experience along one of the city's most symbolic routes. At the same time, it provided an important model for balancing authenticity with functionality in the public realm.

The success of the Lebuhraya Light Promenade lies in its ability to anchor civic life in continuity rather than nostalgia. Rather than freezing the street in time, the project reactivates it as a living part of George Town's urban heritage. It demonstrates that sensitive design, grounded in historical understanding and public use, can revitalise even the most familiar places, ensuring that they remain relevant and meaningful in the evolving life of the city.

4. RE- ESTABLISHING THE SPIRIT OF PLACE

What unites these interventions is their commitment to historical evidence—particularly the use of the Kelly Maps, late 19th-century surveys of George Town’s topography, infrastructure, and monuments. These maps were not simply consulted; they were activated. Designers retraced alignments, archaeologists used these to target excavations, and landscape architects employed these to restore lost geometries.

The aim was never to freeze the city in time, but to restore meaning. Each project applied the principle of authenticity—not as a rigid formula, but as a layered reading of place. The moat, for instance, was rebuilt using traditional methods, but within a modular, maintainable system. The Fountain Garden was restored to its original plan but with accessible walkways introduced. The promenade reconnected key landmarks and added contemporary amenities.

This approach draws from the spirit of place, a concept recognised in UNESCO and ICOMOS charters. It insists that heritage is as much emotional as physical. It resides in the experience of being there—of sensing continuity, context, and cultural coherence.

Historical evidence—including maps, photographs, and oral histories—offered a way to navigate between memory and imagination, between what was and what could be again. It allowed George Town to reclaim its civic topography, to revive lost ecologies, and to ensure that its public spaces remain grounded in shared history.

WHAT IS URBAN RESTORATION?

Urban restoration is a relatively recent approach in the conservation of historic cities. Unlike traditional monument preservation, which focuses on protecting individual buildings or artistic masterpieces, urban restoration is concerned with the broader urban fabric—the streets, blocks, open spaces, and patterns of life that make up a city's historical identity.

The term gained prominence in the second half of the 20th century, as planners and conservationists began to recognise that historic cities were not just collections of monuments, but living environments with complex social, spatial, and cultural layers where restoration should not aim to freeze cities in time, but to reintegrate historic environments into contemporary life.

Urban restoration advocates for a values-based, contextual approach. Rather than focusing solely on aesthetics or age, it considers how different

parts of a city contribute to its identity, function, and sense of place. It supports interventions that respect historic form and scale, use appropriate materials, and strengthen the continuity of use, even as new layers are added.

In practice, this might mean reopening historic lanes, restoring the proportion of public squares, or upgrading infrastructure in ways that respect original alignments. It's not about turning cities into museums—it's about keeping them alive.

George Town's recent projects—such as the reinstatement of the Fort Cornwallis moat, the reconfiguration of the Esplanade, and the restoration of its civic gardens are clear examples of urban restoration in action. They balance historical memory with present-day needs, showing how old places can be made meaningful for new generations.

5. COMMUNITY AND PUBLIC ENGAGEMENT

These transformations were not imposed—they were co-produced. From the outset, the George Town Strategic Master Plan adopted a people-centred approach, working with residents, NGOs, schools, veterans, business owners, and heritage groups to shape priorities and test ideas. Every project included channels for listening, dialogue, and response.

As part of the preparation of the North Seafront Master Plan and Fort Cornwallis Conservation Management Plan detailed cultural mapping and community surveys were undertaken. This included a count of activities and users in various locations, pre and post development activities. Modelled on a similar method to the upgrading works at Lebuh Armenian/Lebuh Acheh Park, detailed user and visitor surveys were also undertaken. The results helped guide interventions and gauge their impact.

Other notable activities included community/stakeholder briefings and site visits during construction. At Fort Cornwallis, tailored open days and tours were organised to provide updates on works and explain the overall conservation approach. A Young Archaeologist Programme was also established for the Fort where participants assisted in small scale excavations and were exposed to the principles of archaeology and conservation.



Public open day at Fort Cornwallis.



Different aspects of presentations and community briefings undertaken to enhance public participation and solicit stakeholders views on the ongoing GTCDC projects in the central area.

A MODEL FOR URBAN REGENERATION: EVIDENCE, EXPERIMENTATION, AND COLLABORATION

Over the past 15 years, Think City and the AKTC have developed a distinctive approach to urban regeneration, rooted in evidence, experimentation, and collaboration. This methodology has proven effective on the North Seafront. Before any major interventions, a comprehensive cultural mapping exercise was conducted, including observational and intercept surveys of users. This was complemented by in-depth historical research—drawing on maps, photographs, archaeological findings, and archival texts—to establish the area’s cultural significance. This groundwork informed

future planning and attracted additional partners and technical expertise. On-site, we tested various materials and design strategies, with pilot areas playing a key role in engaging contractors and ensuring quality. Continuous monitoring, stakeholder visits, and community engagement helped maintain transparency and adaptability. Baseline data collected prior to construction has been updated post-completion to assess changes in use and perception, which, in the case of the North Seafront, have been overwhelmingly positive.

The seawall design was also adjusted based on community feedback and incorporated elements that embraced its historical and cultural use. This included features that enable the community to directly interface with the sea, as well to continue leisure activities such as recreational fishing. Veterans were also engaged to shape the Cenotaph’s redesign and the hawkers adjacent both the Fort and seawall have been continuously consulted on ongoing works.

Inclusive urban design was central to the approach, with conscious efforts made to ensure maximum community benefits. From pre-design surveys, open days, and tailored site tours, the various interventions in the North Seafront have embedded community and public engagement through each development stage. This culture of participation is now embedded in George Town’s planning ethos. It reflects the belief that cities are not made by architects alone, but by the citizens who live, walk, remember, and imagine within them.



Young archaeologists' initiative during excavations at the west moat.

6. NEXT STEPS: ADVANCING A UNIFIED VISION FOR THE NORTH SEAFRONT

As George Town's North Seafront transformation reaches a turning point, the focus now shifts to a coordinated series of follow-on projects designed to complete the reintegration of this historic precinct. These next steps are not isolated improvements but part of a holistic vision—one that continues to draw inspiration from the area's historical configuration while adapting it to contemporary civic needs and environmental imperatives.

A cornerstone of this upcoming phase is the reinstatement of the northern moat at Fort Cornwallis. This will complete the quadrilateral perimeter of the Fort's original defensive system, building on the successful reconstruction of the southern and western sections. Backed by archaeological, cartographic, and photographic evidence, this intervention will once again rely on lime-based mortar, brick and stone masonry, and modular techniques to allow for structural independence and long-term maintenance. In addition to its historical and symbolic value, the moat serves an ecological function—acting as a water retention system, enhancing biodiversity, and contributing to the reduction of the urban heat island effect. It will also feature a hybrid filtration system that combines mechanical and bio-retentive elements, making it a unique case of traditional restoration married to modern sustainability.

Running alongside this initiative is the reimagining of the northern moat edge, an area long neglected after the moat was filled in the 1920s. The current walkway along Jalan Tun Syed Sheh Barakbah suffers from poor paving, broken surfaces, and a jarring level difference from the adjacent promenade. Its improvement is not only a matter of urban comfort—it is essential to restoring the visual and spatial relationship between the city and its historic seafront. The new design proposes a realigned, accessible walkway with integrated stormwater management features, shaded seating, and a viewing terrace that allows residents and visitors to appreciate the restored moat from an elevated vantage point.

A defining feature of this segment will be the reconstruction of the historic Esplanade bandstand, originally erected in 1884 and lost during World War II. Reinstating this structure will restore a vital node of civic identity and cultural expression. In its heyday, the bandstand was a venue for musical performances by ensembles such as the 'Manila Band', and its absence has left a notable void in George Town's communal landscape.



Proposed reinstatement of the North Moat looking east.



The proposed North Moat looking west with the reinstatement of the bridge and sally-port entrance.

The new structure, while echoing the form and function of the original, will be equipped for modern use—providing a performance platform for Penang’s vibrant musical community and public events, while reconnecting the Esplanade to its role as a civic stage.

The vision continues with a broader sequence of landscape and infrastructure upgrades, extending the pedestrian-friendly public realm beyond its current limits. These include:

- **The extension of the promenade eastward** to Jalan Green Hall and possibly beyond, creating an uninterrupted waterfront walk;
- **Enhancements to Logan Square**, including new paving, heritage-sensitive lighting, greenery, and the restoration of the Logan Memorial itself;
- **Refinements to adjacent lanes and infrastructure**, particularly around Jalan Tun Syed Sheh Barakbah, where resurfacing, utility screening, shaded sidewalks, and native landscaping will soften the current back-of-house character;
- **Upgrades to the walkway north of City Hall**, where visual clutter, fencing, and inappropriate paving materials currently detract from the civic setting;
- **Reconfiguration of Lebuhraya**, an underused corridor that will be transformed into a green connector between the Fountain Garden and the promenade, re-establishing axial views to the sea and improving night-time safety through lighting and signage.

Together, these interventions represent more than the sum of their parts. They advance a shared public realm vocabulary based on walkability, comfort, ecological sensitivity, and historical continuity. Each element—whether structural, landscaped, or interpretive—is conceived as part of a spatial narrative that reconnects George Town’s layered past to a resilient and inclusive future.

The next phase of the North Seafront project thus stands as a strategic continuation of a long-term urban regeneration process. It demonstrates how design excellence, historical evidence, and environmental awareness can converge in service of public life. By completing the moat, improving connectivity, and reinstating key civic features, this renewed waterfront will not only enhance George Town’s physical character but reanimate its cultural and symbolic heart.

6. NEXT STEPS: ADVANCING A UNIFIED VISION FOR THE NORTH SEAFRONT



Aerial view of the Esplanade with the reintroduction of the bandstand in its original position.



View of Jalan Tun Syed Sheh Barakbah with the proposed reintroduction of the bandstand.

