

3 December 2018

Ms Jennifer Concato
Manager City Strategy
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Architecture
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Cc: Jonathan Carle - jcarle@cityofparramatta.nsw.gov.au
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Parramatta Square - Overshadowing

Dear Jennifer,

This letter has been prepared by Architectus on behalf of the Anglican Church Property Trust Diocese of Sydney, the owners of St John's Cathedral, Parramatta, and surrounding land in relation to the recent amendment to *Clause 7.4 – Sun access* of the Parramatta Local Environmental Plan (LEP) 2011.

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This letter has been prepared following discussions with the Department of Planning and Environment (DPE) in relation to the recent change to *Clause 7.4 – Sun access* of the Parramatta LEP 2011. We have been advised by DPE that the recent change, which implicitly provides a year-round protection between 12pm-2pm to the protected area of Parramatta Square, was intended as a temporary measure while further detailed analysis of solar access to public open space in the Parramatta City Centre is undertaken. DPE advised that they recognise that this control will need to be modified through the Parramatta CBD Planning Proposal process, once Council has undertaken further analysis. We have previously met with Council in relation to this matter in April 2018. Given the recent change to Clause 7.4 and our following discussions with DPE, we would appreciate the opportunity to meet with you again to further discuss the matter.

Adelaide
Auckland
Brisbane
Christchurch
Melbourne
Sydney

It is Architectus' view that the appropriate control for Parramatta is the protection of sunlight to valuable public open space between 12pm-2pm on 21 June of each year. This control will protect solar access at the time of year when it is most valued and will also inherently ensure adequate sunlight throughout the year, without unduly impacting on the development capacity of the City Centre.

This letter provides recommended amendments to Clause 7.4 which:

- Ensure consistency and certainty in the planning system by clarifying that the 'no additional overshadowing control' for Parramatta Square is intended to apply at 21 June (midwinter), consistent with Council's policy position on this matter since 2001;
- Protect sunlight to the protected area of Parramatta Square at midwinter when it is most desirable, and in doing so, ensure that the broader Square achieves desirable levels of sunlight throughout the rest of the year protection of sunlight levels to the Square at other times of the year;
- Provide a control which does not unduly impact on development capacity in the Parramatta City Centre;
- Provide a control which is practical to calculate and manage – which is understood by one linear plane and a single shadow diagram, where alternatively, periods of time require complex curving planes and many sets of diagrams, complicated even further by the application of daylight savings time; and

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- Implements a control which will prevent buildings north of Parramatta Square from projecting above a sun access plane (defined by the 12pm-2pm midwinter sun angle) to the Square and thereby preventing irregular, contorted built form which has been designed to avoid overshadowing on a single day of the year.

This letter should be read in conjunction with the following documentation:

- **Attachment A:** Timeline detailing policy developments in relation to overshadowing of Parramatta Square
- **Attachment B:** Presentation of 28 November 2018 to Department of Planning officers in relation to overshadowing of Parramatta Square.

Background

Policies in relation to protection of solar access to Parramatta Square have been in place since the gazettal of the *Sydney Regional Environmental Plan No 28 – Parramatta* in 2001, and have been subject of frequent and evolving change since 2014, as detailed in the timeline provided at **Attachment A**. Prior to the final Council officers report in relation to the site-specific planning proposal for the Greenway Plaza (responding to Architectus' submission seeking clarification that the intent of the no overshadowing control was to apply at 21 June) there has never been a reference to protection of sunlight to Parramatta Square for any dates outside of mid-winter

The recent amendment to *Clause 7.4 - Sun access* of the Parramatta LEP 2011, associated with the finalisation of the Planning Proposal for the 220-230 Church Street and 48 Macquarie Street, Parramatta ('Greenway Plaza'), imposes a restriction on overshadowing of Parramatta Square as a year-round control. This is considered a blunt instrument that does not adequately consider the implications of sun access protection across a broader range of dates than 21 June. The control would, if applied across the range of public open spaces in the Parramatta City Centre, result in a reduction of approximately 200,000sqm of gross floor area (GFA) in the Centre.

Planning Proposal for 220-230 Church Street and 48 Macquarie Street, Parramatta (Greenway Plaza)

On 17 June 2016 a Gateway determination was issued for the Greenway Plaza Planning Proposal. Conditions of the Gateway determination included:

1. *Prior to exhibition, Council is to amend the planning proposal to:*
 - (a) *Amend the explanation of provisions to indicate that the planning proposal will:*
 - i. *Amend clause 7.4 Sun Access, to ensure no overshadowing occurs between 12pm – 2pm of the protected area of public domain within Parramatta Square*
 - ...
2. *Community consultation is required under sections 56(2)(c) and 57 of the Environmental Planning and Assessment Act 1979 ("EP&A Act") as follows:*
 - ...
- (c) *Figure 4.3.3.7.3 of Parramatta Development Control Plan 2011 is to be included within the exhibition materials*

Figure 4.3.3.7.3 of the Parramatta Development Control Plan (DCP) 2011 is provided at **Figure 1** overleaf. It is noted that Figure 4.3.3.7.3 states "no overshadowing between midwinter 12PM – 2PM".

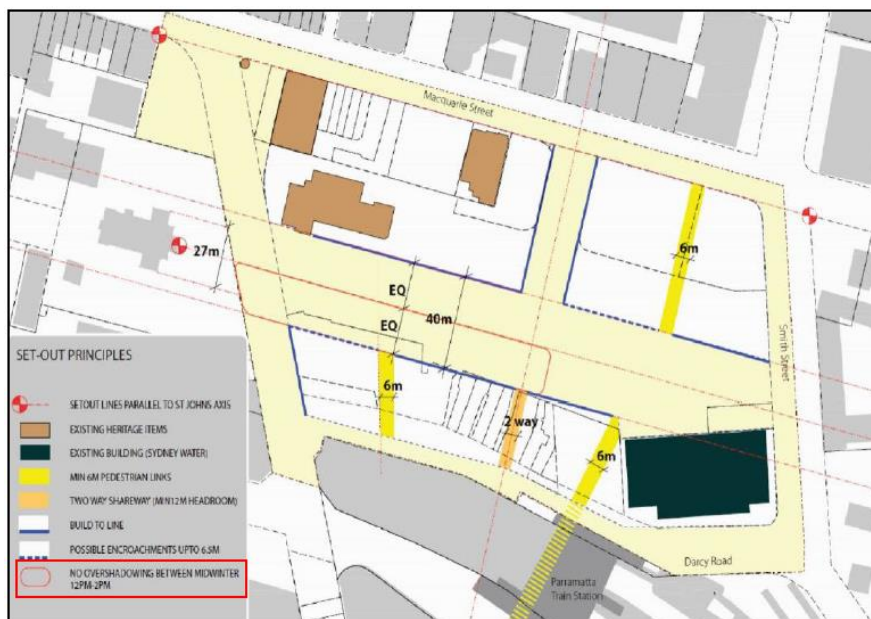


Figure 1 – Extract from Parramatta DCP 2011 (Figure 4.3.3.7.3) – Red outline added to highlight that control was based on midwinter.

On 12 July 2016, a short time after the Gateway determination was issued, an article was published in the Sydney Morning Herald by Lucy Turnbull, Chief Commissioner of the Greater Sydney Commission, stating:

*“Our recent decision to protect sunlight in the middle of the day **in winter** at the new Parramatta Square by imposing a condition on solar access on the proposed rezoning for 48 Macquarie Street reflects this. The commission will unashamedly champion growth that improves the city and it will challenge growth that puts the quality of our public spaces at risk.”*

It is Architectus’ view, based on the above and in requiring that Figure 4.3.3.7.3 be publicly exhibited with the Planning Proposal, that the Gateway condition was intended as a mid-winter control, despite not specifically stating this.

Architectus made a submission during the public exhibition of the Greenway Plaza Planning Proposal seeking that this matter be clarified and highlighting inconsistencies with how the overshadowing control was being expressed by the Planning Proposal. On 9 April 2018 a report was prepared for and considered by Council which refuted that there was inconsistency in the exhibited material and stated in relation to the Architectus submission:

*“Council officers do not consider it reasonable to restrict solar access to the protected area in Parramatta Square to mid-winter. **It is not considered it was the intention of the Gateway Determination made by DPE on 17 June 2016.**”*

Architectus believes the officer’s conclusion on this matter are at odds with the comments made by Lucy Turnbull shortly after the issue of the Gateway determination. Additionally, it is noted that stipulating a single day of the year does not mean protection is provided only on that day. By stipulating 21 June, sufficient protection will be provided to ensure sunlight to the Square throughout the year.

Controlling solar access

The sun is rarely in the same position in the sky for the same time of day for each day of the year (in fact, the sun is only in the same position at 12 noon on April 14 and August 31). The midwinter specific date control is a balance of protecting sunlight amenity and providing for development potential for the city centre. For over 20 years this has been the balance struck for

major public spaces in Central Sydney and has widespread community support. There is little point in protecting sunlight in summer months when people seek shade.

It is noted that in the City of Sydney there are two forms of sunlight protection:

- 21 June (mid-winter); and
- Any date between 14 April and 31 August.

Importantly, and of relevance to any change to Parramatta's overshadowing controls, the latter control was applied only to small spaces which were already considerably overshadowed at mid-winter and for which there was little value in a mid-winter only control, such as the Town Hall Steps. Existing density in Parramatta is considerably less and there are far fewer tall buildings than in Central Sydney at the time these controls were introduced. Accordingly, it is considered appropriate that for Parramatta a mid-winter control only is appropriate and represents good planning to ensure solar access to Parramatta's public open space into the future.

St John's Planning Proposal

In 2016, the owners of the St John's Anglican Cathedral approached Architectus to assist initially with an analysis of their site and its capacity for change, and subsequently for the preparation of a Planning Proposal in relation to the land surrounding the Cathedral. Importantly, at the time, Council's '45-minute rule' applied with respect to overshadowing of Parramatta Square. This rule means that no overshadowing is to occur upon a nominated part of Parramatta Square during 12pm-2pm on June 21 except for up to 45 minutes during that time. Despite this, the Planning Proposal was prepared on the basis of no overshadowing of the Square between 12pm-2pm midwinter and not taking advantage of the 45-minute rule. Architectus agrees that the Square should be provided with a greater level of protection than is provided by the 45-minute rule, which did not properly account for potential cumulative impact of development. It is understood that this has similarly been the view of the DPE, Council officers, and the Greater Sydney Commission (GSC).

In Architectus' view, the right control for sun access to Parramatta Square is no overshadowing for a specific date and time of 12pm-2pm June 21. This has been the long-running policy of Council in relation to all protected public spaces in the City Centre – up until the introduction of the 45-minute rule for only Parramatta Square.

The Planning Proposal for St John's Cathedral, lodged with Parramatta Council on 29 May 2018, provides a built form which does not overshadow the protected area of Parramatta Square between 12pm-2pm at mid-winter. As illustrated in the presentation prepared for DPE officers and provided at **Attachment B**, the built-form will result in some overshadowing of the protected area of the Square at other times of the year, although at those other times of year, large areas of the square are in sun – sun which will continue to be protected by a 12pm-2pm midwinter control. In Architectus' view, this is an acceptable impact given:

- A restriction on buildings projecting above the 12pm-2pm mid-winter sun angle within the area designed 'Area 3' will provide adequate protection of the Square throughout the year and mean there is limited possibility of cumulative impact by clarifying the date on which the control applies;
- The Planning Proposal includes the provision of an additional public square, linking to, and interrelated with, Parramatta Square and Centenary Square, such that throughout the day and year, areas of direct solar access will be provided to these spaces. The new square will provide an appropriate setting for Australia's oldest continuously operating European parish and now Cathedral; and
- The Planning Proposal seeks to deliver a high-quality commercial office building on the site which will contribute to the economic and employment growth of Sydney's Central City, which has been designed to minimise impacts on the Square, and which will

establish a 100-year Masterplan for the Cathedral's ongoing operation and connection to the site.

The year-round control which has recently been applied would preclude the development of the St John's land, which proposes to provide substantial public benefits, including a new publicly-accessible square, as well as approximately 45,000sqm of leasable office space, making a substantial contribution to the economic and jobs growth of the Parramatta City Centre.

Recommendations

Architectus recommends that, through the Parramatta CBD Planning Proposal, sun access protection for Parramatta Square be confirmed to apply to 12pm-2pm mid-winter June 21 through the implementation of a control similar to Clause 6.17 of the Sydney LEP 2012. This control will ensure direct solar access at the time of year when direct sunlight is most welcome and allow for a balance of sunny and shady spaces at other times of the year, when direct sunlight is commonly not desirable. Additionally, this control does not unduly restrict development capacity of the Parramatta City Centre. A mid-winter control has the following benefits:

- Simple and practical to understand, check and implement - for Council as well as landowners (particularly if issues such as daylight savings time are considered);
- Protective of sun to public spaces at times of the year when sun rather than shade is sought;
- Consistent with Council's long-established position for this space and other sun access planes (existing and proposed) in Parramatta and market understanding;
- A balanced approach between amenity and development potential; and
- Enables a desirable and commercially viable built form outcome for the St John's Proposal with negligible change to winter sun.

The clause would create a sun access plane (defined by the angle of the sun between 12pm-2pm) protecting sun access to the square in midwinter and importantly, would state that no part of a building is to project higher than the sun access plane. This clause will satisfy Council's concerns that stipulating a single date allows sites to the north of the Square to propose irregular, contorted built forms that avoid overshadowing on 21 June, but result in adverse impacts throughout the rest of the year. The below is an example of how sun access plane controls may be applied in Parramatta:

7.4 Sun access

(1) The objective of this clause is to protect public open space in Parramatta Square, the Lancer Barracks site and Jubilee Park from overshadowing.

(2) This clause applies to land identified as being in 'Area 2' [with an associated amendment to the height of buildings map to consolidate existing 'Area 2' and 'Area 3'] on the Height of Buildings Map.

(3) The consent authority must not grant development consent to the erection of a building on land in 'Area 2' on the Height of Buildings Map if the development will result in any building on the land projecting higher than any part of a sun access plane taken to extend over the land under this clause.

(4) Each of subclauses (5) – (7) describes a different sun access plane that is taken to extend over land. The front of each plane is a line between two specified points (X and Y) and for the purpose of these controls the following horizontal and vertical angles are used:

(a) June 21 – 12pm is a horizontal bearing of 359.0 degrees and a vertical angle of 32.7 degrees

(b) June 21 – 2pm is a horizontal bearing of 328.6 degrees and a vertical angle of 25.6 degrees.

Note: The access plane extends in a strip to the edge of the land to which this Plan applies ascending as one moves back from the front of the plane.

(5) The Parramatta Square sun access plane is described as follows:

(a) X is a point at xxE, xxN, xxRL, and

(Note: Indicatively 'X' would be located along the western edge of Church Street Mall, in alignment with the southern edge of Parramatta Square)

(b) Y is a point at xxE, xxN, xxRL, and

(Note: Indicatively 'Y' would be located along the western edge of Church Street Mall, in alignment with the axis of St John's Cathedral)

(c) Z is a point at xxE, xxN, xxRL, and

(Note: Indicatively 'Z' would be located opposite the proposed Horwood Place link, in alignment with the axis of St John's Cathedral)

(d) The sun access plane for Parramatta Square is defined by:

(i) a plane connecting point X bearing June 21 – 2pm with point Y bearing June 21 – 2pm

(ii) a plane connecting point Y bearing June 21 – 2pm with point Z bearing June 21 – 2pm

(iii) a plane connecting point Z bearing June 21 – 2pm with point Z bearing June 21 – 12pm

(6) The Lancer Barracks sun access plane is described as follows:

...

(7) The Jubilee Park sun access plane is described as follows:

...

(8) In this clause, coordinates are Map Grid of Australia 1994 coordinates and horizontal bearings are measured from true north.

This proposed clause is illustrated graphically in **Figure 1** below.

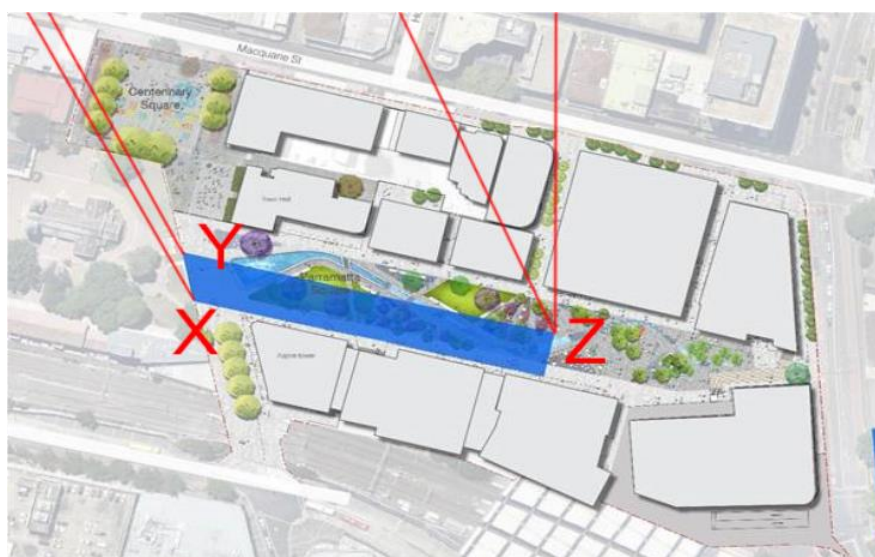


Figure 1 – Intended outcomes of amendment to Clause 7.4

Points X, Y and Z illustrates the points described in the proposed clause and red lines illustrate the angle of the sun between 12pm and 2 pm at midwinter.

Conclusion

We trust this letter and attachments will enable Council to consider an amendment to the Parramatta CBD Planning Proposal to clarify that the no overshadowing control for Parramatta Square applies at mid-winter June 21, as has applied to Parramatta since 2001 and as appears to have been the intent of DPE and the GSC in conditioning the Gateway determinations for the Greenway Plaza (and other Planning Proposals since). Accordingly, it is recommended that Clause 7.4 of Parramatta LEP 2011 be amended to incorporate the date of June 21 rather than the recently introduced implicit year-round control. We would appreciate the opportunity to meet with you to discuss this matter further.

Should you have any queries on the above matters please contact Jane Freeman, Principal Urban Design & Planning, on 8252 8400 or jane.freeman@architectus.com.au.

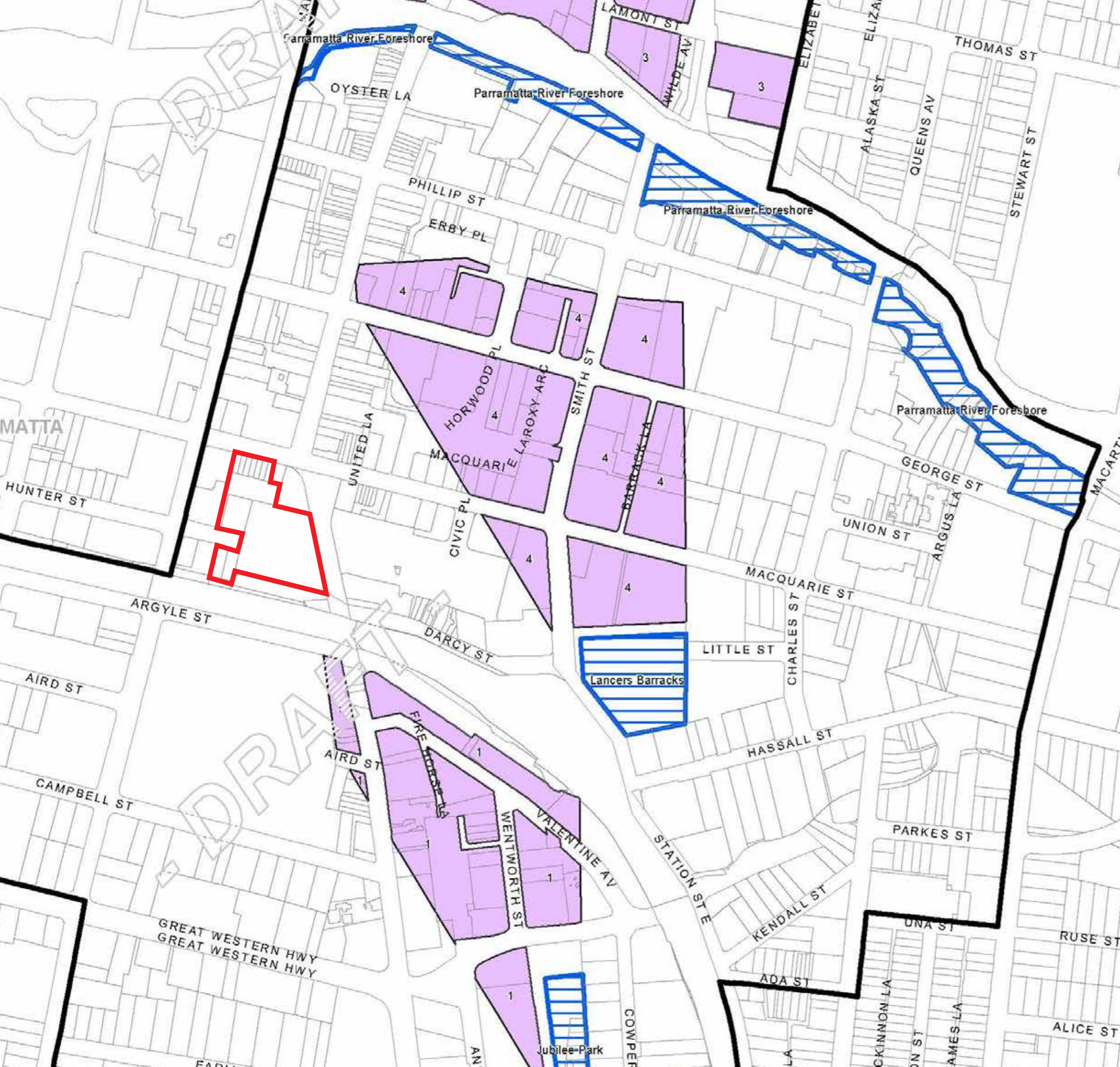
Regards,

A handwritten signature in black ink, appearing to read 'Michael Harrison', followed by a period.

Michael Harrison
Director Urban Design & Planning
Architectus Group Pty Ltd

Presentation to DPE - 29 November 2018
on behalf of St John's Anglican Cathedral

Sun access controls in Parramatta



Summary

The Parramatta LEP has recently been amended to prevent “any additional overshadowing, between 12 noon and 2pm, on Parramatta Square”.

This is a considerable change from the application of 12-2pm **midwinter** protection which is the established position of Parramatta Council and other areas in Sydney.

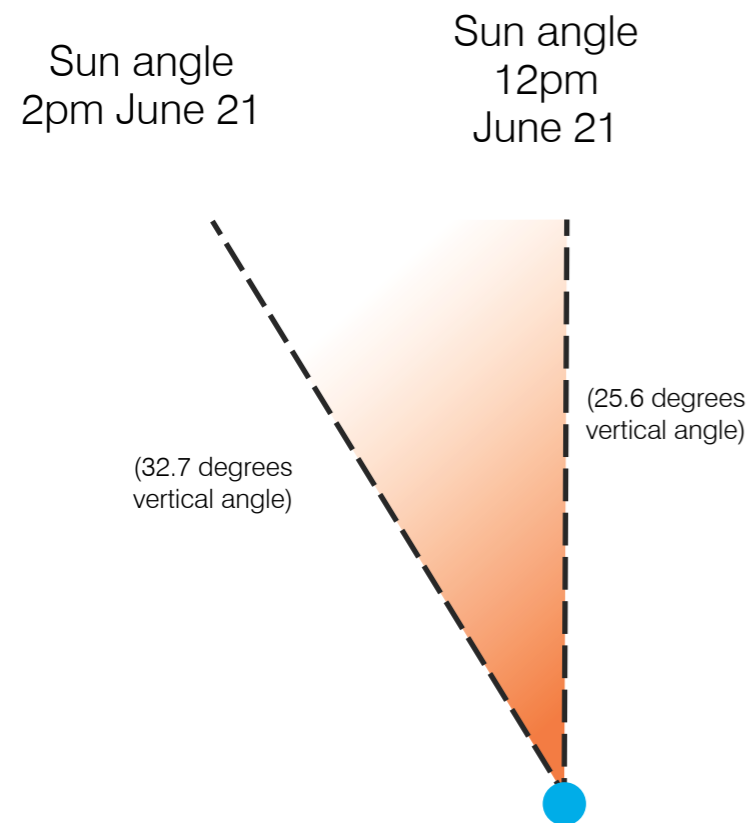
Architectus has extensive experience on this issue through our preparation of the **Parramatta City Centre Strategy** for Council (2014) and would like to ensure the Department understands the implications of changes to the sun access controls on the development potential of Parramatta.

Architectus is also working on one of the most important sites affected by this control - **land around the St John’s Anglican Cathedral**.

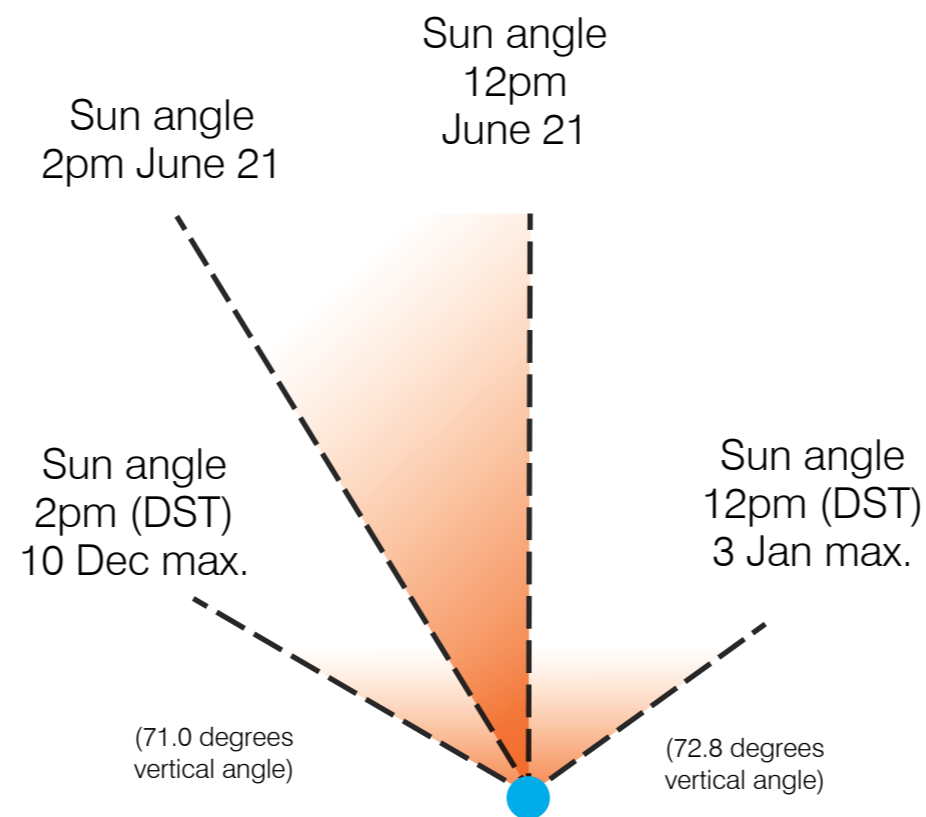
Angles and areas affected

All year protection is substantially more complex than midwinter protection.
Daylight savings time adds further complexity and the new control does not explain its application.

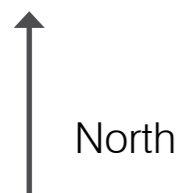
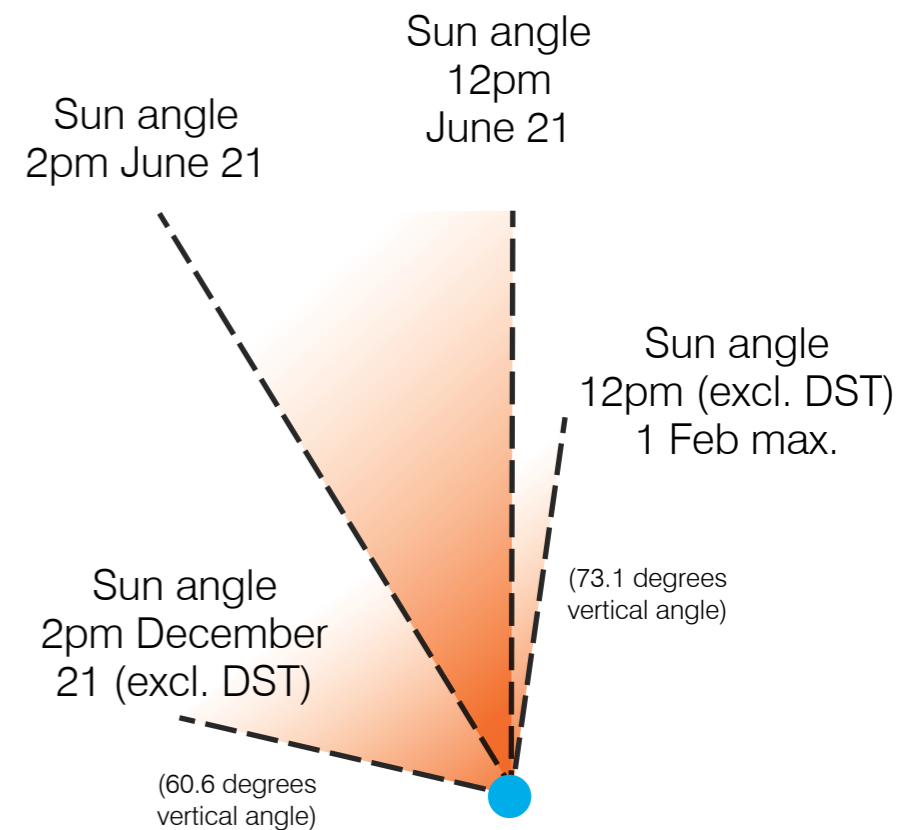
12-2pm midwinter protection



12-2pm all year protection including daylight savings time



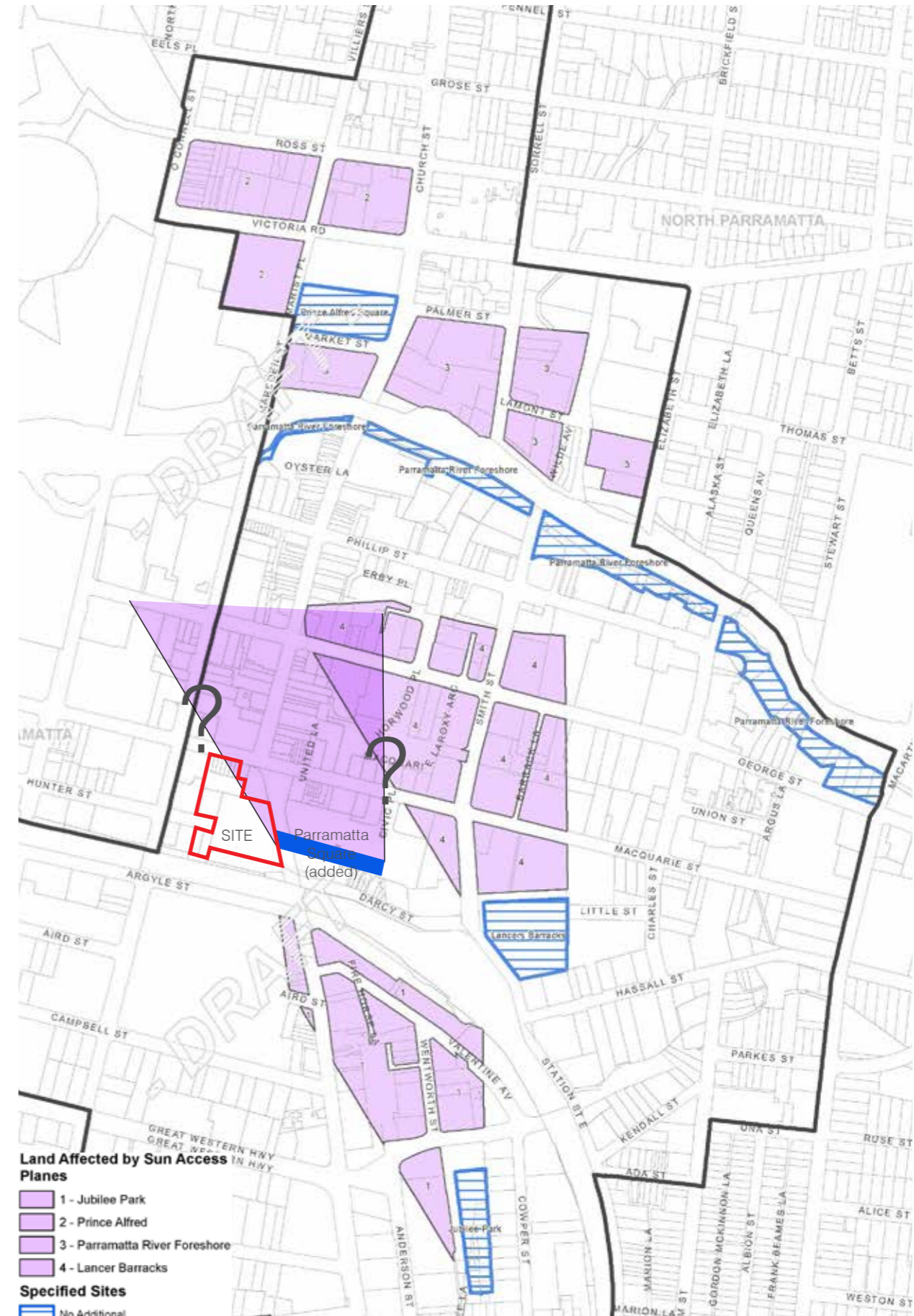
12-2pm all year protection excluding daylight savings



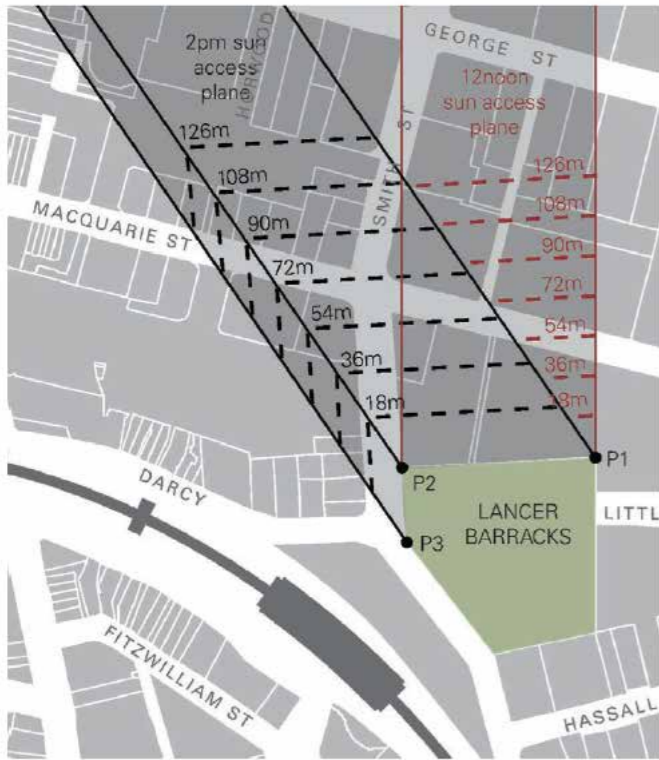
Note: Shaded area is the horizontal angle of the sun. The vertical angle of the sun is shown in brackets

1 - Proposed and existing controls

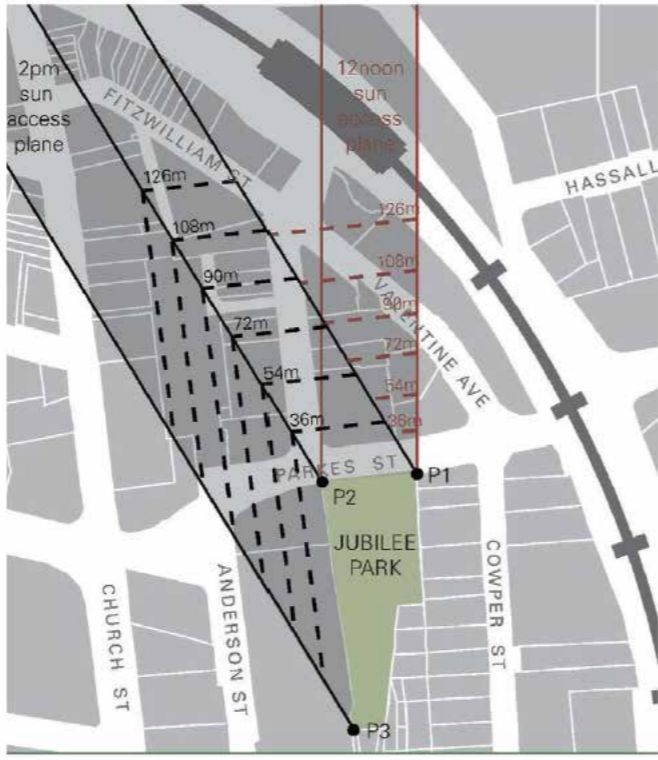
Except for this new control, all existing, previous and recently proposed sun access controls in Parramatta are based on 12-2pm **midwinter**



Parramatta CBD Planning Proposal sun access protection - 12-2pm midwinter.
Parramatta Square sun protection and site added by Architectus

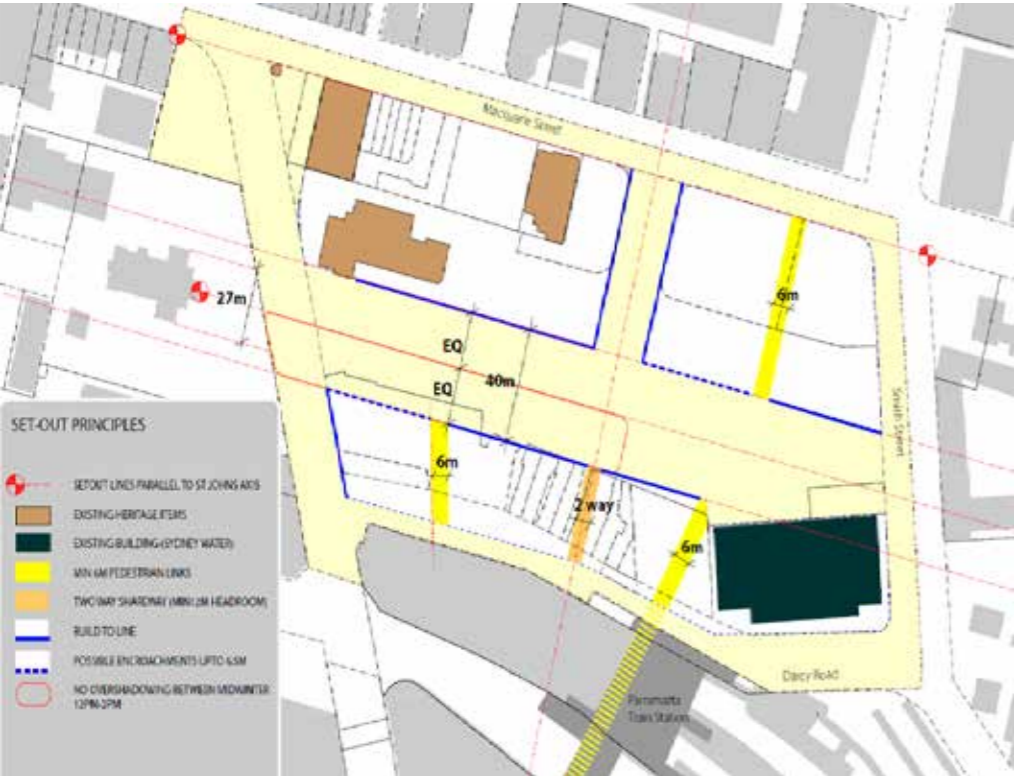


The sun access plane is generated from sun access to Lancer Barracks on June 22 between 12 noon and 2pm, measured at 7 metres above surveyed ground level at points P1, P2 and P3 (P1 = 12.9m AHD; P2 = 13.7 AHD). Building heights are indicative only.



The sun access plane is generated from sun access to Jubilee Park on June 22 between 12 noon and 2pm, measured at 20 metres above surveyed ground level at points P1, P2 and P3 (P1 = 9.2m AHD; P2 = 9.9 AHD; P3 = 12.5m). Building heights are indicative only

Existing DCP controls reflecting 12pm-2pm midwinter



Existing DCP sun access control - Parramatta Square - noting 12pm-2pm midwinter



Existing Parramatta LEP - 'Area 2' and 'Area 3' on height map reflect 12pm-2pm midwinter

2 - Impacts of changing the control from midwinter

Summary of benefits of a midwinter control

The use of **midwinter 12pm-2pm** controls:

- **protects sunlight when it is most desirable** rather than where shade is more desirable such as summer.
- are considerably more **practical to calculate** (understood by one linear plane and a single shadow diagram where periods of time require complex curving planes and many sets of diagrams).
- **is consistent with Council's established protection** of Parramatta Square and existing and proposed protection of other spaces. Any change to this established position should be publicly exhibited as it will impact many landowners significantly.
- does not create **additional complexity around daylight savings time**.
- provides an **evidenced based balance of sunlight amenity on public spaces and development potential for a major city centre**.

In addition to this, we recommend including a clause similar to City of Sydney Clause 6.17 (2) to avoid contorted building forms around a single beam for sunlight at a selective time

City of Sydney Clause 6.17:

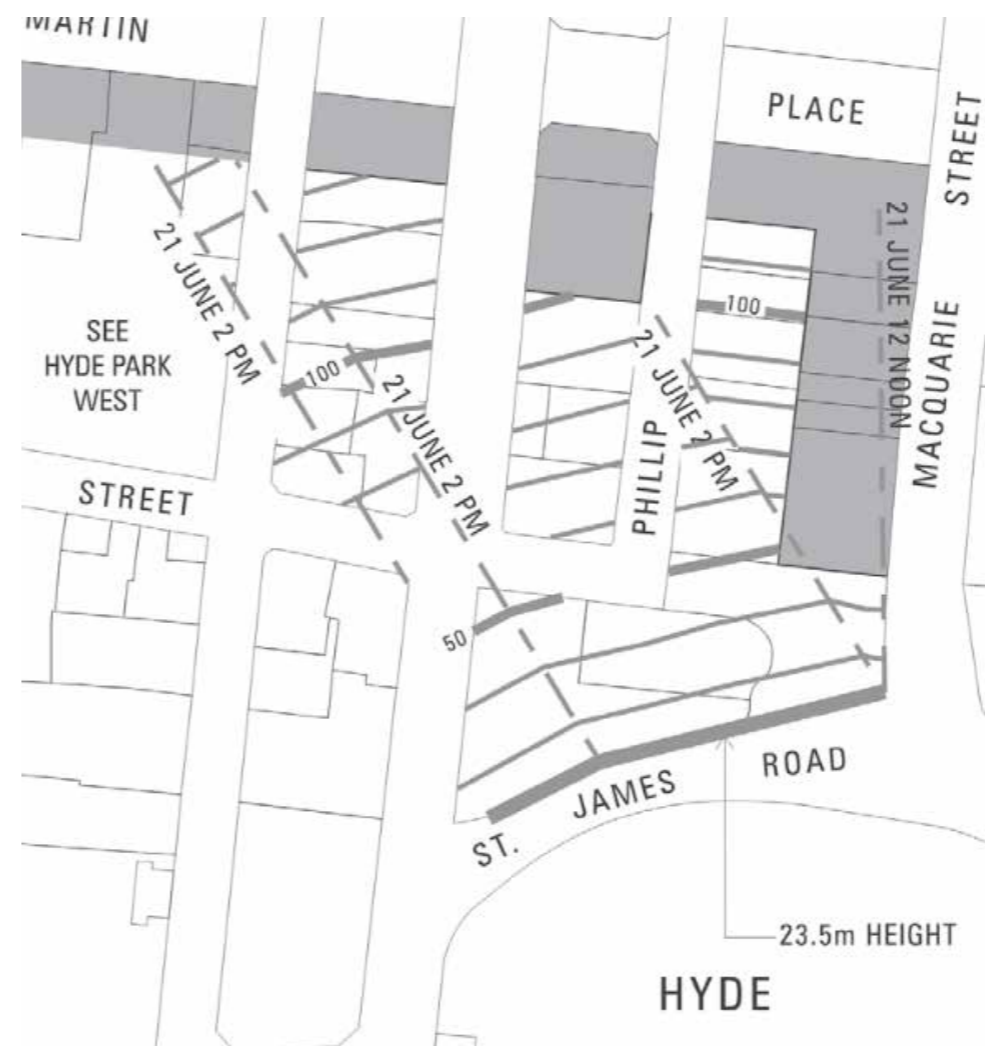
*"The consent authority must not grant development consent to development on land if the development will result in **any building on the land projecting higher than any part of a sun access plane** taken to extend over the land under this clause."*

Comparison with Sydney LEP 2012

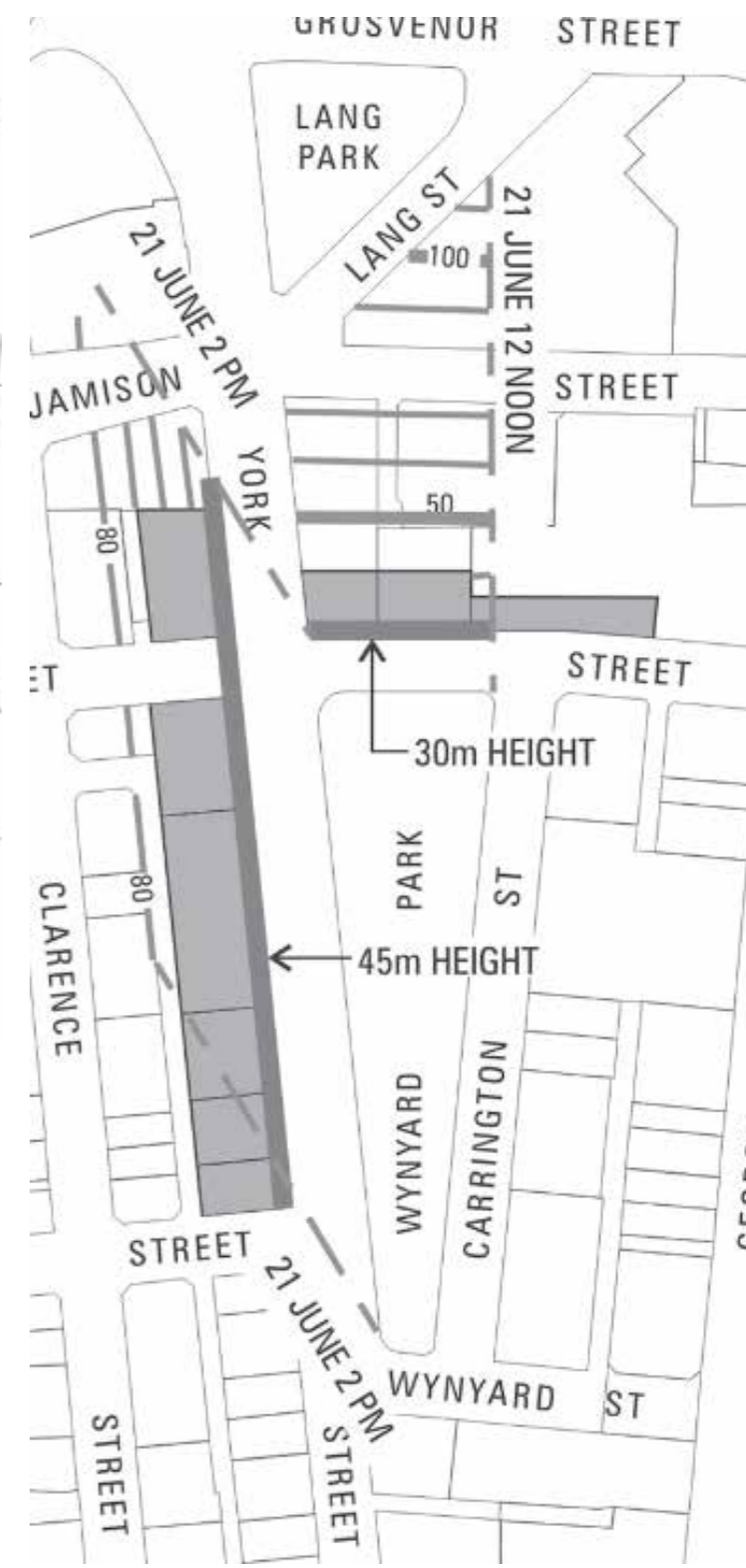
Current controls typically reflect midwinter hours, including:

- Belmore Park 12-2pm
- Hyde Park 12-2pm
- The Domain and Royal Botanical Gardens 12-2pm
- Wynyard Park 12-2pm

The plane is defined as angles in the LEP, and the dates of year and hours are described in the DCP.

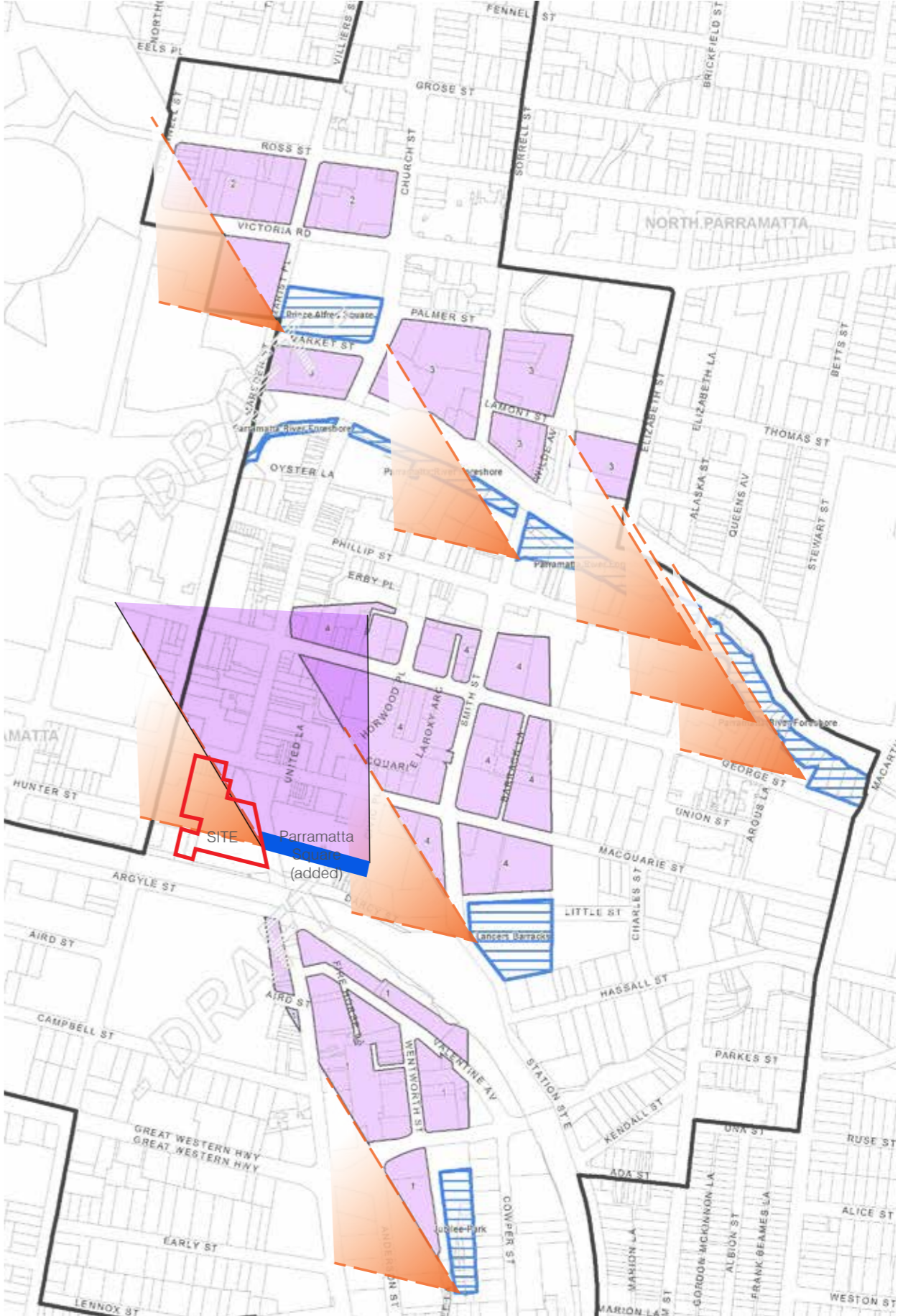
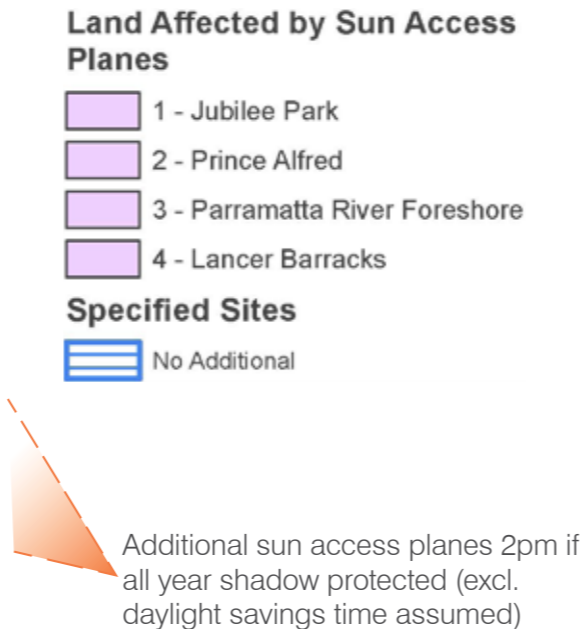


Example - Hyde Park (as described in DCP)



Example - Wynyard Park (as described in DCP)

If year-around protection 12-2pm is applied consistently across the centre, many sites would be severely reduced in development capacity to the detriment of Parramatta City Centre as the alternative to Central Sydney.

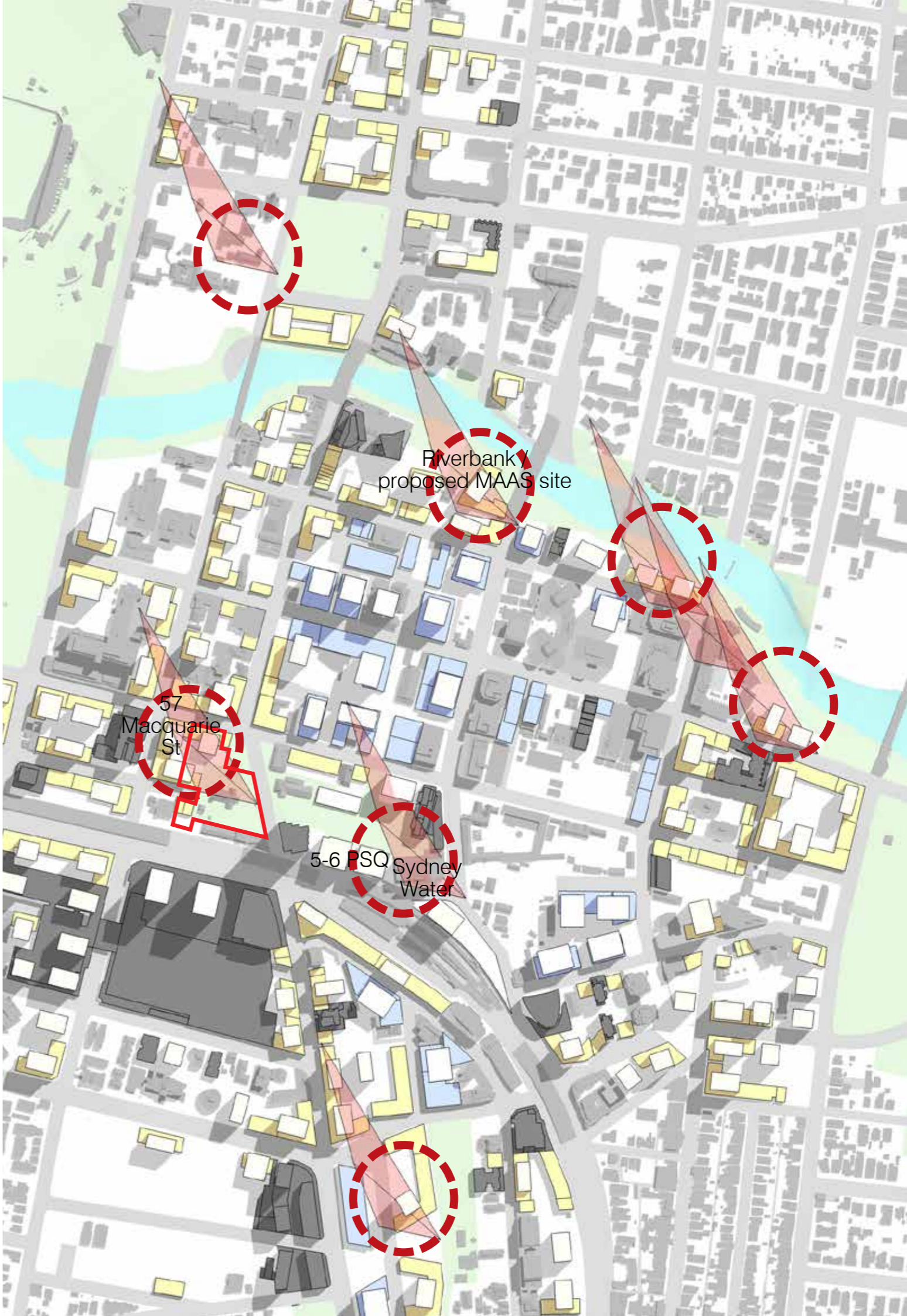


Additional sun access planes for a consistent approach shown on CBD Planning Proposal - Sun Access Protection map

Applying the ‘all year around’ sun protection across Parramatta would reduce c. 150,000-200,000sqm of GFA potential across the City Centre, including a reduction from existing controls on key sites.



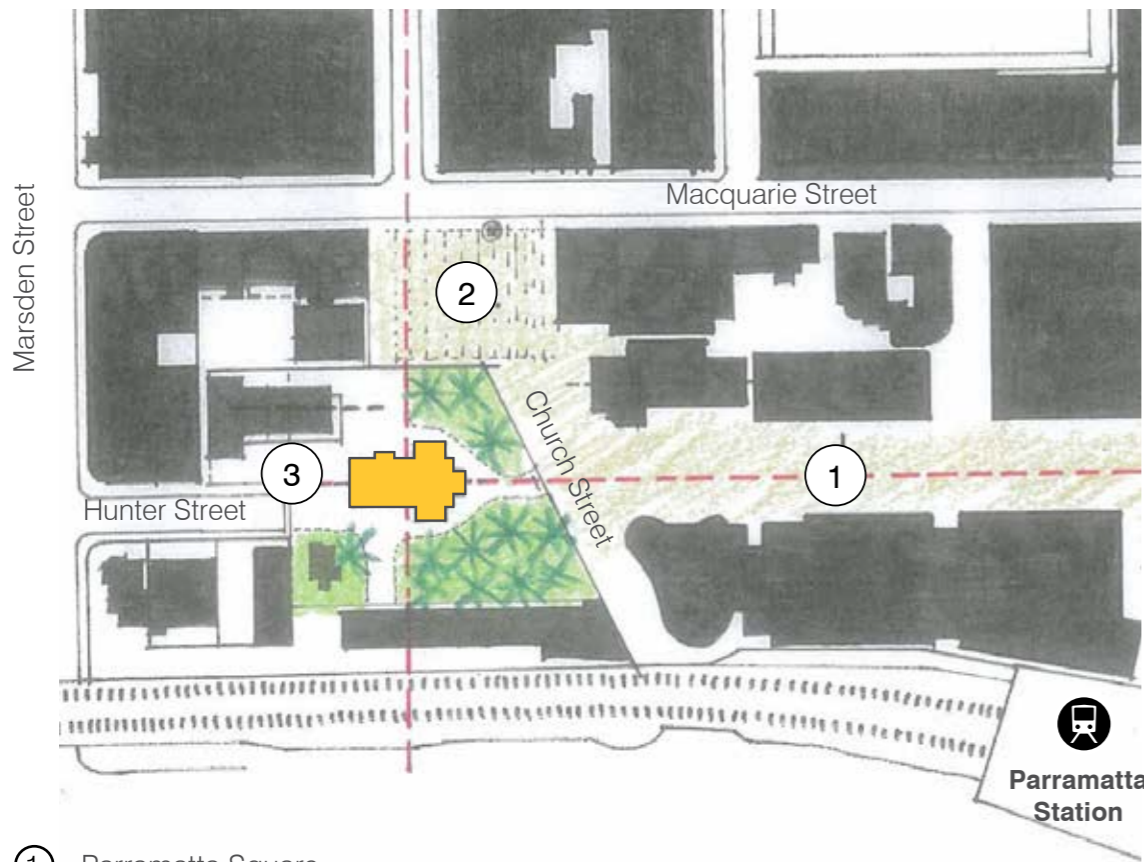
Testing based on Architectus’ modelling for 2014 Draft City Centre Strategy



3 - Parramatta Square and St John's

The western frontage of St John's Cathedral faces a poorly defined space with off axis road and clutter.

Existing situation



- ① Parramatta Square
- ② Centenary Square
- ③ Undefined space

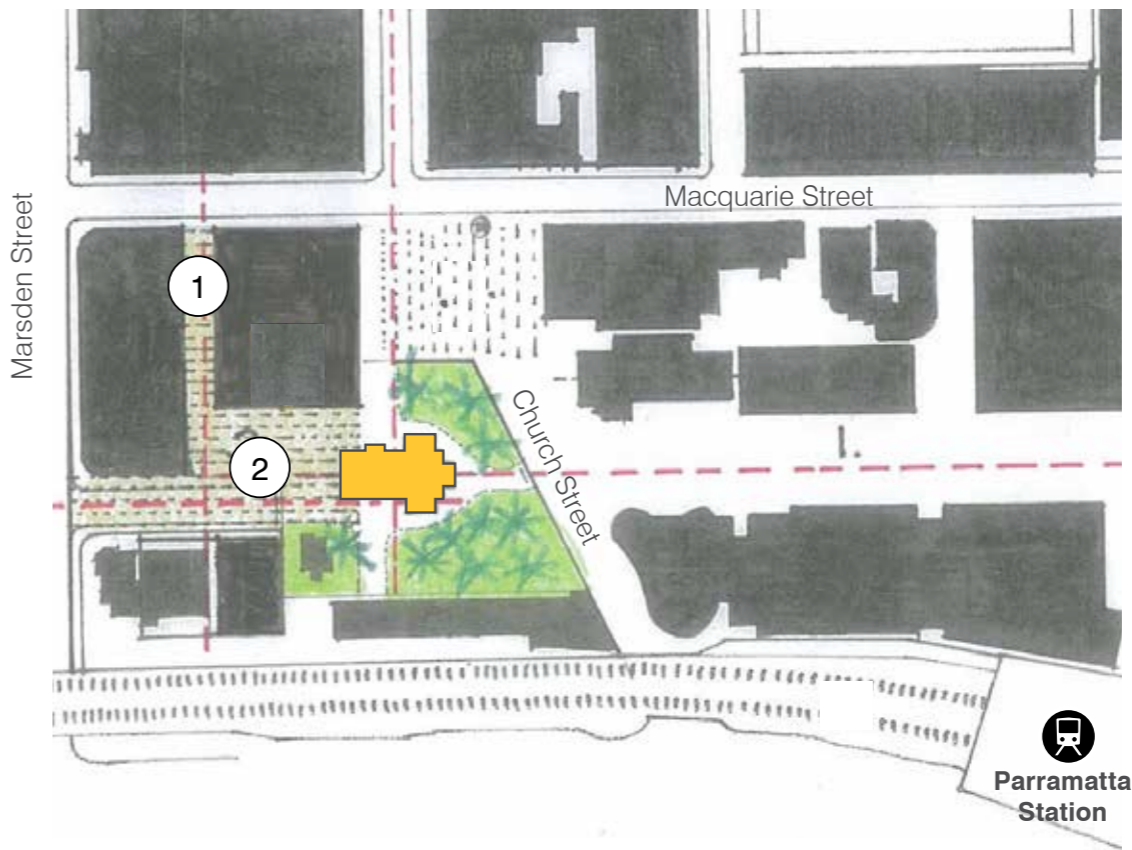


St John's western frontage today from Hunter Street showing poor environmental setting including at-grade parking, street furniture, fencing and signage



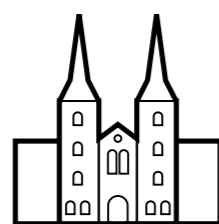
In order to resolve the spatial structure around the Cathedral, a new square is proposed.

Opportunity for new St John's Square

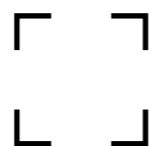


- ① New lane
- ② New Cathedral Square

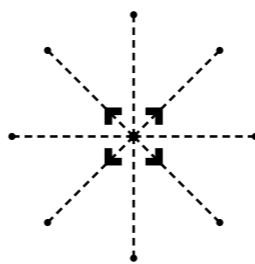
The master plan and proposed controls provide:



A new **setting** for **St John's Cathedral**, appropriate for the new Parramatta.



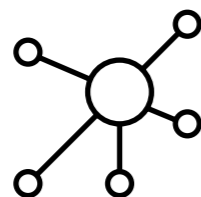
New public open space on site through provision of additional open space and a new lane.



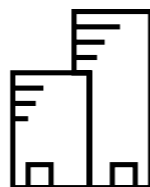
New public connections for Parramatta.



Sun access beyond that required by controls.



An organised approach to **views and interface**, focussing on the Cathedral.



Strategically **appropriate heights and densities**.



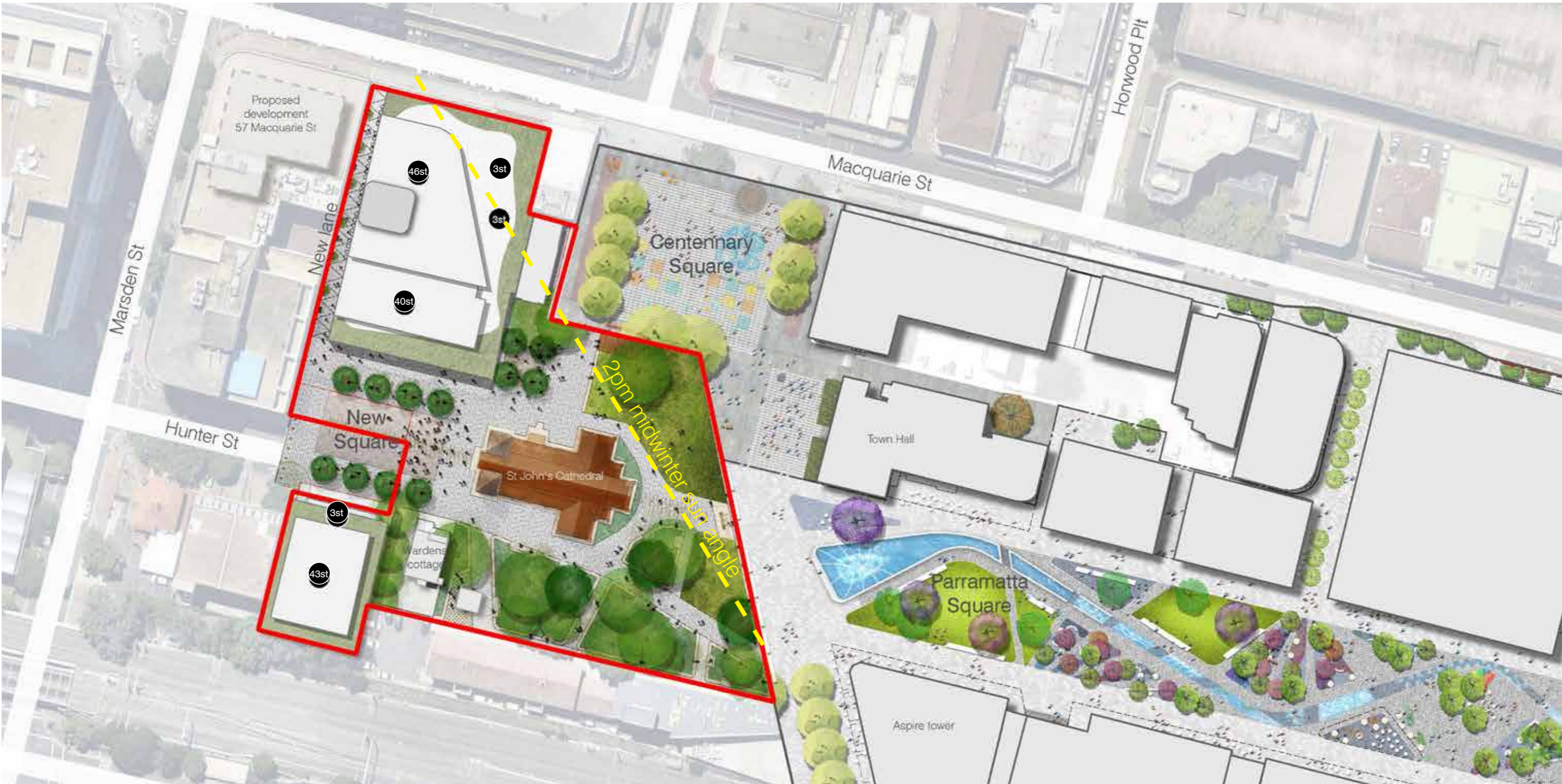
Delivery of **Council's aspiration of employment** use within the B4 zone.

100

The Church's aspirations for **a 100 year master plan** for ongoing use related to St John's Cathedral.

This design is based on 12pm-2pm midwinter sun protection to the defined area of Parramatta Square.

This excludes the previously allowed 45 mins overshadowing.



Preferred option - Plan



Three squares
in the heart of
Parramatta



Re-invigorating
the Cathedral as
a landmark

Assumptions used in modelling (pages following)

Existing and compliant development

Architectus has modelled approved development around Parramatta Square and shown indicative development forms on known and likely sites.

These are shown as forms compliant with the draft CBD Planning Proposal's FSR and height controls. They do not overshadow Parramatta Square 12pm-2pm midwinter.

Note: 45 minutes of overshadowing of the protected area (as in the current DCP) is not included in this testing.

Floorplates are provided that are appropriate for office and residential uses, and with SEPP65 separation from neighbours. This is based on Architectus' testing for Council (2014).

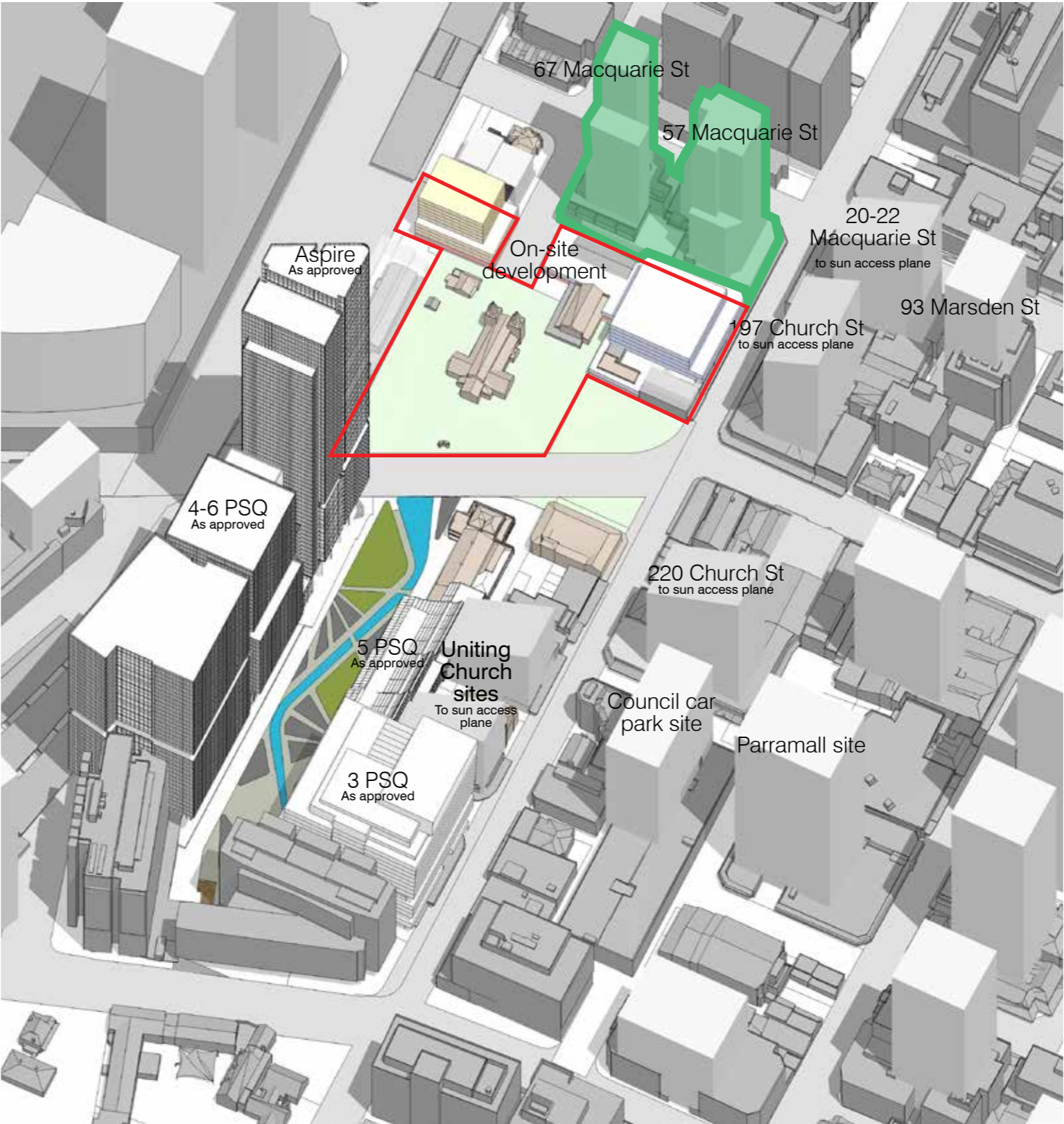
Adjacent sites - consistent with Draft CBD Planning Proposal

57 and 67 Macquarie Street are provided under the draft CBD Planning Proposal no height limit (incentive) and a 10:1 incentive FSR plus bonuses. 57 Macquarie Street is subject to a current draft Planning Proposal.

For the purpose of the following testing, development on these sites (and their shadows) is separated from development of the subject site, as under the current draft LEP they may overshadow part of Parramatta Square at a similar time to the proposed development.

Proposal

The proposal on site and overshadowing from this, is shown in blue.

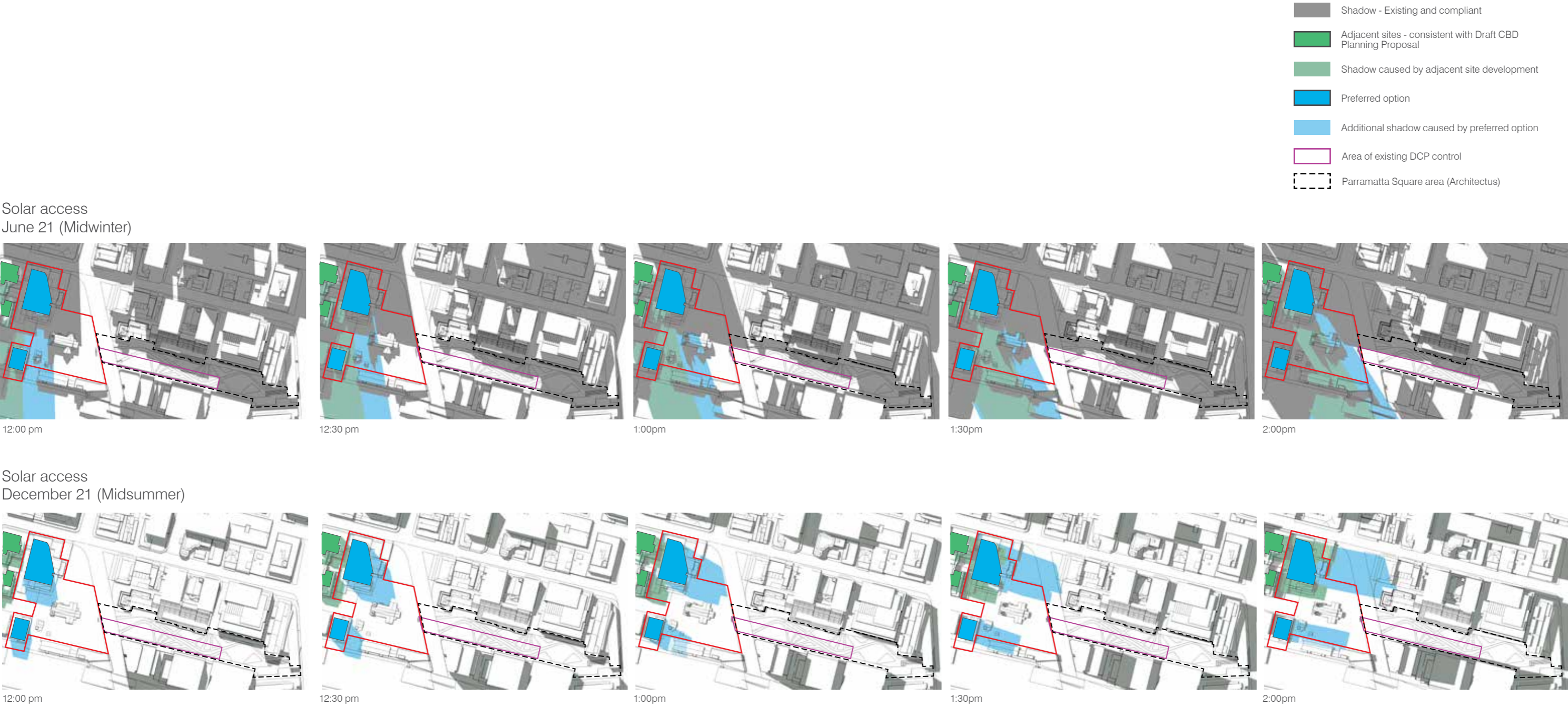


Adjacent sites - consistent with Draft CBD Planning Proposal

View of off-site development shown in CBD Planning Proposal scenario (others similar)
Note: Sun access plane referred to above is 12pm-2pm all year (see comments left)

The proposal does not impact on the established 12-2pm midwinter plane.

At other times of year at least the same area of Parramatta Square is in sun 12pm-2pm.



At the Spring Equinox (September 21), a minimum 50% of Parramatta Square is in sun between 12-2pm, well in excess of the control for midwinter (30% of Parramatta Square).

- Shadow - Existing and compliant
- Adjacent sites - consistent with Draft CBD Planning Proposal
- Shadow caused by adjacent site development
- Preferred option
- Additional shadow caused by preferred option
- Area of existing DCP control
- Parramatta Square area (Architectus)

Solar access
21 September (Spring Equinox)



Solar access
21 March (Autumn Equinox)



Summary and conclusions

Architectus recommends that for Parramatta Square, the control is clarified to refer to 12-2pm midwinter . This is:

- **Simple and practical to understand and implement** - for Council as well as landowners (particularly if issues such as daylight savings time are considered)
- Protective of sun to public spaces at times of year **when sun rather than shade is sought**
- **Consistent with Council's long established position** for this space and other sun access planes (existing and proposed) in Parramatta and market understanding
- A **balanced approach between amenity and development potential**
- Able to achieve a **good development form** for St John's with negligible change to winter sun

In addition to this, we recommend including a clause similar to City of Sydney Clause 6.17 (2) to avoid contorted building forms around a single beam for sunlight at a selective time