



CHARLES STREET SQUARE UPGRADE

URBAN DESIGN REPORT

AUGUST 2020



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1

INTRODUCTION

Charles Street Square is situated at a unique place on the Parramatta River – the meeting of fresh and salt water, the eastern edge of Parramatta CBD, and the entry point to Parramatta for those arriving by ferry. Charles Street Square, together with the Escarpment Boardwalk and future Charles Street Weir river crossing, will form the new Parramatta Quay precinct – a contemporary gateway to the River City and a fitting counterpoint to Circular Quay.

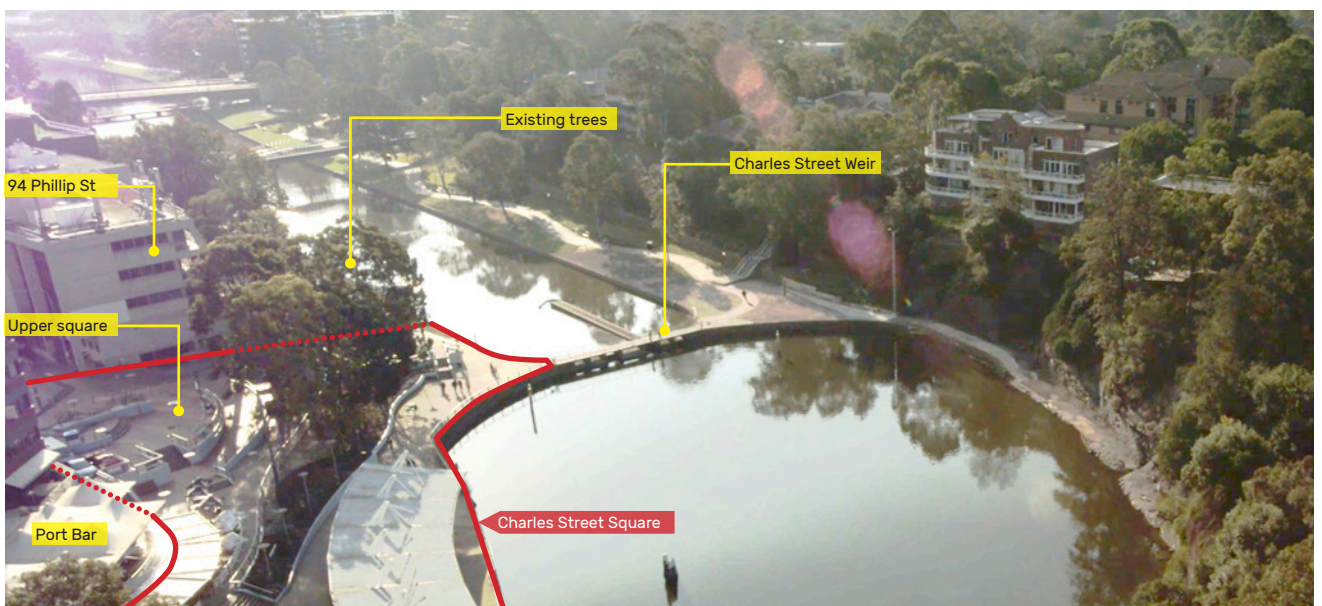
The Charles Street Square renewal aims to improve connections between the river and the city for all users – pedestrians, cyclists and people with limited mobility. In doing so, the design concept seeks to create a memorable experience that celebrates the special qualities of this unique point in the river. It responds to the surrounding landscape of escarpment, trees and parkland, the curving geometry of the river, the rich cultural heritage of the place, and the sense of arrival to create a welcoming space for locals and visitors alike.

This report has been prepared by Spackman Mossop Michaels to document the design proposal that is being submitted for environmental assessment in July 2020. It is to be read in conjunction with the Landscape Architectural and Architectural drawings package that accompanies the Charles Street Square Upgrade Review of Environmental Factors.

Project team

The project team is comprised of:

- City of Parramatta – City Transformations team
- Spackman Mossop Michaels – head consultant, landscape architect and urban designer
- Lahz Nimmo Architects
- Northrop Consulting Engineers
- Alliance Geotechnical
- Curio Projects – heritage and archaeology
- Eco Logical – biodiversity
- Extrablack – environmental graphics
- Hydroplan – irrigation design
- KJA – community engagement
- MBM – cost planner
- MG Planning – statutory planner
- Moore Trees – arborist



Top: Existing aerial view of Charles Street Square, looking east
 Above: Existing view of Charles Street Square, looking west

EXISTING SITE

Located at the junction of Charles Street and Phillip Street at the north-east corner of the Parramatta CBD grid, Charles Street Square connects the city to the river at Parramatta Wharf – the terminus of the Parramatta River ferry service, and the riverine arrival point to Parramatta.

Charles Street Square is a triangular site bounded by:

- 94 Phillip Street to the west – a 4 storey commercial building with the driveway to its underground carpark located at the square's western boundary. The driveway is situated within the Charles Street road reserve, which forms the western edge of the site
- 34 Charles Street to the south – an 8 storey commercial building with a ground floor café fronting Charles Street
- 36 Charles Street – a café/restaurant (The Port Bar) located between 34 Charles Street and the river. There is a variable width right of carriageway along the southern edge of the square that connects 36 Charles Street with Charles Street
- The Parramatta River to the north. Charles Street Square directly fronts Parramatta Wharf, which was upgraded in 2019, and Charles Street Weir – the easternmost weir on the Parramatta River
- Riverfront parkland to the east.

The existing square consists of a riverfront walkway and a small street level square, connected by a series of terraced walkways that are linked by ramps and stairs that do not meet current accessibility standards. Situated between the riverfront and terraced walkways is a planted embankment that includes mature trees which provide landscape amenity to the square. The riverfront walkway includes a large covered waiting area with seating adjacent to the ferry wharf. The street level square is dominated by a large public artwork by Ruth Downes; consisting of a wrought-iron steel sculpture and mosaic floor that reflects the theme 'meeting place of the eels', the artwork provides an entry statement to and from the waterfront. Public facilities in the existing square include automated public toilets, bike lockers and bike racks.

Below: View of upper square at the corner of Charles Street and Phillip Street
Bottom: View along riverfront walkway to Charles Street Weir, from ferry wharf



Above: View of Charles Street Square terraces and ramps

CULTURAL VALUES

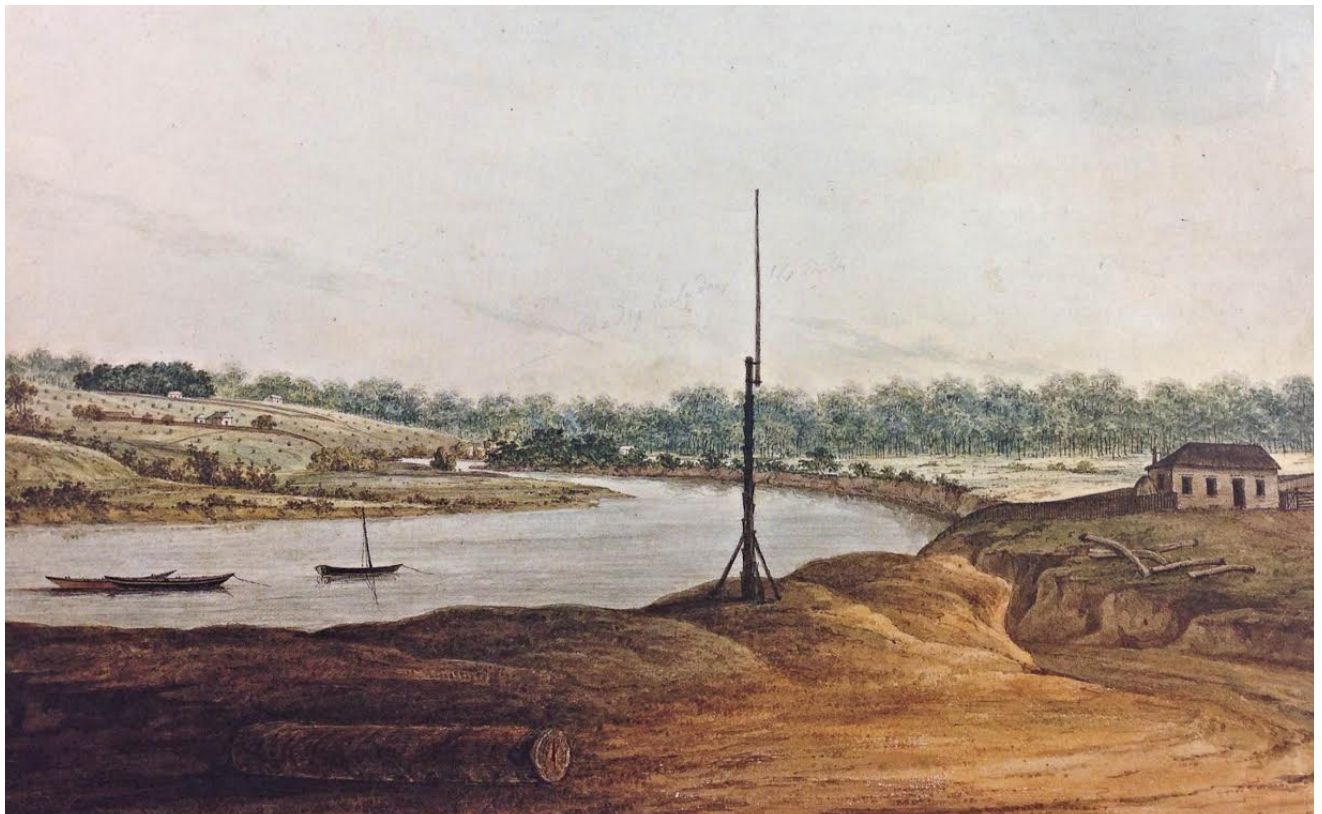
The Parramatta River is fundamental to the form, history and foundation of the modern city of Parramatta. The river corridor provides numerous local and district connections, and in many ways defines Parramatta's unique sense of place – the name of the city references the meeting of saltwater and freshwater at this point in the river: Burramatta 'the head of the river', 'the place where the eels lie down'.

The Parramatta River is also an age-old transport spine. Generations of Aboriginal people and European settlers used its water-borne carriageway to move along the river. The fledgling settlement of Sydney relied on this link for sustenance, and through this river gateway the city of Parramatta grew. While road and rail have replaced the river as the dominant means of transport into Parramatta, the ferry trip from Circular Quay to Parramatta remains a popular service for visitors – particularly on weekends.

Charles Street Square is situated at a special point on the Parramatta River where these key cultural values are fundamentally embodied in the location and place. The square is situated directly adjacent to Charles Street Weir, the tidal extent of the Parramatta River – the exact boundary of salt water and fresh water in the river. The square is also located directly adjacent to Parramatta Wharf, the terminus of the Parramatta River ferry service. As such, the wharf and the square form an important arrival point, linking the Sydney's CBD to Parramatta at the regional scale, and the river to the city at the local scale.

The Landing Place at Parramatta, 1809

(Mitchell Library: SV1B/PARR/9;
source: City of Parramatta Council
Research & Collection Services
<http://arc.parracity.nsw.gov.au/wp-content/uploads/2014/09/Place-1024x655.jpg>)



ENVIRONMENTAL VALUES AND LANDSCAPE CHARACTER



View west along Parramatta River from Charles Street Weir



View east along Parramatta River from the vicinity of Charles Street Weir

The City River corridor has a distinctive landscape character defined by high riverbanks on either side of the Parramatta River. Charles Street Weir marks a clear distinction in the character of the river corridor, emphasising the role of Charles Street Square as a place of transition – between river and city; between urban core and edge; between informal/‘natural’ landscape and structured city park. Upstream (west) of the weir, the river forms a largely straight channel defined by constructed edges and visible urban development atop the riverbanks on both sides of the corridor – particularly to the rapidly developing Parramatta CBD on the southern side of the river. The urban character of the river corridor west of the weir will only intensify in the future with significant redevelopment of the riverfront properties for private and public uses, such as the new Powerhouse Museum (MAAS). Downstream (east) of Charles Street Weir, the river retains a natural meandering course and largely unconstructed banks, often edged by mangroves – particularly along the northern bank. Surrounding urban development is much less visible from within the river corridor, although this will also change in the future – especially along the southern bank between Charles Street and Macarthur Street (Gasworks Bridge) with the redevelopment of 180 George Street currently underway.

Charles Street Square itself is located at a distinctive place within the river corridor, characterised by a strong sense of enclosure created by the combination of the weir itself, the wide bulbous shape of the river, and the tall escarpment of rock and vegetation rising directly out of the water opposite the square. While the northern bank of the river retains native vegetation, including two threatened ecological communities, the Charles Street Square site was extensively cleared in the past and no original vegetation remains. The original native vegetation of the site would have been the Cumberland Riverflat Forest vegetation community. The current vegetation within Charles Street Square consists of a mixture of native and exotic garden plantings, including a variety of native trees, including: Sydney Red Gum (*Angophora costata*), Spotted Gum (*Corymbia maculata*) and Brush Box (*Lophostemon confertus*).



View to Charles Street Weir through existing trees at Charles Street Square

Flooding

The City River corridor is prone to frequent flooding of the Parramatta River, which can break its banks up to 6 times each year. As such, the riverfront level of the square, located at RL 2.0, can be expected to be regularly inundated. During initial project briefings, City of Parramatta's technical team advised the project team that any flooding lower than the 10% AEP (annual exceedence probability) of RL 4.5 should be considered frequent enough to be considered a 'nuisance' event at Charles Street Square, though this is not formally reflected in any documents.

The direction from the City of Parramatta, based on the most recent catchment flood study, the *Lower Parramatta*

River Floodplain Risk Management Study – Flood Study (SKM, 2005), was that the following levels should be used to understand potential flood impacts on the design of Charles Street Square:

- Parramatta River bank: RL 2.0
- 10% AEP (nuisance flood level): RL 4.5
- 1% AEP flood level: RL 5.6
- Flood Planning Level (FPL): RL 6.1*
- Probable Maximum Flood (PMF): RL 10.4

* 1% AEP +500mm freeboard, as defined in the Parramatta LEP 2011.



Top: Flooding at Charles Street Square – view to Charles Street Weir from the square 16/03/2019 (Cameron Price, <https://twitter.com/campricenews/status/1107133592520396805>)

Above: Flooding at Charles Street Square –view from above Charles Street Weir, 05/06/2016 (photo: City of Parramatta)

2 DESIGN FRAMEWORK



Parramatta City River Strategy, 2015

The Charles Street Square Upgrade is part of the City River Program of Works, which builds upon the vision of the *Parramatta City River Strategy* (2015) through staged public domain improvements, as well as the guidance and coordination of co-investment in the river corridor by Government and the private sector. Charles Street Square Upgrade is the second project to be delivered by the City of Parramatta under the City River Program. It follows the Escarpment Boardwalk and Stewart Street Link project, located directly opposite the square on the northern side of the river, which is currently under construction.

PARRAMATTA CITY RIVER STRATEGY (2015)

The *Parramatta City River Strategy* (McGregor Coxall, 2015) identifies Charles Street Square as part of the 'Parramatta Quay' precinct, which is described as:

Parramatta City Centre's major ferry interchange connecting Sydney to Parramatta. Improved accessibility, cafe activation and a series of pedestrian plazas ensure Parramatta Quay is identified as Parramatta City Centre's major river arrival point (p.vii)

The first of ten strategies outlined in the City River Strategy, the establishment of Parramatta Quay aims to create a unique arrival experience for Parramatta by water and to establish a key harbourside destination that links directly via ferry to Sydney's CBD. Of the key opportunities for Parramatta Quay identified in the *City River Strategy*, the following are directly relevant to, and have guided the development of, the Charles Street Square upgrade:

- Enhance sense of arrival to Parramatta through a new modern ferry terminal building
- Establish clear view corridors towards the river corridor
- Improve access and movement between Philip Street and Parramatta River

Together with the Escarpment Boardwalk project and the recent Parramatta Wharf upgrade, and a future upgrade of Charles Street Weir, the Charles Street Square upgrade will deliver on the realisation of a new Parramatta Quay precinct.



Parramatta City River Strategy, 2015

CHARLES STREET SQUARE STRATEGY (2017)

The Charles Street Square upgrade is also guided by the *Charles Street Square Strategy* (Hassell, 2017), which further develops the aspiration for a revitalised Charles Street Square as a key part the Parramatta Quay precinct. The *Charles Street Square Strategy* focusses on the role of Charles Street Square as a transport interchange, and aims to address the need for a renewed space that improves visitor arrival and public amenity, and celebrates the historic and contemporary importance of Parramatta's river gateway.

Key challenges

The *Charles Street Square Strategy* identified the following key challenges for the Charles Street Square upgrade:

- Property boundary issues – the Charles Street road reserve forms the western edge of the square, and also provides vehicular access to 94 Phillip Street
- Limited visual and physical connectivity between the city streets and the river at an important transportation gateway
- Lack of delineation between public and private space, which makes access to and from the ferry wharf difficult, especially as the accessible path is obscured by outdoor dining
- Lengthy and inaccessible paths, which increase conflict between pedestrians and cyclists navigating the square
- Vehicular access and waste collection within the square limits opportunities for activation
- General clutter of fixtures within the square
- Flooding – the river foreshore is prone to frequent flooding, including high hazard.

Concept Master Plan

The *Charles Street Square Strategy* included a concept master plan that articulated three distinct roles for the square – arrival, dispersal and meeting, and identified three key principles to support the overall strategy:

- People can make connections
- People can move freely between different modes
- The Square can become a destination within its own right.

The design approach adopted for the concept master plan was to create the Charles Street Steps – a single 'amphitheatre style' stair occupying almost the entire square, providing direct access and clear visual connections between the street and the river foreshore. The Charles Street Steps concept also included:

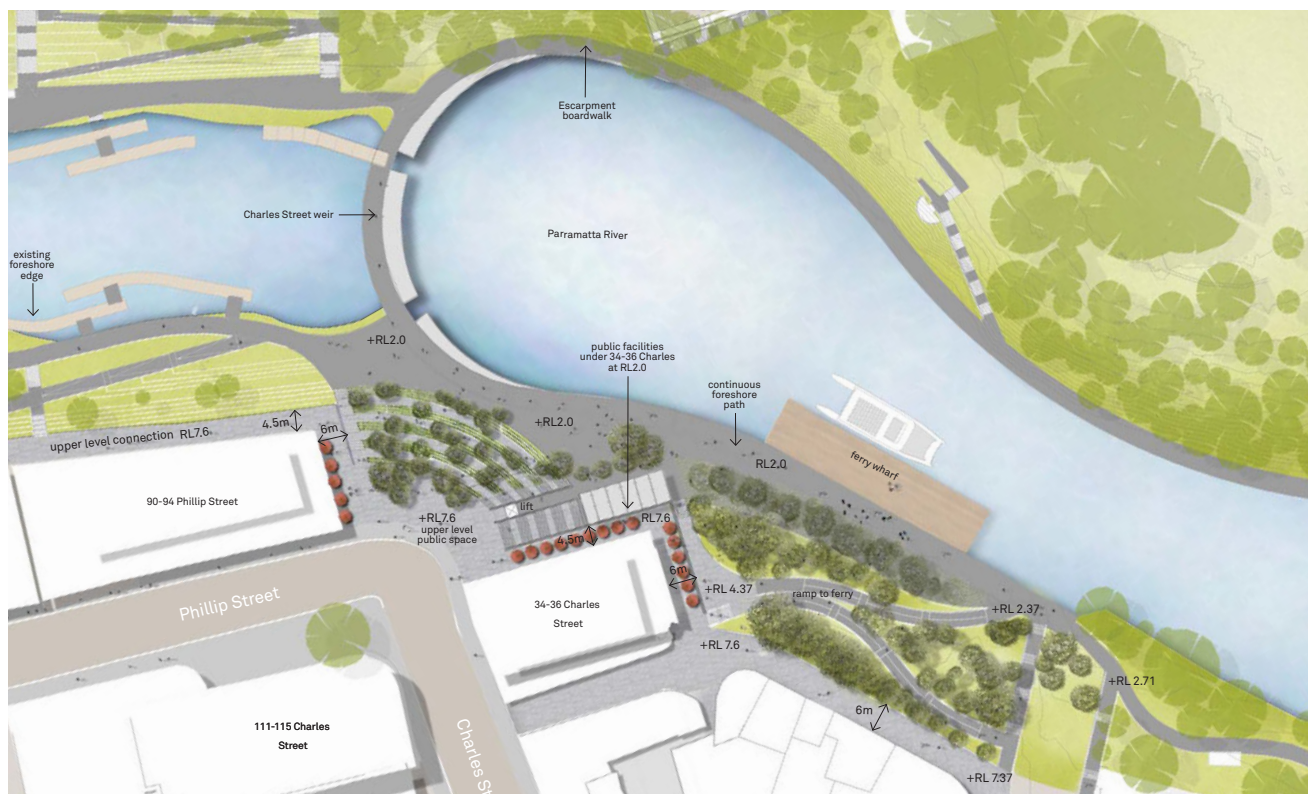
- Tall trees integrated into the steps to provide shade and shelter while maintaining views to the river under the tree canopy
- A public lift to provide accessibility between the riverfront and the street, a level difference of 5.6m
- Public toilets at the riverfront level, integrated into the built form of a redeveloped 34-36 Charles Street
- Integration with a new street level promenade on the river side of the riverfront buildings along the southern side of the City River corridor. The new upper level promenade is to be developed incrementally over time as redevelopment occurs along the river
- Ramped access between the riverfront and the upper level promenade to the west of Charles Street Square, within parkland on the river side of the 180 George Street redevelopment.



View to lower level of the Port Bar (36 Charles Street)



View of the Port Bar's right of carriageway at the upper square



Charles Street Square Concept Master Plan, *Charles Street Square Strategy* 2017

DEPARTURE FROM THE 2017 CONCEPT MASTER PLAN

Development of the Charles Street Square upgrade has required a fundamental reconsideration of, and departure from, the 2017 Concept Master Plan – which was predicated on amalgamated redevelopment of the adjacent properties at 90 and 94 Phillip, and 34 and 36 Charles Street. As these amalgamations are long term propositions, the Charles Street Square upgrade is constrained by existing edge conditions, which require the retention of access to the adjacent properties – in particular: the basement carpark at 94 Phillip Street, and the upper and lower levels of the Port Bar (36 Charles Street).

While the need to respond to existing site conditions has necessitated an essential redesign of the project, the underlying objectives and principles of both the 2015 *Parramatta City River Strategy* and the 2017 *Charles Street Square Strategy* and Concept Master Plan remain key drivers of the Charles Street Square upgrade.



View of the driveway to the basement carpark at 94 Phillip Street

PROJECT AIM AND OBJECTIVES

The Charles Street Square upgrade aims to provide a high quality urban precinct, appropriate to site's history and urban context, and befitting of its significance in the City River precinct as the 'gateway' to Parramatta for those arriving by ferry.

The design objectives for the Charles Street Square upgrade, developed from the project brief, are:

- To create a memorable arrival and departure experience at a key gateway to Parramatta
- To create inclusive, legible and safe connections between street and river for all users – pedestrians, cyclists and people with limited mobility
- To retain and, where possible, expand the continuous level access along the riverfront promenade
- To integrate the transport interchange function of the square into the experience of the place
- To create a generous and comfortable public space that enhances the site's role as a natural meeting point for community, and enables a range of social settings and activities
- To celebrate the special qualities of the site – its cultural and heritage values, the distinctive character of the landscape
- To create a resilient and sustainable public space that avoids or minimises impact on the environment wherever possible

3 DESIGN PROPOSAL

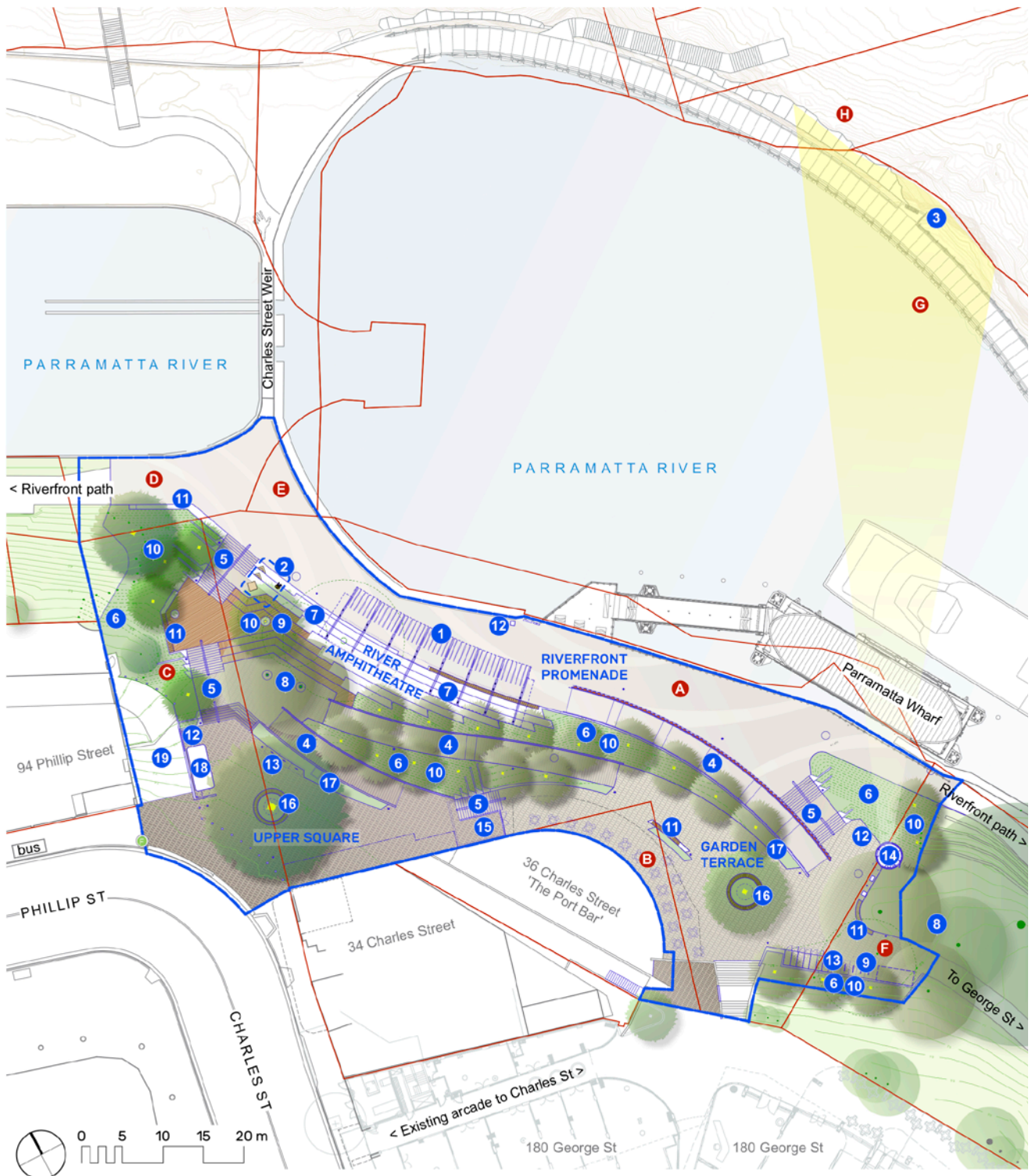
The Charles Street Square upgrade seeks to improve amenity, legibility, identity and access for all users and, in doing so, reinforce and enrich the site's important role as the experience of arrival at Parramatta for those travelling by ferry. The design proposal has been fundamentally shaped by the unique qualities of the place, featuring a sinuous organising geometry that responds to the shape of the river, the enclosure of the surrounding escarpment, existing and upcoming built forms, and the cultural/environmental reference point of the 'meeting place of the eels'.

The key spatial components of the proposed upgrade are: a generous riverfront promenade, a welcoming square at street level, a new garden terrace at mid-level, a river amphitheatre of terraced seating. These spaces are all connected by a series of stairs and ramped walkways that provide multiple clear, easy to understand and accessible connections between the riverfront and the city streets for pedestrians, cyclists and people with limited mobility. The new spaces that make up Charles Street Square have been designed for inclusivity and flexible use, to allow for further animation with programmed events and activities, as well as everyday informal gatherings. A coordinated palette of public furniture – including multi-function light poles, bins, drinking fountains, and bike parking – reduce clutter and visually unify the public domain.

The design has been fundamentally shaped by flood resilience – through the minimisation of flood obstructions, the provision of a clear and continuous path of evacuation, and the choice of easy to maintain robust materials, finishes and detailing. Environmental sustainability measures include: the use of recycled, renewable, and/or recyclable materials; the incorporation of rain gardens to capture and filter stormwater; and a focus on low-maintenance native plant species for drought tolerance and potential wildlife habitat creation.



Artist impression of Charles Street Square from the northern escarpment



CHARLES STREET SQUARE UPGRADE

LOCATION AND SITE PLAN

JUNE 2020

KEY

Riverfront promenade

- 1 Wharf shelter
- 2 New public artwork-sculpture component
- 3 New public artwork-projection component
- 4 Ramped walkways
- 5 Stairs

River Amphitheatre

- 6 Floral garden
- 7 Terraced seating
- 8 Existing trees
- 9 Proposed tree removal
- 10 New trees

Garden Terrace

- 11 Bench seating
- 12 Drinking fountain
- 13 Bike parking
- 14 Ferry office
- 15 Store room (under)

Public Square

- 16 Feature tree & seating
- 17 Rain garden
- 18 Public toilets (existing, relocated)
- 19 Existing driveway

Lots

- A 38 Charles Street Lot 2, DP 869816
- B 36A Charles Street Lot 2, DP 869820
- C Charles St road reserve
- D 340A Church Street Lot 1, DP 1172250
- E 21 Charles Street Lot 2, DP 532539
- F 182C George Street Lot 1, DP 506760 (CBD Foreshore Reserve)

- G Lot 1, DP 532539 (Parramatta River)
- H Lot 22, DP 1346 (Stewart St Reserve)

RIVERFRONT PROMENADE

The riverfront space at Charles Street Square has been widened to provide a generous promenade that better accommodates all users along the river foreshore – both now and into the future, with visitor numbers expected to increase with planned public domain improvements and private and institutional developments along the river corridor. The riverfront promenade has been expanded from a minimum width of 3.6 metres to 5.8 metres wide at its narrowest point, and a maximum width of about 12.9 metres compared to the existing maximum width of 10.9 metres. The extra width eases conflicts between pedestrians, cyclists and ferry passengers in this busy riverfront space, which connects the Parramatta ferry wharf with parklands to the east and west, as well as the Escarpment Boardwalk and parklands along the north bank of the river via Charles Street Weir.

While the riverside edge of the promenade remains unchanged, the 'landside' edge has been decluttered and reshaped as interlocking arcs that form a ramped walkway and stepped seating platforms that rise up from the riverfront to the new garden terrace and upper square.

The new streamlined geometry of the 'landside' edge reinforces the river's serpentine shape and complements the new Escarpment Boardwalk, which is currently being constructed on the northern bank of the river opposite Charles Street Square. By adopting a consistent geometry that responds to the intrinsic landscape character of this part of the river, the Charles Street Square upgrade combines with the Escarpment Boardwalk to unite the space surrounding Charles Street Weir and Parramatta Wharf, creating a distinctive visual and spatial identity for the new Parramatta Quay precinct.

The reduction of clutter and simplified geometry of the riverfront not only creates identity and increases amenity, it also removes existing obstacles to flood conveyance – particularly the existing stairs opposite the weir. The flood resilience of the riverfront space is strengthened by a restricted palette of robust materials, finishes and detailing, including: precast concrete steps and seating platforms, in situ concrete paths with exposed aggregate finish, and weathering steel balustrade at the ramped walkway.



Artist impression of the riverfront promenade at Charles Street Square

RAMPED WALKWAYS

The design provides for equitable access between the riverfront and the city streets with a series of three ramped walkways that function as shared paths for pedestrians, cyclists and people with limited mobility. Each of the ramped walkways is a generous 3 metres wide, and together they traverse an overall level change of 5.5 metres. The lower ramped walkway has a gradient of 1:14, while the middle and upper walkways have a gradient of 1:20. The ramped walkways comply with the requirements of relevant accessibility standards and guidelines, principally:

- Disability Standards for Accessible Public Transport 2002 (DSAPT 2002)
- AS1428.1:2009, Part 1: General Requirements for Access – New Building Work
- AS1428.2:1992, Part 2: Enhanced and Additional Requirements – Buildings and Facilities
- AS1428.4.1:2009, Part 4.1: Means to Assist the Orientation of People with Vision Impairment – TGSI
- Guide to Road Design Part 6A: Paths for Walking and Cycling (Austroads 2017)

For further discussion of accessibility, refer to *Charles Street Square Upgrade Access Review – Design Development* (Morris Goding Access Consulting, May 2020).

The ramped walkways are designed to be intrinsic to the experience and identity of the square, rather than purely functional circulation infrastructure. The gently curving walkways weave their way up the slope of the site, separated by native garden beds that embed them into the landscape experience of the square. The lower ramp is clad with pleated weathering steel, which forms a distinctive balustrade that creates a strong visual identity for the square when viewed from the riverfront. The robust material withstands regular flood impacts with minimal maintenance, and relates to other historical and contemporary maritime structures along the Parramatta River. The weathering steel is echoed in the colour of the steel balustrades for the middle and upper walkways; their strong visual presence assisting with intuitive wayfinding and navigation of the site, minimising the need for additional signage.



Artist impression of the pleated weathering steel balustrade along the lower ramp



RIVER AMPHITHEATRE

The River Amphitheatre is a series of curved seating terraces, with capacity for over 400 people, stretched along the riverfront between Charles Street Weir and the ferry wharf. The concave curve of the terraces rising up from the riverfront brings the enclosing quality of the opposite escarpment across to the southern bank of the river at Charles Street Square, tectonically uniting the landscape of Parramatta Quay. The River Amphitheatre develops the 'Charles Street Steps' concept from the 2017 Charles Street Square Strategy to better suit the landscape character and conditions of the site, while still providing a dramatic sense of arrival, strong identity and flexible gathering space that underpinned the original concept.

Rising from the riverfront, the seating terraces are constructed of precast concrete that can withstand regular flood impacts, with potential for interpretive graphics to be embedded into the concrete (subject to development of the Charles Street Square Interpretation Plan). Integrated at the western edge of the seating terraces, are the new Charles Street Steps – generously wide precast concrete stairs that provide a direct connection, along the Charles Street alignment, between the street level and the riverfront at Charles Street Weir.

Partway up the River Amphitheatre, a portion of the terraces are timber decking to enable the preservation of existing trees which, along with new tree planting, provide dappled shade to the seating terraces. Constructed of recycled Australian hardwood, the timber decking introduces a natural material that references the wharf structures along the Parramatta River and in Sydney Harbour.

At the riverfront, a distinctive new landside wharf shelter is integrated with the seating terraces of the River Amphitheatre, creating additional covered space to wait for the ferry or for riverfront events. As the wharf shelter is located within the flood corridor, its structure is designed to withstand, at a minimum, 1% AEP flood velocities. Providing a strong visual statement upon arrival from the ferry, the architecture of the shelter references the forms of historical timber wharf structures in a contemporary way and integrates place naming for the new Parramatta Quay. In plan, the gentle curve mimics the geometry of the seating terraces.



Artist impression of the River Amphitheatre from the riverfront promenade, looking east



Sectional elevation through the River Amphitheatre



Sectional elevation through the River Amphitheatre and ramped walkways

GARDEN TERRACE

The Garden Terrace is a new mid-level space within Charles Street Square for outdoor dining and public seating within a garden setting. Located between the lower and middle ramped walkways, the Garden Terrace provides a generous respite space that makes the almost two storey level difference in the journey between the riverfront and the street less daunting. The Garden Terrace is located above the zone of frequent inundation at the riverfront, and forms an expansive new public frontage for the lower level of the adjacent Port Bar (36 Charles Street).

The Garden Terrace marks the confluence of multiple public paths from the surrounding precinct: stairs and the lower ramped walkway from the riverfront; a path to the east through parkland to Harrisford House and George Street; stairs up to an existing arcade to Charles Street through 180 George Street; and stairs and the middle ramped walkway up to the street level square. A new fulcrum of activity and connectivity within Charles Street Square, the Garden Terrace is generously sized to comfortably share existing outdoor dining and public uses. The space includes public domain furniture such as plentiful public seating, bin and drinking fountain, as well as bike facilities in the form of bike lockers, bike racks and bike hire. Extensive new planting of garden beds and trees provide additional environmental comfort, visual interest and landscape character to the space, while also maintaining views to the river.

Located higher up the riverbank, the Garden Terrace includes facilities that are not possible at the frequently inundated riverfront: a combined storage and electrical room, and a Ferry Office. Replacing the existing stair along the western edge of 36 Charles Street, the store room is accessed from the Garden Terrace while its roof expands the public frontage to the Port Bar at the upper square. At the eastern edge of 36 Charles Street, an adjacent small public terrace, currently accessed from a stair landing, is raised to create the Upper Eastern Terrace to provide a level connection to the upper floor of the Port Bar and to the existing arcade to Charles Street through 180 George Street.

Prominently located at the top of the ramp and stairs from the riverfront, the Ferry Office affords clear surveillance of the wharf for ferry staff, functions as a service point for ferry passengers, and houses projectors for the digital component of the new public artwork. The modest, yet finely detailed, timber-clad cylindrical building also acts as a navigation beacon within the square, clearly signalling the route to the riverfront from all other entry points to the Garden Terrace.



Artist impression of the Garden Terrace, looking west



Artist impression of the Ferry Office



Artist impression of the Garden Terrace from the lower ramp, looking east toward the Ferry Office

UPPER SQUARE

At the upper level, the square is updated to create a welcoming public space at the corner of Phillip and Charles Streets, free of clutter and with clear views through the space down to the river.

The space has been decluttered through the removal of visual and physical obstacles such as steps, railings, walls, extraneous signage and commercial rubbish enclosures. The existing public artwork by Ruth Downes, consisting of a large metal sculpture, plinth and terrazzo paving inlay, is deaccessioned to further free up the space. Vehicular access to the square is controlled with the addition of bollards along the street edge of the square, while access to the carpark at 94 Phillip Street is maintained via the existing driveway. Bollards at the street interface and at the bottom of the 94 Phillip Street driveway also provide Hostile Vehicle Mitigation to enhance public safety.

The river edge of the upper square is slightly lifted to create a single sloping plane, gently rising from the ramped walkway and stairs to the street at an accessible grade of 1:40. The ground plane is further unified with granite paving, a material choice that will extend to adjacent footpaths as part of future public domain improvements,

as well as a planned future upper promenade along the northern frontages of adjacent riverfront properties to the west. The paving in the upper square will feature additional granite colours laid in a site-specific pattern, to differentiate Charles Street Square from the surrounding streetscape and urban connections, and signal the square as a 'special place' in the urban precinct.

The existing Exeloo automated toilet is relocated to the upper square (subject to a separate Development Application), providing fully accessible public amenities that are available 24/7. The exterior of the Exeloo module is embellished with a custom graphic vinyl film. Public amenity is further enhanced with the provision of urban furniture, including: bin, drinking fountain, bike racks and public seating. The upper square features a mature transplanted Port Jackson Fig tree, which memorably identifies the Charles Street Square in the city streets, and provides much needed shade and landscape character at the urban threshold to the river corridor.



Sectional elevation through the new Charles Street Stairs, connecting the riverfront with the upper square



Artist impression of the upper square from the corner of Charles Street and Phillip Street



PLANTING DESIGN

The planting proposal for Charles Street Square builds on the existing palette of mixed native and exotic species found on site and along the river corridor, which contributes to the unique landscape character of the area. The planting design aims to address:

- The landscape experience
- Environmental comfort
- Opportunities for cultural interpretation
- Opportunities for habitat creation and biodiversity enhancement
- A minimal maintenance regime.

The existing vegetation on site consists of mixed native and exotic garden plantings. The original native vegetation of the site would have been the Cumberland Riverflat Forest vegetation community, however no remnants exist on site due to extensive past clearing. Of the existing trees on site, only one is an exotic species – a Jacaranda (*Jacaranda mimosifolia*) just below the driveway to 94 Phillip Street. The remainder is a collection of mixed native trees: a group of four Sydney Red Gums (*Angophora costata*) and one Brush Box (*Lophostemon confertus*) adjacent to the stairs to the weir; and a group of two Spotted Gum (*Corymbia maculata*) in the parkland immediately west of the existing square. Of the eight existing trees, four are removed for the Charles Street

Square upgrade: 2 *Angophora costata*, 1 *Lophostemon confertus*, and 1 *Corymbia maculata*. The planting proposal replaces these trees and supplements them with additional tree plantings, with a total of 28 new trees proposed.

The tree planting scheme aims to restore the landscape character of the site, connect to the landscape character of the adjacent riverside parklands, and create a distinctive identity for the square that enhances the sense of arrival. At the upper square, a mature transplanted Port Jackson Fig (*Ficus rubiginosa*) highlights the Charles Street Square from the city streets, and provides much needed shade and landscape character at the entry point to the river corridor. Shade tolerant understorey planting, including Bush Lily and Red Ginger, provides textural interest and seasonal floral colour. A second new Port Jackson Fig, similarly underplanted, marks the entry to the square from the west – at the junction of the Charles Street Steps, Charles Street Weir and the riverfront promenade. The two new Port Jackson figs echo the existing large Port Jackson Fig above the 'Story Walls' artwork at the eastern end of the site, each providing a distinctive visual marker upon arrival to Charles Street Square along the riverfront and from the city.

Within the heart of the square, the ramped walkways are embedded into the landscape by three 'ribbons' of structured garden planting. The lower 'ribbon' is a planted



Proposed planting creates a vegetated riverbank that connects remnant trees with existing planting in the adjacent parkland

embankment that connects the middle ramped walkway with the River Amphitheatre and the lower ramped walkway. Within this lower garden, a row of Sydney Red Gum (*Angophora costata*) and Spotted Gum (*Corymbia maculata*) meanders across the square, connecting two remnant Sydney Red Gums within the River Amphitheatre with the existing stand of Spotted Gums in the parkland at the eastern edge of the Garden Terrace. The gnarled and crooked branches of the Sydney Red Gums provide visual contrast to the wharf shelter when viewed from the river, while the high canopy and textural, straight trunks of the Spotted Gums ensure views to the river from the Garden Terrace are retained. The tree row is partly mirrored on the southern side of the middle ramped walkway, with a row of Forest Red Gum (*Eucalyptus tereticornis*) within the planted embankment of the middle garden 'ribbon' – thereby reintroducing to the site a locally native species that is representative of the Cumberland Riverflat Forest community. The high canopy, tall straight trunk and mottled white bark of the Forest Red Gum complements the Sydney Red Gum and Spotted Gum, and together these trees evoke the sense of a 'forest walk' as the ramped walkways ascend the site.

When viewed from the river, the overlapping rows of trees within the square create the impression of a forested riverbank as backdrop to the River Amphitheatre, while densely planted native understoreys further immerse the ramped walkways into the riverbank landscape. Block

planting of flowering native shrubs and groundcovers create patterns of contrasting texture and colour along the ramped walkways, emphasising the slope of the riverbank and creating a distinctive planting display when viewed from the riverfront. The native floral display would include locally significant native plants, creating a living expression of Aboriginal cultural values. The plants selected for the display will be determined through the consultation process for the Interpretation Plan. Wherever possible, the 'ribbons' of garden also include rain gardens to capture and filter stormwater within the square. The rain gardens are located within flat areas of garden: along the northern edge of the upper square, and alongside the top of the lower ramped walkway at the Garden Terrace. Water tolerant native plants, such as Paroo Lily, Knobby Club Rush, Blady Grass, Bottlebrush and Gynea Lily, provide colour and texture in these spaces.

The edges of the square are anchored into the adjacent riverfront parklands by native garden plantings. Native tree planting within these areas feature species that provide deeper shade, such as Tuckeroo (*Cupaniopsis anacardioides*) and Brush Box (*Lophostemon confertus*). Similarly, shade protection is provided in the Garden Terrace with an ornamental flowering Pear tree (*Pyrus calleryana* 'Bradford') which, being deciduous, also provides solar access for outdoor dining during winter.



NEW PUBLIC ARTWORK

The Charles Street Square upgrade is coordinated with the establishment of a major new public artwork by artist Craig Walsh, separately commissioned by the City of Parramatta. The artwork consists of three parts, each integrated with the public domain design for the square:

- A bronze statue, posed on the River Amphitheatre in a seated position, looking out to the river
- A sandstone plinth adjacent to the bronze figure, partially embedded into the precast concrete of the River Amphitheatre
- A digital projection onto the rock face and vegetation of the escarpment on the northern bank of the river, above the Escarpment Boardwalk.

The plinth and bronze figure elements of the artwork create a striking focal point at the junction of the riverfront promenade, Charles Street Weir and the River Amphitheatre, while the projected artwork on the escarpment opposite Charles Street Square animates the riverfront at night.

The projected content would comprise a collection of video artworks that respond to the people, geography, history and perceptions of Parramatta. The video content would explore four key themes:

- Indigenous history
- First settler history
- Multicultural history
- Civic history.

The projection would be displayed for a 3 hour period on a nightly basis and cover an area of up to 30 metres wide by 10 metres high on the northern escarpment. The content of the video artworks will be further developed, including through the consultation process of the Charles Street Square Interpretation Plan, and is envisaged to evolve over time.



Artist impression of the digital projection artwork on the northern escarpment (supplied by Craig Walsh, artist)

INTERPRETATION

Meaningful and site-specific interpretation has the ability to enrich the experience of the public domain. A comprehensive Interpretation Plan is being developed as part of the Charles Street Square upgrade. Key site-specific interpretation themes under consideration include:

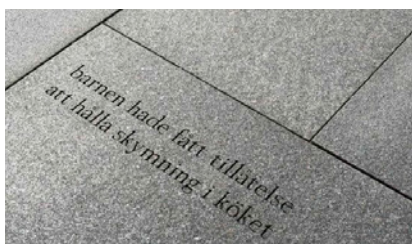
- A place of meeting (of people, of salt and fresh water)
- Aboriginal stories connected to this place on the river
- Post settlement history of the site
- The dynamic landscape experience of flood

Pending elaboration and refinement, including stakeholder consultation with Aboriginal community stakeholders, initial opportunities under consideration include:

- Dual place naming for Parramatta Quay, prominently displayed on the shade shelter at the riverfront
- Inclusion of locally occurring and/or culturally significant native plant species in the planting design
- Focus on local Aboriginal stories in the video component of the new artwork
- Embedded graphics and/or text in the precast concrete of the River Amphitheatre
- Engraved graphics and/or text in the timber seat around the fig tree at the upper square, as a gesture of 'welcome'
- Text and image based information incorporated with more conventional signage infrastructure



Potential interpretation strategies that may be explored at Charles Street Square (images from multiple online sources; copyright remains with the image owner)



4

DESIGN OPTIONS AND REFINEMENTS

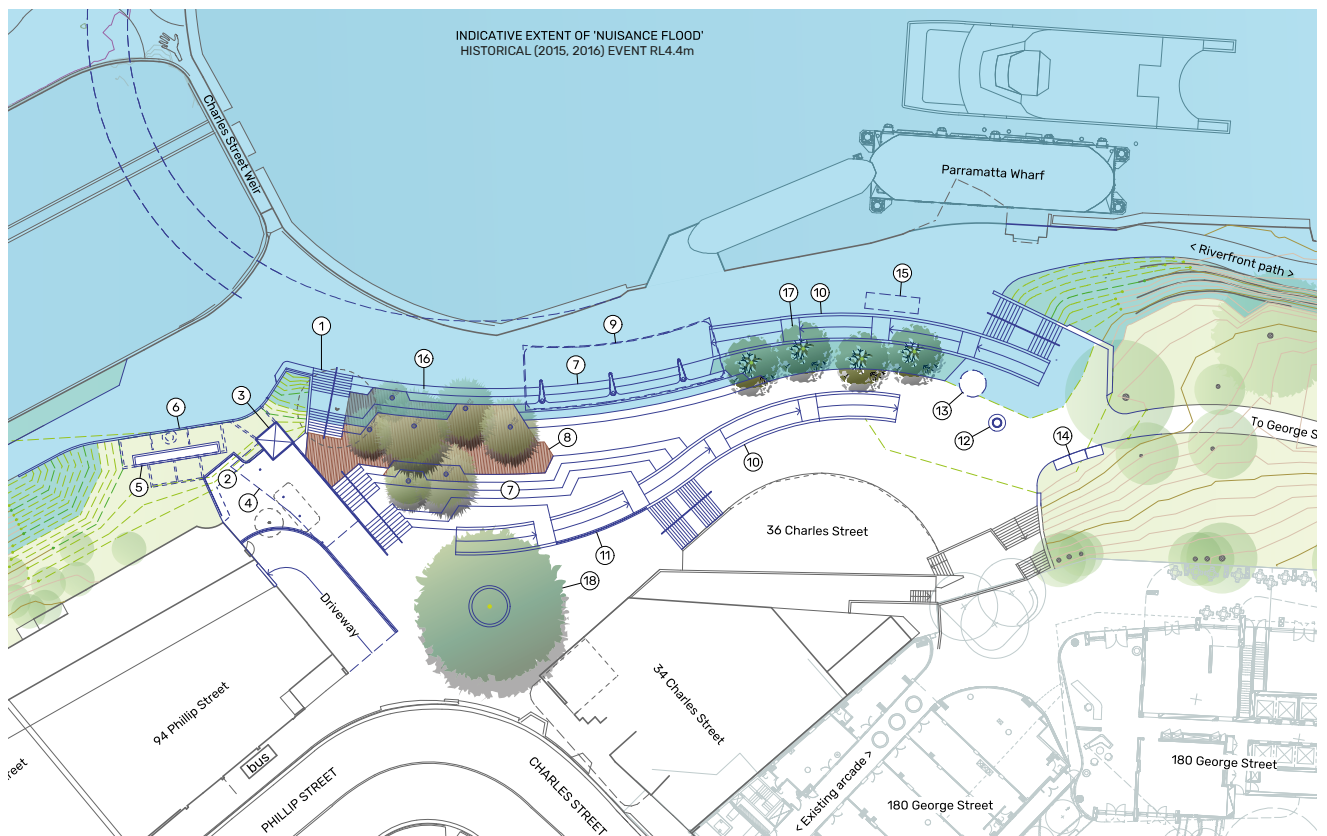
The concept design for the Charles Street Square upgrade considered two alternative options to provide access between the riverfront and the city streets: a public lift, and accessible ramped walkways. The development of these two options is discussed below.

PUBLIC LIFT

The initial design brief for the project was based on the Concept Master Plan contained in the *Charles Street Square Strategy* (Hassell, 2017), which included a public lift as the primary means by which an accessible connection was achieved between the street level and the riverfront. Concept development for the Charles Street Square upgrade investigated the feasibility and operational sustainability of the inclusion of a public passenger lift, designed to the following brief:

- Dual egress lift compliant with AS1428.2, AS 1735.12-1999 and guided by the Disability Standards for Accessible Public Transport 2002 (DSAPT 2002)
- Sized to allow use by pedestrians and cyclists
- Use of glass in both the lift car and shaft to enable passenger views and passive surveillance
- Design for a flood prone environment, informing selection and location of mechanisms and inclusion of flood proof doors or the like, at the lower level.

The design investigation concluded that a public passenger lift was not needed to fulfil the objective of universal access between the street level and the riverfront, and that the inclusion of a lift came with significant cost, ongoing operational risks, and need for additional flood protection measures.



Charles Street Square design option with public lift, March 2019

The *Charles Street Square Lift Feasibility Report* (July 2019) discusses the design, and technical and operational assessment, of the public passenger lift in detail. In summary:

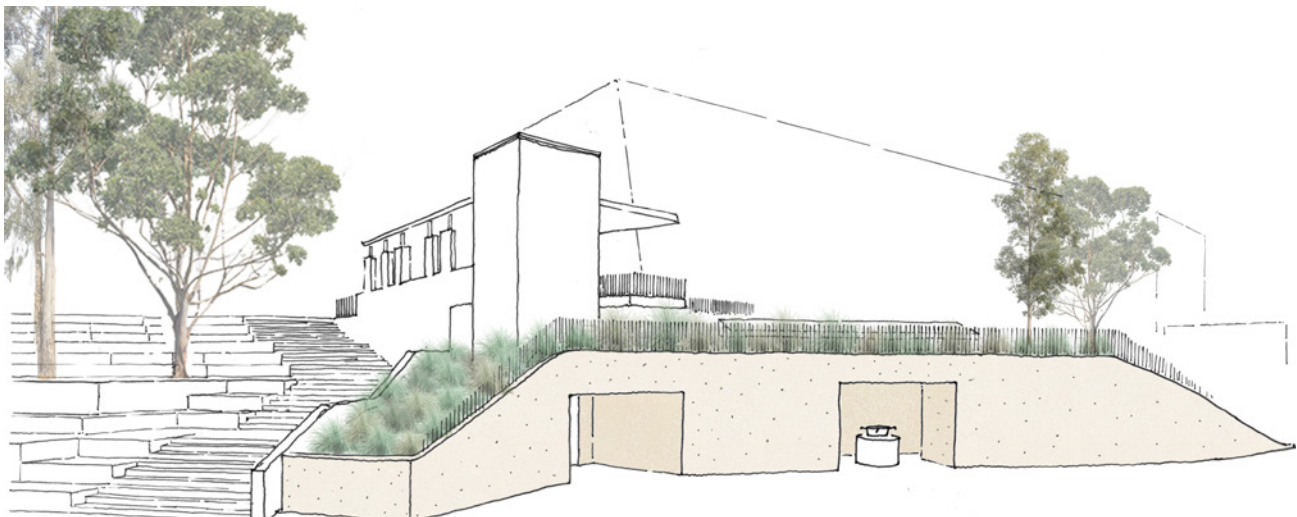
- Parramatta Council's current flood risk management strategies recommends that lift infrastructure be located above the level of the Probable Maximum Flood (PMF), which is the 1:10,000 AEP event. An alternative strategy would be to use the Flood Planning Level (FPL), which is the 1% AEP event plus 500mm freeboard. In either case, the proposal to include a lift at Charles Street Square would not comply with Council's current policies
- If a lift were to be provided to the riverfront at Charles Street Square, it would be subject to regular inundation unless flood protection and mitigation measures were provided, as the riverfront typically floods 4 to 6 times each year
- Flood protection of the lift would require installation of all electronics outside of the lift car within the top floor and overrun of the shaft. Within the lift shaft, a water presence sensor would be needed to be provided as a last-resort asset protection response for the equipment. When the sensor is triggered, the lift car would move to a predesignated level above the flood level, and open to allow passengers to alight before locking in place
- Flood mitigation of the lift would require: recessing the lift lobby into an embankment and shaping surrounding walls to direct high flows away from the lift; incorporation of drainage, sump and pump and to catch and drain away flood waters before they reach the lift; automatic flood barriers to seal the lift lobby to the height of the FPL in the event that the drainage measures are overwhelmed by flood waters; and in the event that there is a failure of the flood barriers, and

mitigation strategies put in place to minimise flood damage, including identification of repairs that might be required

- In addition to the cost of regular ongoing lift maintenance and servicing, which is likely to be higher than typical due to being located in the public domain, the repair costs associated with flooding can be substantial and will mean that the lift is out of action for a period of time whenever the site is flooded – which can be expected 4 to 6 times each year
- During a flood, the asset protection systems for the lift will mean the lift is not operational as a flood evacuation route
- Whilst there are a number of flood barrier systems available on the market, their reliability cannot be guaranteed and there are few built precedents in Australia. Furthermore, the consultant team were unable to find a built precedent that reflects the flooding conditions of the Parramatta River at the Charles Street Square site – the most similar precedent was the Fitzroy River access in Rockhampton CBD, which is expected to flood once every 5 years

A public lift would undoubtedly provide a quicker and more convenient way to navigate the total 5.6 metre height difference between the riverfront and the street level for those who are unable to use stairs. However, the insertion of a public lift at the riverfront introduces bulky infrastructure, particularly due to the additional need for flood protection, that would be more likely to adversely impact flood conveyance. Furthermore, the recessed lift lobby, required for flood protection, creates potential public safety issues due to reduced passive surveillance.

Additionally, the lift can be expected to be regularly out of operation – for routine maintenance and servicing, for asset protection during a flood, and for maintenance and



Design option for public lift at Charles Street Square, integrated with public amenities with flood barriers, March 2019

repairs after flooding. During these times, there would be no accessible route between the riverfront and the street at Charles Street Square. Critically, as the lift would not be available during flood events, there would be no accessible means of evacuation unless ramps were also provided. For these reasons, the design team determined that an alternative accessible route would be necessary – either in addition to, or instead of, a public lift.

Following the development of a design solution for ramped access that fully complies with the relevant accessibility standards (discussed below), the proposal for a public passenger lift at Charles Street Square was no longer supported by Council.

ACCESSIBLE RAMPED WALKWAYS

With respect to universal access, the Charles Street Square Strategy (Hassell, 2017) recommended that a passenger lift be installed to address the Disability Discrimination Act and provide direct access to the ferry wharf. This was based on two assumptions:

- An AS1428.1 (2009) complying ramp access would be too long, and would not comply with BCA Class 9b as it would rise in excess of 3.6m, and;
- To achieve compliance with AS1428.1 (2009) and BCA Class 9b, a lift is required as an equitable alternative to ramped access that has a rise of more than 3.6m.

However, the need to engage with existing site conditions, and maintain access and a public frontage for the lower level of the Port Bar (36 Charles Street), has created the opportunity for the Charles Street Square upgrade to provide a ramped connection between the street level

and the riverfront that complies with BCA Class 9b. The creation of the Garden Terrace, which was driven in part by the necessity of providing access and frontage for the Port Bar partway up the riverbank at RL 4.6, has also effectively divided the 'rise' to be traversed by the ramps into two shorter distances, both of which comply with BCA Class 9b – obviating the need for a passenger lift:

- From the riverfront at RL 2.0 to the Garden Terrace at RL 4.6, an elevation of 2.6 metres
- From the Garden Terrace at RL 4.6 to the upper square/street level at RL 7.6, an elevation of 3 metres.

Additionally, given the proximity and interrelated function of the ferry wharf and the square, the design has adopted the Disability Standards for Accessible Public Transport 2002 (DSAPT 2002) – which, in relation to ramped access, is equivalent to AS1428.2:1992 (Part 2: Enhanced and Additional Requirements – Buildings and Facilities). AS1428.2 requires landings at greater frequency (compared to AS1428.1) along ramps steeper than 1:20, which increases the overall length of the ramped path.

Two ramp option

The initial design for the ramped solution consisted of two ramps: a lower ramp between the riverfront and the Garden Terrace, and an upper ramp between the Garden Terrace and the upper square. The design of the ramps sought to reconcile:

- The need to minimise the length of the ramped path, which is achieved by adopting steeper grades – up to 1:14, the maximum permissible under AS1428.1 and to AS1428.2



Charles Street Square design option with two ramps, September 2019

- The desire to minimise visual obstructions throughout the square, including handrails. This is achieved by adopting flatter grades, as handrails are not required for ramped walkways at 1:20 or flatter

A number of iterations were developed, including the inclusion of lengths of ramped walkway at 1:20 to avoid the need for handrails. However, in order to minimise the intrusion of ramped access along the Port Bar's lower level frontage, the final two ramp option provided:

- A 1:14 ramp between the riverfront at RL 2.0 and the Garden Terrace at RL 4.4, with landings compliant with AS1428.2. The total length of the ramp is 37.5 metres and handrails are required on both sides in accordance with AS1428.1
- A 1:14 ramp between the Garden Terrace at RL 4.6 and the upper square at RL 7.4, with landings compliant with AS1428.2. The total length of the ramp is 43.9 metres and handrails are required on both sides in accordance with AS1428.1.

Three ramp option (the proposal)

Following review of the potential outlook impacts on the ground floor of The Port Bar due to the extent of the upper ramped walkway, a further option for ramped access was developed.

The ramp from the Garden Terrace to the upper square was moved further west to provide a wider clear frontage to the Port Bar, and a third ramp was introduced to accommodate the length of path required within the limited remaining space on site. The three ramp option provides:

- A 1:14 ramp between the riverfront at RL 2.0 and the Garden Terrace at RL 4.4, with landings compliant with AS1428.2. The total length of the ramp is 37.5 metres and handrails are provided on both sides in accordance with AS1428.1
- A 1:20 walkway between the Garden Terrace at RL 4.6 and the top of the River Amphitheatre at RL 6.5, with a single landing compliant with AS1428.1 (AS1428.2 is not applicable to walkways 1:20 or flatter). The total length of the walkway is 36.6 metres and handrails are not required under AS1428.1, although a handrail is nonetheless provided on the river side of the walkway to enhance accessibility
- A 1:20 walkway between the River Amphitheatre at RL 6.6 and the upper square at RL 7.5, with a total length of 18 metres. Although handrails are not required under AS1428.1, one is nonetheless provided on the river side of the walkway to enhance accessibility.

With a total length of ramped walkways of 92.1 metres, the accessible path provided by the 'three ramp' option is longer than that of the 'two ramp' option – which totalled 81.4 metres. However, the additional length is mitigated by the flatter grade of the two upper walkways, which are pitched at 1:20 rather than the 1:14 of the upper ramp of the 'two ramp' option.

The 'three ramp' option has been adopted as the preferred option and forms the basis of the design proposal for the Charles Street Square upgrade.



Charles Street Square design option with three ramps, February 2020

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5 CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN

The Crime Prevention and the Assessment of Development Applications guidelines (NSW Department of Urban Affairs and Planning, 2001) outlines for principles for minimising the opportunity for crime in the design of a building or place:

- Surveillance
- Access control
- Territorial reinforcement
- Space management

The Charles Street Square upgrade addresses these CPTED principles by providing surveillance, controlling access, encouraging a shared sense of ownership and robust management strategies.

Surveillance

The design provides high levels of surveillance, both passive and technical, throughout the public space in order to increase personal safety and deter crime. Passive surveillance has been achieved by maintaining clear sightlines along paths of travel and through the various spaces that make up the square, as well as between the public square and adjacent spaces – in particular, the Port Bar (36 Charles Street) and the ferry wharf. The landscape design provides an inviting character to the square, while avoiding the creation of spaces to hide or opportunities for entrapment. The planting design does not impede sight lines through the square.

Technical surveillance of the various spaces that make up Charles Street Square would be provided by CCTV. This includes cameras at the wharf shelter ferry waiting area, which would be part of the ferry wharf CCTV system.

Effective time surveillance of the public spaces is facilitated by public lighting. The lighting design of complies with the relevant Australian Standard, being AS/NZS 1158.3.1:2005 Lighting for roads and public spaces. For further detail, refer to the Charles Street Square Lighting Design Statement and Certification (June 2020).

Access control

The principle of access control aims to minimise opportunities for crime and increase the effort required to commit crime through design cues that attract, channel or restrict the movement of people through a space. The Charles Street Square upgrade achieves effective access control by:

- Providing multiple attractive spaces that encourage people to gather in the square – at the riverfront, the River Amphitheatre, the Garden Terrace, and the upper square
- Clear circulation spaces that encourage pedestrians to access the various public gathering spaces
- Controlled access to internal areas – the store room and Ferry Office have lockable doors and are restricted to ferry and Council staff only.

Territorial reinforcement

The principle of territorial reinforcement aims to reduce opportunities for crime and increase risk to criminals by encouraging the sense of community ownership of a space. Territorial reinforcement of Charles Street Square as a public space is achieved through:

- A welcoming design that encourages people to gather in the square (at the riverfront, the River Amphitheatre, the Garden Terrace, and the upper square), through a focus on a welcoming character, universal access and environmental comfort
- Clear delineation of the boundary between public and private space – the new paving in the square extends to the building edges, clearly defining the extent of the public domain
- Restricted vehicular access to the square reinforces the space as a place for people and public activity.

Space management

Linked to the principle of territorial reinforcement, space management ensures that space is appropriately utilised and well cared for. The design aims to minimise the need for, and facilitate the ease of, maintenance through:

- The choice of durable materials and finishes that can withstand the inevitable wear-and-tear of public use with minimal maintenance. Where maintenance is necessary (after severe flood damage for example), the finishes can generally be repaired on site
- Consistent application of a restricted suite of public domain furniture (bins, bollards, lights, drinking fountains), with coordinated finishes and colours, that facilitates maintenance and repair by limiting the range of spare parts required
- Ease of access to all parts of the square for maintenance staff and equipment.

6

CONCLUSION

The Charles Street Square renewal provides a high quality urban precinct, appropriate to the site's history and urban context, and befitting of its significance in the City River precinct as the arrival point and contemporary river gateway to Parramatta. Together with the recently upgraded ferry wharf, the Escarpment Boardwalk and future Charles Street Weir river crossing, Charles Street Square is an integral part of the new Parramatta Quay precinct.

The project improves amenity, legibility, identity and access for all users. The design proposal has been fundamentally shaped by the unique qualities of the place, featuring a sinuous organising geometry that responds to the shape of the river, the enclosure of the surrounding escarpment, existing and upcoming built forms, and the cultural/environmental reference point of the 'meeting place of the eels'.

The design objectives that underpin the design are:

- To create a memorable arrival and departure experience at a key gateway to Parramatta
- To create inclusive, legible and safe connections between street and river for all users – pedestrians, cyclists and people with limited mobility
- To retain and, where possible, expand the continuous level access along the riverfront promenade
- To integrate the transport interchange function of the square into the experience of the place
- To create a generous and comfortable public space that enhances the site's role as a natural meeting point for community, and enables a range of social settings and activities
- To celebrate the special qualities of the site – its cultural and heritage values, the distinctive character of the landscape
- To create a resilient and sustainable public space that avoids or minimises impact on the environment wherever possible.

The Charles Street Square upgrade provides a series of key public spaces: a generous riverfront promenade, a welcoming square at street level, a new garden terrace at mid-level, and a river amphitheatre of terraced seating. These spaces are connected by a series of stairs and ramped walkways that provide multiple clear and accessible connections between the riverfront and the city. A coordinated palette of public furniture – including multi-function light poles, bins, drinking fountains, and bike parking – reduce clutter and visually unify the public domain.

The design has been fundamentally shaped by flood resilience – through the minimisation of flood obstructions, the provision of a clear and continuous path of evacuation, and the choice of easy to maintain robust materials, finishes and detailing. Environmental sustainability measures include the use of recycled, renewable, and/or recyclable materials, rain gardens to capture and filter stormwater, and a focus on drought tolerant native plant species chosen for environmental comfort, visual amenity and potential wildlife habitat creation.

The Charles Street Square renewal improves connections between the river and the city for all users – pedestrians, cyclists and people with limited mobility. In doing so, the design concept creates a memorable experience that celebrates the special qualities of this unique point in the river. It responds to the surrounding landscape of escarpment, trees and parkland, the curving geometry of the river, the rich cultural heritage of the place, and the sense of arrival, to create a welcoming space for locals and visitors alike.