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Our Ref: 3801-22

19 December 2022

Transport for NSW

Email: sydneyharbourbridgeprojects@transport.nsw.gov.au

Re: Sydney Harbour Bridge Cycleway – Northern Access Proposal.
Response of Review of Environmental Factors Report.

This firm has been engaged by the Milsons Point Community Group to respond to the Review of Environmental Factors report currently on exhibition.

We have been requested to address issues relating to safety concerns in relation to the roundabout at Lavender Street and Alfred Street South, data included in the Traffic Impact Assessment concerning cyclist numbers and demand, the loss of car parking spaces in Alfred Street South as a result of the proposed design, traffic impacts during construction on local business and parking, architectural impacts to street scape and to reconsider an alternative design proposal with less overall impacts to the community but still achieving the desired outcome to build a cycle path connection to the Harbour Bridge.

In this letter response the following acronyms will be used as follows: -

AGRD	Austroads Guide to Road Design
REF	Review of Environmental Factors
SHB	Sydney Harbour Bridge
TfNSW	Transport for NSW
TIA	Traffic Impact Assessment

1.0 Existing Site Conditions

The Harbour Bridge Cycleway Project encompasses Bradfield Park, Lavender Street and approach to Middlemiss Street to the north, is bound by the Sydney Harbour Bridge structure to the east and along the road reserve boundary to Alfred Street South to the west and Fitzroy Street to the south.

A detailed overlay of the site and site boundary is shown in **Figure 1 - Locality Plan** produced from Nearmap imaging.

Upon our Review of Traffic Impact Assessment prepared by Arcadis and REF report we have the following comments.

1 Journey To Work Data – Active Travel

Reference is made to the modal split of work trips from the catchment area and the census data included in the Traffic and Transport Report (TIA) in Table 2.2 which shows a decline in active travel patterns from 2016 at 18% or 1,127 employees to 469 employees in 2021 and for work trips to the catchment area in Table 2.4 shows active travel of 6% in 2016 with 3043 persons to 1% in 2021 of 839 persons. Active travel can include both walking and cycling and there is no distinction made in the census data between these modes.

The cycle count data reference in the REF and TIA under cycling demand states that *"around 2000 bicycle trips are taken across the Sydney Harbour Bridge cycle way near Upper Fort Street in the Rocks."*

The location of the count data was not taken on the bridge but within Upper Fort Street. We refer to count station No 21 taken at the intersection of Upper Fort Street near the Sydney Harbour Bridge cycle ramp. In 2022 average daily volume was 627 cyclists and in 2021 the average daily volume was 527 cyclists. We have provided a summary of the count data below which is available at the Sydney of City Bicycle Count Explorer (*Bicycle count explorer*. City of Sydney Data hub. (n.d.). Retrieved December 15, 2022, from https://data-cityofsydney.opendata.arcgis.com/datasets/bicycle-count-explorer-1).

Table 1.0 Site No 21

	Cyclist Volumes		
Year	**Min**	**Max**	**Average Daily**
2022	75	1634	600
2021	123	1495	527
2020	78	1588	609
2019	115	2497	840
2018	62	2309	770

The average daily volumes are much lower than 2000 cyclists per day. These volumes are average daily volumes and do not take into account what are the peak time volumes which would typically be around 10% of the total volume. The maximum event may only occur a few times a year and is not indicative of an 85th percentile design event.

2 Cycle Routes, Peak Cyclists and Pedestrian Numbers within the Study Area

We refer to the bicycle and pedestrian count data included in the TIA report in Figure 2.7 and Figure 2.10. The count data was recorded on 10 March 2022 and the weather was cloudy but not raining with 0.2mm rain and a temperature of 23.3 degrees as recorded by the Bureau of Meteorology. Refer to Daily Rainfall (millimetres) Sydney (Observatory Hill) Station Number: 066214 for the month of March contained in **Annexure A**.

(2 continued.)

The count data recorded at Location 8 on the bridge records a total daily volume of **77** cyclists in both directions.

The volumes recorded at Site No 3 were 65 northbound cyclists and 115 south bound cyclists. There is a reduction of cyclist numbers due to through site link at Burton Street to Broughton Street where cyclists proceed to Olympic Drive or connect into the cycle paths along Broughton Street travelling to Neutral Bay.

The peak hour cyclist volumes at Site No 8 recorded on the Harbour Bridge stated **4** northbound and **6** southbound between 7:30 - 8:30 am and **8** northbound and **2** southbound between 5:45pm - 6:45pm. These are significantly low volumes and further reflects the need for travel route analysis study within the catchment area.

Our inspection of cyclists' activities on 9 December 2022 observed cyclists carrying out through site links at Burton Street and Fitzroy Street. No count data is included in the TIA report to pick up these through site links.

Pedestrian daily volumes recorded on 10 March 2022 were high with 657 pedestrians recorded southbound and 667 pedestrians recorded travelling northbound at Site No 3. Site No 6 at the entrance forecourt to Milsons Point recorded 1244 pedestrians eastbound and 1138 pedestrians westbound and Sites No 5 and No 7 also within the Milsons Point Station forecourt had 1940 pedestrians.

The TIA report does not include travel time surveys for cyclists or route analysis of cyclists' movements within the study area and connections to Kirribilli and Neutral Bay and to Lavender Bay. It assumes a focus on the existing north south bicycle route only.

3 Parking Demand

There is no parking data included in the TIA report on parking demand within Alfred Street south where there will be a loss of 15 car parking spaces as a result of the proposed design. There are 73 parking spaces located in Alfred Street South. This is a loss of 20% of total parking spaces in Alfred Street South. This will have a significant effect on available parking spaces to customers and visitors within the Milsons Point Precinct.

Further impacts upon on-street car parking will occur during the 18 months construction period. The loss of car parking will significantly impact the operational capacity of local businesses, for maintenance, customer and visitor parking, and delivery pickup.

The metered parking spaces numbered on the western side No 4655 and on the eastern side No 4767 will be removed by the proposed design.

(3 continued.)

The parking demand studies carried out by North Sydney Council between 2013-2016 show high occupancy rates. The data is included in **Annexure A** and summarised below.

Average Parking Occupancy 2013 to 2016

Meter No	9am - 9pm	9am - 11am	11am - 2pm
4655	94.8%	94.7%	95.7%
4767	84.6%	82.5%	91.8%

These spaces within the highest occupancy rates will be deleted for the proposed northern cycleway.

4 Review of Proposed Design

We refer to the design for the cycleway proposal prepared by Aspect Design Studios. This is included as **Figure 2** of this report. We have prepared a figure which shows the design superimposed on Nearmaps aerial imaging using Figures 3.2 and 3.3 from the REF document. Please refer to **Figure 3**.

4a Proximity of cycle path and access arrangement to proposed relocated pedestrian crossing

There is insufficient detail provided in the geometric layout of the proposed roundabout and pedestrian crossing detail. We assume that the roundabout is to have a mountable kerb but no specific details are provided.

The roundabout design is not in accordance with the requirements of AGRD Part 4B Roundabouts which states "*pedestrian kerb ramps should be one or two car lengths in advance of the holding line so that pedestrians crossing the road are not impeded by cars waiting on the approach."*

The design should ensure that adequate separation is provided at the exit of the roundabout of 12-24 metres. The relocation of the pedestrian crossing is in closer proximity to the circulating lane and is unsafe and unsatisfactory. The proposed planting shown in Figure 3.3 of the REF shows planting within the kerb island on the southern approach and may pose sight distance restrictions. Landscaping should be designed to ensure that sight distance is available to all road users and cyclists in accordance with AGRD Part 4B Roundabouts Part 7. Details of the proposed landscape areas are not provided in the Landscape Character and Visual Assesments Report provided in Appendix C of the REF.

This design forces cyclists to do a loop and extends their travel time. This may result in the use of the vehicle lane to continue northbound instead of diverting across Lavender Street.

No design swept path analysis has been provided in the TIA to show how buses will execute the turning movements at this intersection.

(4a continued.)

The removal of central median is unsatisfactory given the curvature alignment at this intersection.

A Road Safety Audit should be carried out of this design given the crash history at this intersection and high pedestrian volumes.

4b Bus stop relocation and proposed cycle path

It is proposed to relocate the bus stop at Lavender Street/Alfred Street south 60 metres south. It is assumed that this relocation is due to the proposed two-way cycle path proposed on the western side of Alfred Street South. This design will remove the bus stop, motorbike parking and 4 car parking spaces. Figure 4.7 in the TIA report shows a cross section of the proposed relocated bus stop and street cross section. It is proposed to reduce the road width at this point and a proposes a landscape island as shown on the eastern side. The proposed landscaping may impact sight distance of approaching pedestrians to the crossing and will reduce on-street car parking by 3 spaces.

The relocation of the Alfred Street south western/Lavender Street bus stop 60 metres south will mean that the new location will be located within the traffic lane. Figure 3-1 of the TIA report prepared by Aradis shows the proposed relocated bus stop, south of the proposed pedestrian crossing in Alfred Street and adjacent to the kerb widening. This will result in a blockage to the northbound traffic lane and will disrupt traffic flow on this approach.

The widening of the footway south of the proposed pedestrian crossing does not consider the driveway alignment to No 102-108 Alfred Street south and the impact of the new bus bay upon the access to this mixed-use building.

The bus stop relocation location has not considered all of the impacts and must be reconsidered.

4c Permanent loss of car parking in Alfred Street South

As stated in the REF report there will be the removal of 15 car parking spaces. These metered spaces are identified in **Figure 3** as a result of design changes to road layout. The permanent removal of car parking in South Alfred Street north of Milsons Point Station will have a detrimental effect on the businesses on Alfred Street and the wider Milsons Point Business community.

We know from observations and survey data prepared by North Sydney Council that metered car parking north of Milsons Point Station has a very high occupancy rate. Parking counts should have been carried out to show occupancy usage rates and included in the TIA report to substantiate the loss of parking.

(4 continued.)

4d Pedestrian Cyclist Crossings in Alfred Street South and Lavender Street

There is no specific detail to show how cyclists can use the pedestrian crossing in Alfred Street South and the pedestrian crossing in Lavender Street.

The Road Rule No 248 states: -

> The NSW Road Rule 248 "**No riding across a road on a crossing**", where there is a lack of information and specific detail of how riders are to ride on the crossing such as a parallel crossing. There are examples of in AUSTROADS (ARDG) Section 7.3.1 Road Crossings where Path has Priority over the Road" see attached but the level of detail is lacking in the REF detailed design drawings.
>
> *Road Rule 248 No riding across a road on a crossing*
> 1) *The rider of a bicycle must not ride across a road, or part of a road, on a children's crossing or pedestrian crossing*
> 2) *The rider of a bicycle must not ride across a road, or part of a road, on a marked foot crossing unless there are bicycle crossing lights at the crossing showing a green bicycle crossing light"*

There is not sufficient detail to show that the proposed cycleway is parallel or that it has a signal control system.

4e Duality of proposed cycle path and limiting catchment connections

The documentation provided prepared by Aspect Design Studios shows an additional cycle lane on the eastern side of Alfred Street as shown in **Figure 2**. This will further remove all car parking on the eastern side of Alfred Street South. These drawings are not consistent with Figures 3.2 and 3.3 of the REF report. It is unclear from the report whether the existing shared pedestrian and cycle pathway will remain along the eastern side of Alfred Street South as well as the proposed elevated cycleway structure. It appears to be a duality of providing two cycle paths providing access in the same direction.

The proposed linear arrangement of the cycle path will not allow for full accessibility of through site movement links where cyclists travelling from Kirribilli or Neutral Bay may wish to connect into the proposed pathway. The cycle path should allow for the greatest catchment of cyclists within the study area and surrounding areas.

4f Termination and commencement location of linear cycleway

We refer to Detail Plan 11.2 of Aspect Studios design and Figure 7-4 View point 2: View south along Alfred Street South, 3D model image, from the Landscape Character and Visual Impact Report prepared by Iris located in Appendix C of the REF. This drawing and image show the termination of the heritage walk in Bradfield Park North and removal of garden beds located along the SHB viaduct structure.

(4f continued.)

The design shows a removal of the pedestrian walk along the SHB viaduct structure and the funnelling of the pedestrian access across the cycleway. Cyclists would be required to give way to pedestrians; however it is unclear how this is to be achieved. There are no barriers in place on the curved section of the cycleway so pedestrians can amble across this section of the cycleway. .E-bikes can travel at 40km/hour down the linear ramp and the curved section at grade of the cycleway may not have enough length to sufficiently slow cyclists down. There is a potential safety risk to pedestrians using Bradfield North Park. A detailed speed assessment and risk assessment is required.

4g Removal of Trees and Landscape beds

There are a number of trees identified for removal in the REF report under Section 6.7.3. The report identifies 7 trees for removal. The REF states that replacement trees will be provided in accordance with Transport's Tree and Hollow Guideline 2022. We refer to Figure 6-16 "Trees to be removed and pruned by the proposal" located in the REF document. This diagram is confusing as it is not clear which trees are to be removed or pruned. Table 6-47 Trees to be removed and minimum tree replacement criteria states that the following trees are to be removed tree 2,3,27,28,29,30 and 31.

The Appendix 2 Tree Assessment Schedule from the Preliminary Aboricultural Report located in Appendix I of the REF prepared by Tree IQ, states that trees 2,3 30 and 31 are considered for retention not removal.

The poplar trees are evident in a photograph from the 1950s' installed to align with the pilasters of the viaduct structure. We refer to Figure 102 from the report Sydney Harbour Bridge Cycleway Access Project - North Supplementary Detailed Heritage Framework prepared by Tonkin Zulaika Greer for Transport for NSW 2021. A copy of this Figure is located in **Annexure B**.

The architectural drawings and landscape model images show the garden beds along the SHB viaduct structure removed. The drawings do not show what is intended along the SHB viaduct. The gardens along the viaduct are design to assist pedestrian sight lines in and out from Milson Point Train Station and to address crime prevention through environmental design or CPTED.

Sightlines, entrapment and isolation are important issues to be considered in any design proposal in order to ensure safety to all users of Bradfield Park, Milsons Point Station and within the study area.

5 Construction Traffic Impacts

The TIA report states that the construction program is 18 months. Temporary storage of facilities will affect the Boules Piste and Bowling Green facility in central Bradfield Park. The site construction containment areas are divided into three zones: north, central and south construction zone as shown in Figure 3.5 of the REF.
It is not clear whether all these zones will be contained within the first phase and there is no Construction Management Plan or Construction Traffic Management Plan provided with the response documents.

5a Loss of public space for school groups and loss of public space for outdoor activities

The containment fencing shows that the area of the bowling green and Boules Piste will not be available. This will have a significant impact on school groups that use the central Bradfield Park for recreational and educational activities. This will also have a significant impact on the Kirribilli Markets as they will be forced to relocate.

5b Loss of car parking during construction and impacts

During construction there will be a loss of parking which includes: -

- 13 spaces in Burton Street and 2 motorbike spaces for 3 months
- 15 spaces in Alfred Street South for 9 months
- 8 car parking spaces and 6 motorbike spaces on the western side of Alfred Street South for a duration of three months

There will be a **loss of 36 spaces** plus 6 motorbike spaces during construction and a possible further 15 spaces for permanent removal. There will a total loss of parking in Alfred Street South of 52% of parking spaces which is unacceptable and will have significant impacts on the community. There is no complete diagram shown in the TIA report of the impacts to parking other than Figure 4.1 which is titled Loading Zone Locations within the study area. It does not show Burton Street parking spaces affected by construction activity.

5c Relocation of the Kirribilli Markets to Ennis Road and effects to Greenway Housing Project. Effects of relocation upon market economic sustainability.

Ennis Road is an elevated roadway that runs north south alongside the Milsons Point Railway Station. It is a cul-de-sac with no turning area at the northern end. It is not a suitable location for the relocation of the markets and would require a full road closure. The markets operate once a month and in addition there are the art and design and fashion markets which would also need to be relocated. This would require Ennis Road to be closed twice a month at significant impact to businesses located along Ennis Road and pedestrian access to Greenway housing residents.

5d Public events affected by public space closures such as 7 - Bridges walk, annual Sydney marathon and Anzac Day events.

The construction containment fencing and blocking of public spaces for 18 months Bradfield Park North, Bradfield Park Forecourt and Bradfield Park Central will impact special public events such as the 7 Bridges Walk, the annual Sydney Marathon and New Years Eve Events, Boxing Day, Australia Day and Anzac Day celebrations. There are no provisions discussed in the TIA Report or REF report about the impact's construction will have on these special events and impacts to local businesses that rely on visitor numbers from these events.

5e Delays to traffic along Alfred Street South and connecting road network.

The traffic impacts do not model existing queue lengths along Alfred Street South. The SIDRA analysis is not provided in the TIA of the intersection of Lavender Street/ Alfred Street South roundabout.

Long queue delays will occur and the TIA report states that construction at the intersection will be at night time outside of the construction hours stated in the report.

There could also be delays during construction to the off ramp lane from the harbour bridge to Lavender Street and this could cause significant delays to northbound traffic and or through traffic movement westbound.

5f Lack of Construction Traffic Management and Construction Guidance Plans or Traffic Control Plans prepared for the REF.

There are no construction staging plans shown in the REF document. We have to assume that the whole boundary area will be contained and lack of detail does not allow a full disclosure of how the construction works are to be managed.

A Construction Traffic Management Plan should have been prepared for intersections in the TIA report and Traffic Guidance Plans for critical construction stages such as crane delivery of structure, pedestrian reduction plans and a plan showing all construction signage and facilities.

6 Architectural Impacts

6a Obstruction of streetscape view of Milsons Point Heritage Parapet and iconic lighting details.

We refer to the elevational detail replicated in **Figure 4** of this report and **Photographs P1** and **P2**. The proposed cycleway structure will block important streetscape elements such as the lighting details at the Milsons Point entrance and parapet detailing for some metres along the length of the structure.

The Bridge structure is of National Heritage significance and was included in the National Heritage list on 19 March 2007, listing number 00781. The key design element of the Bradfield Highway structure at Milsons Point Railway Station are important elements representative of the 1930's style 'machine and innovation

era' and are of natural architectural significance. The circular and base heavy conical columns do not have any relationship with the existing heritage structure and diminish its visual quality.

6b The proposed cycleway barrier design.

The barrier fence design which is cast structural steel assembly and resembles a heavy 'pool fence' style. It takes no visual cues from the bridge structure or resembles any of the conceptual skeletal images displayed in the design report. The barrier fence of the proposed cycleway should a have a 0.3m clearance provided to the full barrier fence and a deflection rail in accordance with AUSTROADS (ARDG) Part 6A Paths for walking and cycling Figure 5.11.

6c Impacts to heritage walk and gardens.

The heritage walk and gardens which run from Bradfield Park North to the forecourt at Milsons Point Station will be impacted by the proposed cycleway structure. The interpretation of the existing heritage building plan will be lost due to the imposition of the structure. The heritage walk and gardens are shown in **Photographs P3** to **P8** of this report and hold significant heritage value to this precinct. Photograph **P9** shows the Burton Street Arch a significant architectural feature of the SHB viaduct structure. The elevational characteristic of this archway will be impacted by the elevated linear cycleway structure.

The report Sydney Harbour Bridge Cycleway Access Project - North Supplementary Detailed Heritage Framework prepared by Tonkin Zulaika Greer for Transport for NSW 2021, shows that Bradfield Park Central was identified for future development potential. A copy of Figure 3.8 from this report is contained in **Annexure B.**

6d Visual surveillance and social impacts from proposed cycleway structure.

We refer to **Figure 4** of this letter report showing Aspect Studies elevational detail of the cycleway bridge structure.

There are potential problems which can occur with loitering under the lower section of the bridge and this could become a potential safety risk to pedestrians. There are also opportunities for persons to hide behind the large columns which have a diameter at the base of 900mm x 700mm ellipses as referenced on page 59 of the REF document.

The base is wide enough for persons to hide behind and will affect safety of pedestrians entering and exiting the Railway Station entrance particularly at night. A social impact statement has not been provided with the REF.

The column positions also appear to obstruct existing pathways as shown in Figure 7-10 3D model image from the Landscape Character and Visual Impact Report located in Appendix C of the REF.
A crime prevention through environmental design CPTED and social impact assessment (SIA) should be carried out as part of the REF report.

6e Alternative foldback design proposal

We refer to North Sydney Council's North Sydney Transport Strategy section 4.1 North Sydney's Transport Vision which proposes a number of objectives including safe travel, transport security and social wellbeing, fair access to parking.

The current REF proposed design does not meet these objectives.

From Council's website: -

"At that time Council and the community stated that rather than a band-aid solution of a ramp coming down in local streets and through vulnerable parkland, cyclists deserved a legacy project such as would be provided by dedicating a lane on the Harbour Bridge (in conjunction with capacity offsets from the new western harbour tunnel). Alternatively a lift was seen as a less intrusive short-term approach if dedicated space in the Bridge was not feasible at this time."

The linear design does not meet the objectives of the design proposal which state: -

- Achieve a high quality urban design and heritage outcome
- Provides a cycleway facility that sensitively fits with the
  - Context of the location including the potential visibility of the structure
  - Heritage values of the area
  - Architectural qualities of the Sydney Harbour Bridge
- Minimise impacts to the natural and build environment
- Minimise impacts to the community
- Deliver a cost-effective solution

The community groups prepared an alternative fold back design proposal prepared by a professional engineer and peer reviewed by Barros Van den Dool. which was not selected for the design excellence by TfNSW.

The alternative design seeks to minimise any disturbance to the heritage walk, forecourt area and elevation character of the Milsons Point Railway Station entrance. It does not require the removal of any trees or forecourt landscaping.

The design is included in **Annexure C** of this report and overlay context diagram is shown in **Figure 5**.

In summary, the heritage curtilage is substantially impacted by the proposed design and key architectural features are obscured. The proposed design poses safety risks to pedestrians and destroys the visual continuity of the Bradfield Park Northern Precinct and Heritage Walk. The proposal does not cater for east-west cycle connections and therefore caters for a reduced catchment of cyclists.

The proposed cycleway will have a substantial impact by the loss of car parking in Alfred Street South for the future and short term impacts effectively remove 52% of parking when Alfred Street South for the duration of construction work.

There are inconsistencies produced within the design report and documentation which adds to confusion about what is proposed. There is a lack of clear details concerning the proposed design and landscaping and lack of details of the proposed roundabout at Alfred Street South and Lavender Street pedestrian crossings.

Yours faithfully,

Erica Marshall-McClelland
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B.Sc.Arch.B.Arch Hons1. M.Eng. Sc. Transport RAIA Reg No 6513

Attachments: Figures 1 – 5 , Photographs P1-P9. Annexure A, Annexure B, Annexure C

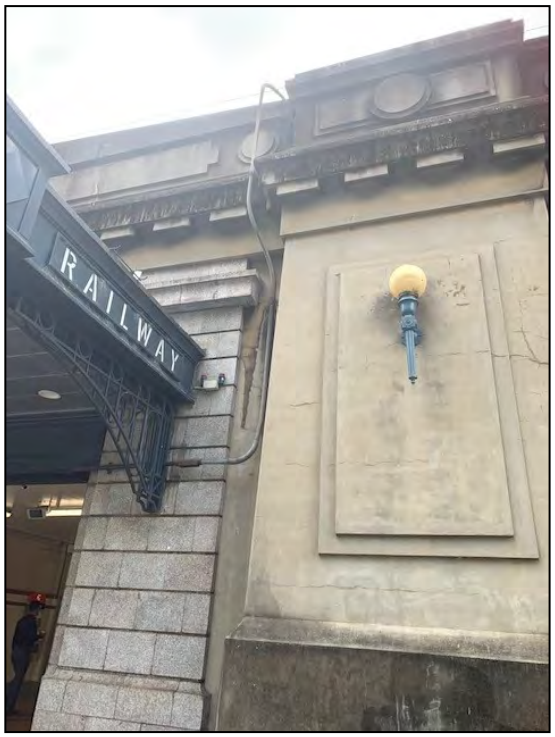


Photo P1: View of iconic lighting structure detail and parapet.

Photo P2: View of lighting detail & awning structure at entrance to Milsons Point Station.

Photo P3: View south along pedestrian walkway to station

Photo P4: View southwest along Bradfield Park North heritage walk.

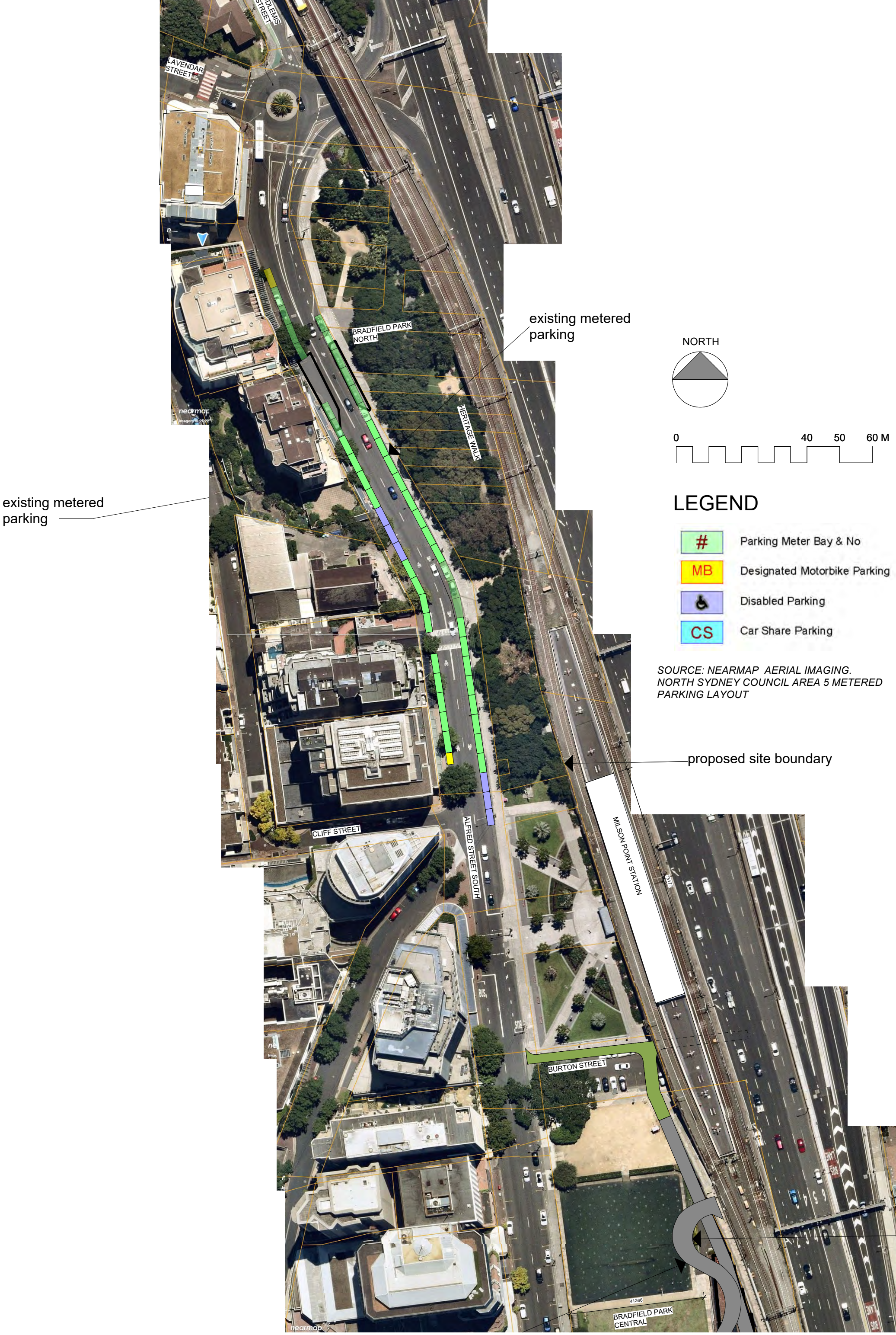
Photo P5: View south along heritage walk Poplar trees to be removed shown on left-hand side.

Photo P6: View of planter beds adjacent to bridge structure.

Photo P7: View west of heritage building outlines along heritage wall.

Photo P8: View south from Bradfield Park North along heritage walk.

Photo P9: View south from Burton Street archway and stairs to cycleway.



SOURCE: NEARMAP AERIAL IMAGING.
NORTH SYDNEY COUNCIL AREA 5 METERED PARKING LAYOUT

FIGURE 1 LOCALITY AND PROPOSED DESIGN BOUNDARY

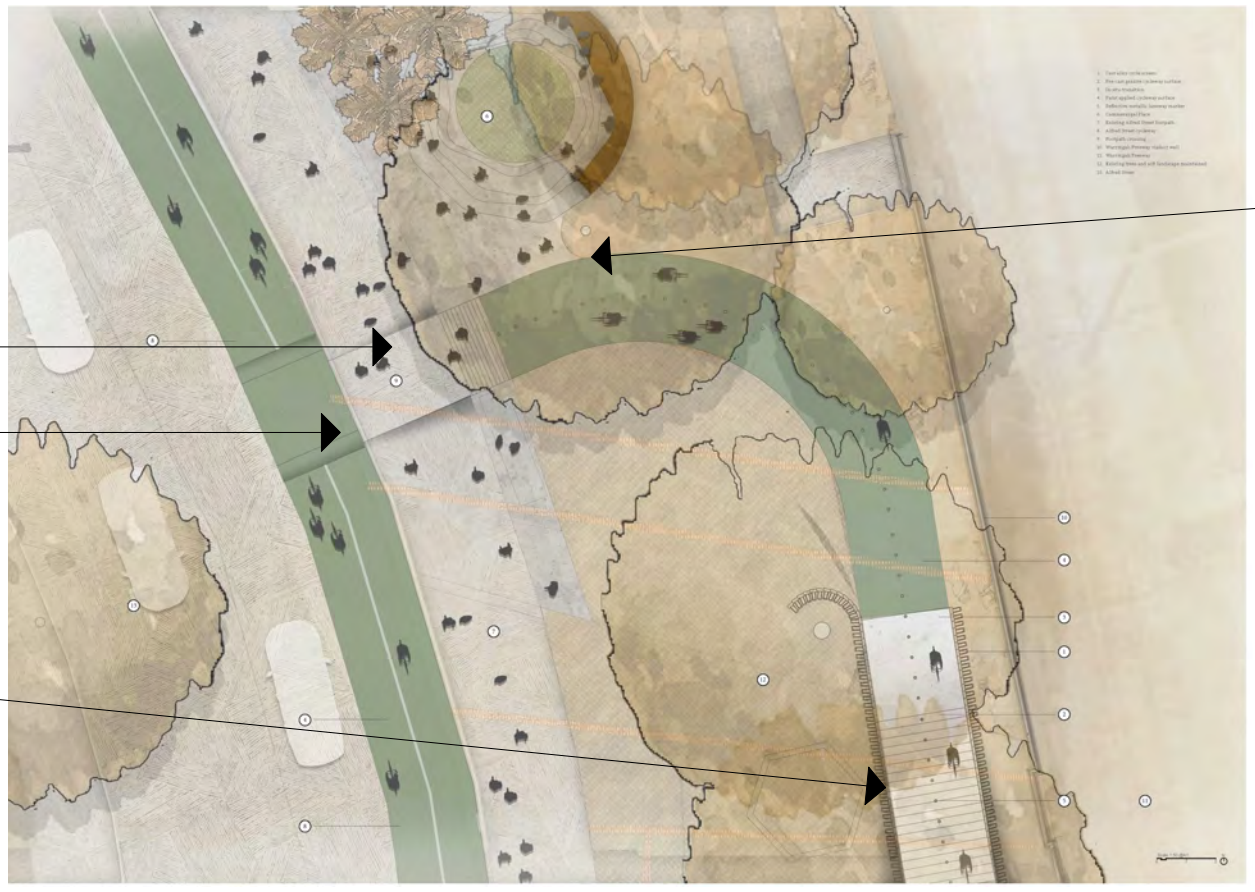


FIGURE 2 PROPOSED DESIGN DRAWINGS FROM ASPECT STUDIOS - COMMENTS

relocation of crossing only 5.5m from holding line

planting shown on design plan could obscure sight lines to intersection

removal of 4 spaces and motorbike parking

driveway to 102-108 Alfred St South

footpath widening removal of 2 spaces

existing metered parking

opportunities for loitering under structure, unsafe for visual surveliance

planting shown over road boundary

removal of 6 spaces

relocation of bus zone within traffic lane

removal of 3 spaces

column positions obstructing pedestrian pathway

NORTH

0 40 50 60 M

LEGEND

Legend

- Proposal boundary
- Project design
- Linear bike ramp
- Alfred Street South cycle path and pedestrian upgrade
- Planting
- Roundabout geometry/ location and kerb adjustment
- Widened shared path
- Pedestrian and bike rider crossing
- Railway

SOURCE: NEARMAP AERIAL IMAGING. NORTH SYDNEY COUNCIL AREA 5 METERED PARKING LAYOUT AND REF FIGURES 3.2 AND 3.3

FIGURE 3 PROPOSED DESIGN LAYOUT AND COMMENTS

FIGURE 7-5 VIEWPOINT 3: VIEW SOUTH FROM BRADFIELD PARK CENTRAL

loss of connection to between Harbour Bridge structure and Bradfield Park Heritage Walk and garden beds impacted by structure. Visual connection is lost through park due to impacts or proposed cycleway.

FIGURE 7-6 VIEWPOINT 3: VIEW SOUTH FROM BRADFIELD PARK CENTRAL, 3D MODEL IMAGE

opportunities for loitering under structure, visual surveillance obstructed

FIGURE 7-3 VIEWPOINT 2: VIEW SOUTH ALONG ALFRED STREET SOUTH

FIGURE 7-4 VIEWPOINT 2: VIEW SOUTH ALONG ALFRED STREET SOUTH, 3D MODEL IMAGE

loss of garden beds along bridge structure

termination of cycle structure obstructs pedestrian flow and sightlines through park

SOURCE:
FIGURE 7.4 FROM LANDSCAPE CHARACTER AND VISUAL IMPACT ASSESSMENT PREPARED BY IRIS

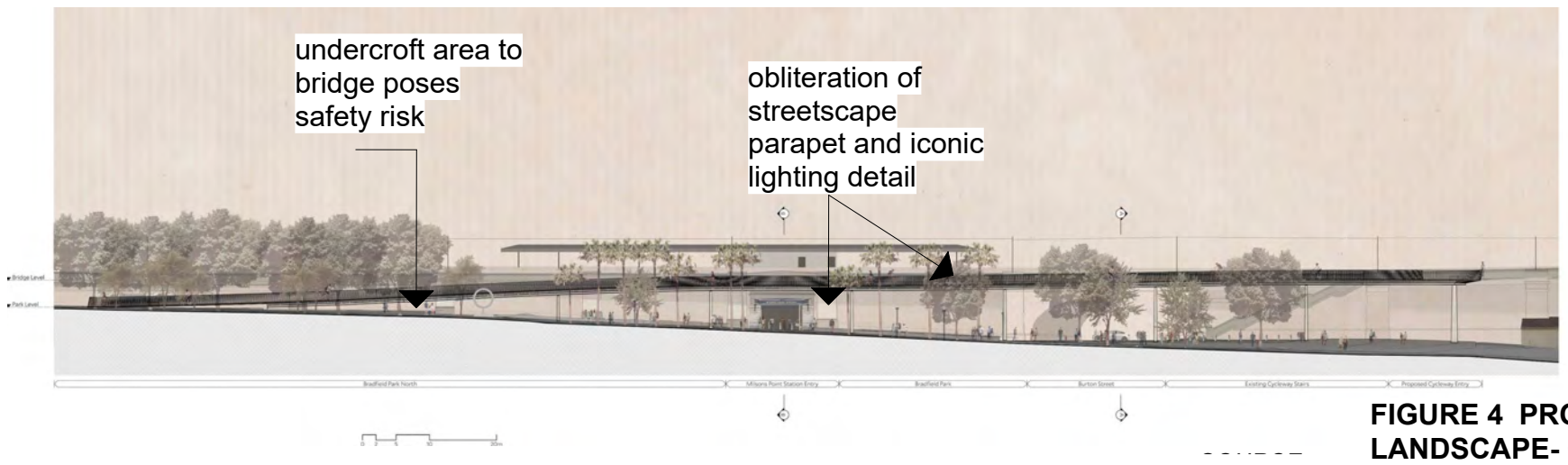


FIGURE 4 PROPOSED LANDSCAPE- COMMENTS ON CYCLE STRUCTURE AND LANDSCAPE DESIGN

existing metered parking

BRADFIELD PARK NORTH

HERITAGE WALK

NORTH

0 40 50 60 M

LEGEND

#	Parking Meter Bay & No
MB	Designated Motorbike Parking
♿	Disabled Parking
CS	Car Share Parking

SOURCE: NEARMAP AERIAL IMAGING.
NORTH SYDNEY COUNCIL AREA 5 METERED PARKING LAYOUT

proposed site boundary

CLIFF STREET

ALFRED STREET SOUTH

MILSON POINT STATION

BURTON STREET

alternative cyclepath

BRADFIELD PARK CENTRAL

FITZROY STREET

organic concept forms from aspect studios design report

FIGURE 5 ALTERNATIVE DEISGN OVERLAY

ANNEXURE A

Sydney, New South Wales
March 2022 Daily Weather Observations

Most observations from Observatory Hill, but some from Fort Denison and Sydney Airport.

Date	Day	Temps		Rain	Evap	Sun	Max wind gust			9 am						3 pm					
		Min	Max				Dir	Spd	Time	Temp	RH	Cld	Dir	Spd	MSLP	Temp	RH	Cld	Dir	Spd	MSLP
		°C	°C	mm	mm	hours		km/h	local	°C	%	8th		km/h	hPa	°C	%	8th		km/h	hPa
1	Tu	19.4	23.1	34.6	2.4	0.2				20.0	99	7	E	28	1012.9	20.5	95	7	ESE	35	1011.7
2	We	20.0	22.7	25.2	4.0	0.0	E	63	10:41	22.5	85	7	ESE	39	1010.3	21.0	96	8	E	26	1009.4
3	Th	19.7	24.9	50.8	2.4	1.3	ESE	57	16:28	21.5	98	7	SSE	24	1009.4	24.1	87	7	SSE	30	1009.0
4	Fr	21.4	26.9	19.6	2.6	6.7	ESE	48	02:09	23.2	98	6	SSE	20	1011.5	25.7	82	6	SE	22	1010.1
5	Sa	20.7	28.0	8.6	3.3	5.3	WNW	44	22:11	22.0	100	7	W	4	1008.0	26.3	81	7	ENE	19	1005.0
6	Su	20.2	24.8	33.8	5.6	0.9	SSW	56	14:08	21.1	100	8	S	30	1004.9	22.6	94	8	S	30	1006.4
7	Mo	21.1	27.8	31.4	7.2	1.0	ESE	50	04:59	23.6	97	8	ESE	17	1008.6	27.1	88	7	ESE	19	1007.4
8	Tu	21.3	22.4	95.4			SSW	80	19:53	21.5	100	8	SSW	11	1005.6	20.3	100	8	SW	28	1004.0
9	We	18.3	24.4	50.8		5.6	SSW	61	11:35	21.1	77	7	SW	24	1008.6	24.1	61	7	SSW	31	1011.3
10	Th	15.7	23.3	0.2	6.8	8.9	SSE	44	15:34	16.9	64	2	SW	13	1018.1	22.9	52	3	SSW	20	1017.0
11	Fr	15.1	24.8	0	8.0	9.9	ESE	33	14:06	16.8	80	4	W	19	1020.1	22.8	62	3	SSE	19	1019.0
12	Sa	16.8	26.5	0.2	6.0	7.9	ENE	31	13:04	18.4	92	7	WNW	13	1022.9	25.9	57	3	ENE	24	1022.0
13	Su	16.8	23.8	1.8	3.8	2.3	ESE	28	18:15	18.1	95	6	NW	11	1024.6	23.3	68	7	SE	9	1023.1
14	Mo	16.7	23.7	0.2	2.8	5.1	E	33	21:18	18.0	99	2	WNW	15	1022.4	20.4	93	6	SSW	4	1021.8
15	Tu	16.3	26.3	2.4	3.4	9.3	ESE	35	15:15	18.1	97	3	SSE	6	1022.9	25.3	57	4	ESE	24	1021.1
16	We	18.1	26.4	11.6	7.0	3.4	ESE	39	23:01	19.7	99	7	NW	9	1021.0	23.5	75	7	ESE	17	1018.7
17	Th	18.3	26.9	5.4	2.0	7.4	E	24	13:45	19.6	100	1	WNW	15	1018.6	25.9	72	7	E	19	1015.3
18	Fr	19.6	28.6	0	4.4	7.3	SSW	50	20:16	21.4	96	6	N	2	1017.0	27.5	62	4	E	19	1015.6
19	Sa	19.3	22.8	37.0	6.8	1.8	SSE	48	10:28	20.3	90	7	SE	26	1019.2	22.2	66	7	S	28	1019.2
20	Su	16.3	27.0	0.4	5.0	10.1	ESE	35	14:20	17.9	80	4	W	20	1017.6	26.5	54	1	SE	20	1015.7
21	Mo	17.8	25.9	0	7.0	7.1	S	31	11:31	19.6	80	7	W	15	1017.4	25.1	53	5	SSE	19	1015.5
22	Tu	16.1	27.7	0	2.8	10.3	NNE	37	17:20	17.8	94	2	W	13	1014.2	27.3	62	1	ENE	19	1009.1
23	We	17.8	24.3	0	5.6	2.4	S	46	12:53	22.5	87	7	S	24	1008.7	23.1	74	7	SSE	26	1010.9
24	Th	18.5	21.7	1.6	5.8	0.2	SE	31	03:54	18.7	95	8	WSW	6	1016.7	20.3	92	8	NE	11	1015.7
25	Fr	17.6	24.6	16.6	1.4	2.1	ESE	48	21:47	18.9	100	7	W	9	1019.1	22.9	76	7	SSE	13	1019.0
26	Sa	17.9	22.5	8.4	2.8	0.8	ESE	43	05:58	19.8	87	7	SSE	2	1022.0	21.3	75	7	ESE	22	1020.3
27	Su	16.7	22.9	1.8	2.8	0.0	ESE	44	10:56	18.1	99	7	W	13	1020.0	22.6	84	8	SE	11	1017.0

Date	Day	Temps		Rain	Evap	Sun	Max wind gust			9 am						3 pm					
		Min	Max				Dir	Spd	Time	Temp	RH	Cld	Dir	Spd	MSLP	Temp	RH	Cld	Dir	Spd	MSLP
		°C	°C	mm	mm	hours		km/h	local	°C	%	8th		km/h	hPa	°C	%	8th		km/h	hPa
28	Mo	18.1	25.4	14.2	1.2	3.0	SSE	31	21:17	19.4	100	7	WNW	9	1013.7	24.0	78	7	ESE	17	1012.0
29	Tu	19.4	23.4	57.4	3.4	0.3	SW	39	05:49	20.2	100	8	S	6	1012.2	22.5	89	8	ESE	6	1010.6
30	We	18.4	23.5	27.6	1.8	3.1	SSW	50	16:18	20.3	100	6	SSW	13	1010.8	22.6	81	7	SSW	28	1008.8
31	Th	18.1	21.5	17.0	5.0	1.3	SSE	76	14:08	18.5	82	7	SW	17	1013.4	21.5	69	8	SSE	37	1014.4
Statistics for March 2022																					
Mean		18.3	24.8		4.2	4.2				19.9	92	6		15	1015.2	23.6	75	6		21	1014.1
Lowest		15.1	21.5	0	1.2	0.0				16.8	64	1	#	2	1004.9	20.3	52	1	SSW	4	1004.0
Highest		21.4	28.6	95.4	8.0	10.3	SSW	80		23.6	100	8	ESE	39	1024.6	27.5	100	8	SSE	37	1023.1
Total				554.0	123.1	125.0															

IDCJDW2124.202203 Prepared at 13:00 UTC on Friday 9 December 2022

Source of data

Temperature, humidity and rainfall observations are from Sydney (Observatory Hill) {station 066214}. Pressure, cloud, evaporation and sunshine observations are from Sydney Airport AMO {station 066037}. Wind observations are from Fort Denison {station 066022}.

Sydney Airport is about 10 km to the south of Observatory Hill.

You should read the **important information** in these notes.

Other formats

To **print** this page, get the PDF version (one page, 45 kb).

To use this page in a **spreadsheet**, get the plain text version (4 kb).

Other times and other places

The **last 14 months** of Daily Weather Observations for Sydney, New South Wales are also here on this web site:

Dec 22 Nov 22 Oct 22 Sep 22 Aug 22 Jul 22 Jun 22 May 22
Apr 22 Mar 22 Feb 22 Jan 22 Dec 21 Nov 21

Daily Weather Observations are also routinely prepared for hundreds of **other locations** in New South Wales and across Australia. To get other months or places not on this web site, contact us.

Climate statistics

If you are after **long-term averages** relevant to Sydney, New South Wales, look at the tables for Sydney (Observatory Hill), Centennial Park Round House or Sydney Airport AMO.

Maps and tables of average conditions for locations across Australia are also available.

More information

If you are using these pages, you are deemed to have understood the **important information** in these notes. They cover how the data are obtained, how they are processed, and what each column means.

If you have **any questions** about this product, or you want any other weather or climate information, please contact us.

Parking Meter Area 5

Map 2 of 3

LEGEND

ACTIVE METERS & BAYS

- 1234 — Parking Meter & No
- # — Parking Meter Bay & No
- MB — Designated Motorbike Parking
- Disabled Parking
- CS — Car Share Parking

TEMPORARILY INACTIVE METERS AND BAYS

- 1234 — Inactive Meter & Bays
- Work Zone
- No Stopping Zone
- No Stopping Zone (Timed)
- Long-Term Council Project/Other

Alfred Street South (ALS)

DISCLAIMER – Please note that this is an internal Council file extracted from meter occupancy data. Council requests that this file/document is not redistributed. Council takes no responsibility for any omission or inaccuracies contained within this information.

		AM from 9am to 11am - AVERAGE 2013 to 2016		PEAK from 11am to 2pm - AVERAGE 2013 to 2016		PM from 2pm to 6pm - AVERAGE 2013 to 2016	
	Meter IDs	% Occupied	% Not Occupied	% Occupied	% Not Occupied	% Occupied	% Not Occupied
Alfred Street South Occupancy % between 2013-2016	**4633**	39.4	60.6	48.7	51.3	16	84
	4644	72.6	27.4	79	21	58.5	41.5
	4655	94.7	5.3	95.7	4.3	95.8	4.2
	4734	82.3	17.7	91.5	8.5	68.3	31.7
	4745	69.1	30.9	82.1	17.9	70.8	29.2
	4767	82.5	17.5	91.8	8.2	77.4	22.6
		73.4	26.6	81.5	18.5	64.5	35.5

	ALL TOTAL from 9am to 9pm - AVERAGE 2013 to 2016	
Meter ID	% Occupied	% Not Occupied
4633	39.9	60.1
4644	73.6	26.4
4655	94.8	5.2
4734	84.2	15.8
4745	74.9	25.1
4767	84.6	15.4
	75.3	24.7

ANNEXURE B

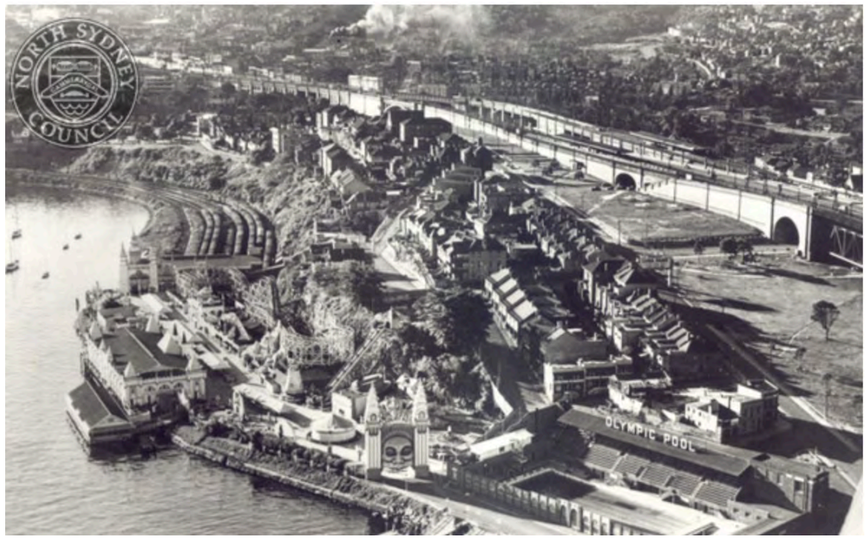


Figure 99: View of Milsons Point from Sydney Harbour Bridge, 1939.

Source: Image courtesy Stanton Library Historical Services. Available online.

Figure 101: Bradfield Park adjacent to Milsons Point Railway Station, photograph by Robin Cale 1937.

Source: Image courtesy Stanton Library Historical Services. Available online, Call Number: LH REF PF274.

Opportunities relating to Heritage Interpretation

Whilst Dawes Point is the location suggested in the Interpretation Plan for stories related to indigenous occupation there is an opportunity to enhance the existing interpretation and tell place specific stories related to Aboriginal culture and the natural landscape prior to settlement within Bradfield Park.

Aboriginal Themes identified in the *Sydney Harbour Bridge Cycleway Access Program, Aboriginal Design Principles* report prepared by WSP in 2021 include:

- Rainbow Serpent narrative.
- Bridging between Earth and Sky.
- Important totems.

Figure 100: Bradfield Park, Milsons Point, looking north near Milsons Point Railway Station, c1950. Note the cycleway stairs on the right hand side and the row of Poplar trees adjacent to the approaches of the bridge in the northern section of the park.

Source: Image courtesy Stanton Library Historical Services. Available online, Call Number: LH REF PF443.

Figure 102: Northern end of Bradfield Park near Bradfield Highway exit to Milsons Point, c1950. Note the row of Poplar trees positioned to align with the pilasters of the bridge approach.

Source: Image courtesy Stanton Library Historical Services. Available online, Call Number: LH REF PF444.

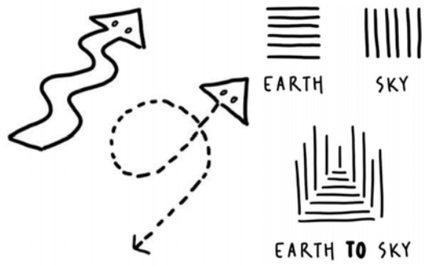


Figure 103: Rainbow Serpent narrative.

Source: WSP, Sydney Harbour Bridge Cycleway Access Program, Aboriginal Design Principles, 2021, p.15.

Figure 104: Bridging between Earth and Sky.

Source: WSP, Sydney Harbour Bridge Cycleway Access Program, Aboriginal Design Principles, 2021, p.15.

Figure 105: Important totems.

Source: WSP, Sydney Harbour Bridge Cycleway Access Program, Aboriginal Design Principles, 2021, p.15.

3.8 Heritage Opportunities

3.8.1 Design Opportunities

There is potential for changes or development within the Bradfield Park site that could produce a positive heritage impact on the significance and setting of the Sydney Harbour Bridge and Milsons Point Station whilst also improving the public domain.

1. Bradfield Park Central is located outside the curtilage of the Sydney Harbour Bridge, Milsons Point Station and the LEP listing for Bradfield Park. Former Kirribilli Bowling Club is not listed as a heritage item. This provides a potential site for a sympathetically designed new built element.
2. There is an opportunity to enhance views from the cycleway towards the Sydney Harbour Bridge and the harbour by providing a high level viewing platform.
3. Views could be enhanced through sympathetic interpretive landscaping. Potential to implement Designing with Country principles - the Country was once Eastern and Northern Banksia Scrubland.
4. There is an opportunity to retain and conserve the original cycleway stairs with minimal change.
5. There is an opportunity to introduce a new built element, separated from the SHB, with minimal impacts to original fabric.
6. There is an opportunity to reinstate the Bradfield ground plan which in turn would improve views to the approaches to the Sydney Harbour Bridge from Alfred Street and Bradfield Park by relocating the North Sydney Council building.
7. There are opportunities for enhanced heritage interpretation relating to the natural environment and Aboriginal cultural themes. Any significant fabric required to be removed could be relocated and interpreted in Bradfield Park.

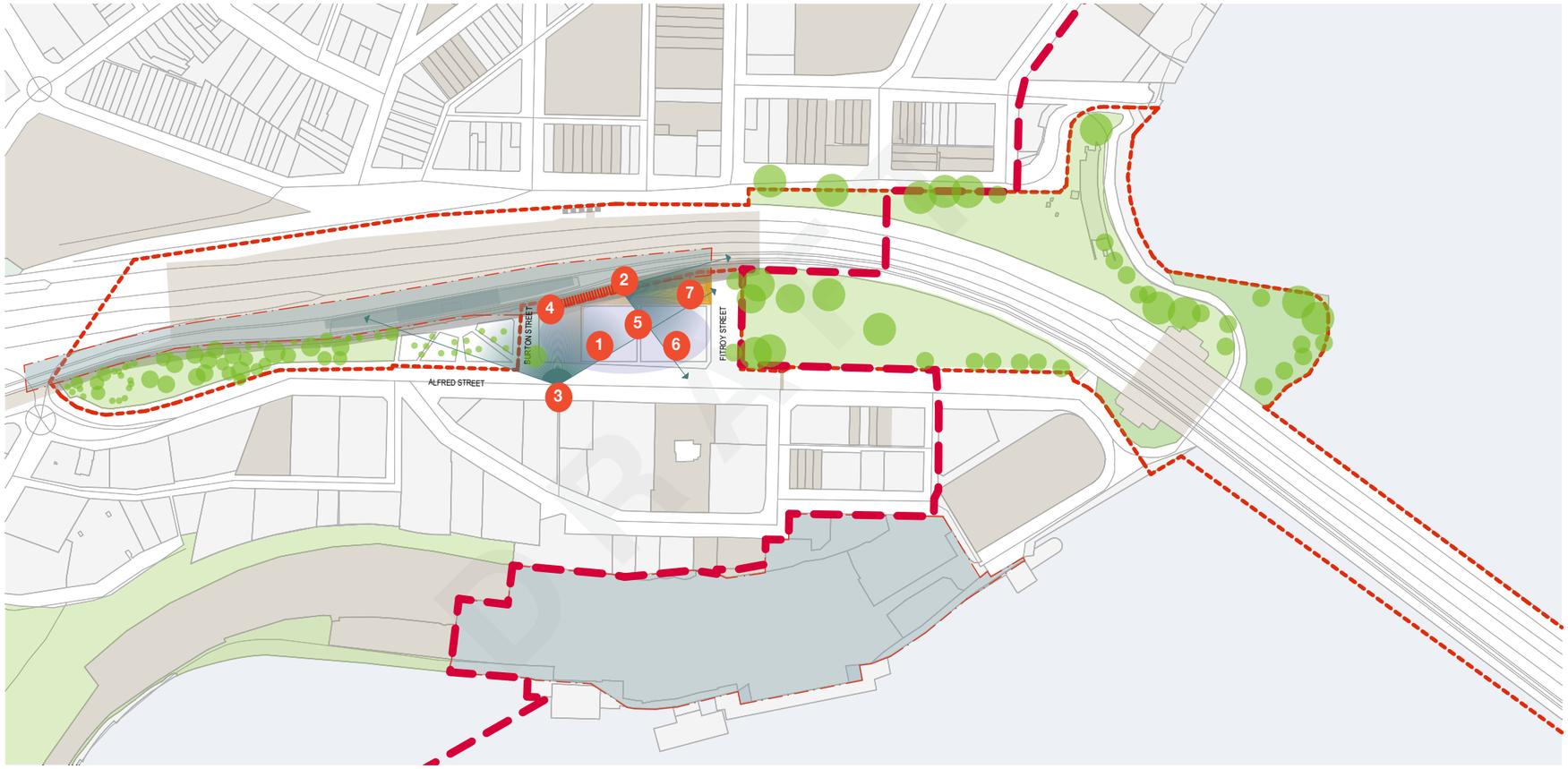


Figure 110: Sydney Harbour Bridge - Northern Cycleway - Summary of Heritage Opportunities.
Source: TZG Architects, 2021.

ANNEXURE C

- Functional cycle access and movement for local and commuter cyclists
- Low speed access, not a velodrome track
- Ramp length 190m, including 20m midrise landing; total rise 8.8m
- Gradients: Ramps -2 x 80-83m @ 1:20,
  Landings - 5m top & 20m midway@1:36
- Width 4.0m min, 5.9m max
- No impact on Heritage Bradfield Park North or Station Forecourt
- No impact on existing courts and plaza
- No impact on views of Bridge Structure

BURTON ST TUNNEL CYCLE PATH TO EAST

BOTTOM LANDING +33.80

55 STEPS HARBOUR BRIDGE

SYDNEY HARBOUR BRIDGE CYCLEWAY

GRADIENT 1:40 APPROX

+28.49 EX

NEW STAIRS

OUTLINE OF EXISTING BUILDING TO BE REMOVED

MID RISE LANDING

42.60

1:20

1:36

+42.45

37.95

38.45

NEW PLAZA

NEW PLAZA

33.80+

33.50 EX+

NEW ACCESS TO COURTS

+33.80
EXISTING PLAZA

+32.50
EXISTING COURT

+32.50
EXISTING COURTS,
PLAZA & PATHS

FITZROY STREET

BURTON STREET

+33.33 EX

NEW AMENITIES

+33.35 EX

+33.20 EX

+32.92 EX

+32.50

+31.15 EX (PATH)

+29.51 (PATH)

ALFRED STREET

STREET GRADIENT 1:20 APPROX

STREET GRADIENT 1:30 APPROX

STREET GRADIENT 1:16 APPROX

BUS LANE

SCALE 1:400
0 4 8 20m

PROPOSED CONCEPT PLAN FOR CYCLE ACCESS AT BRADFIELD PARK CENTRAL