ATTACHMENT B – TECHNICAL ASSESSMENT

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1. Introduction

This document 'Attachment B' contains the Technical Assessment of the State Significant Development Application (SSD) for the Telopea Stage 1A and Concept Plan Application. It provides a further detailed assessment in addition to the formal submission, as well as assessment of matters relating to Biodiversity, Waste Management, Catchment Management and Drainage and Contamination. It should be read in conjunction with Council's submission which was endorsed by Council at its meeting on 22 November 2021 and Attachment A summary of Council's recommendations.

2. Land Use Planning

2.1 Height - Clause 4.6 Variations

Clause 4.6 request - Concept Plan

The Clause 4.6 seeks variation to the maximum permissible heights as shown in the **Figure 1**. The request to increase in height ranges from 70 metres to 86 metres for buildings C1 and C2; from 50 metres to 58 metres in C3; from 50 metres to 60 metres in C4; and from 40 metres to 47 metres in C6 and C7.

Figure 1: extract from EIS Appendix N (pg 14)

Subsequently, the SDRP advised in their July meeting that "*Core Precinct option for GFA redistribution - the option as presented of revised building envelopes with reduced footprints and additional height was generally supported, on the premise of improved public domain and amenity outcomes for the ground plane and building envelopes. For example, providing:*

- *increased space between buildings and greater openness to the sky*
- *clear amenity benefits including; increased solar access, improved landscape design outcomes (increased capacity for canopy & gathering/ social interaction)*
- *greater diversity of buildings -form and architectural expression.*

In addition to the SDRP advice, Council has assessed the variation in accordance with objectives contained in Clause 4.3 Height of Buildings of the Parramatta LEP 2011. These include - is the proposal reasonable or necessary; does it transition in built form, does it minimise visual impact and loss of solar access and maintain satisfactory sky exposure and daylight to key areas of the public domain.

Council considers that there is inadequate rationale and technical analysis presented to ensure that the exceedance in heights address the benefits as advised by the SDRP and that meet the objectives of Clause 4.3 of the Parramatta LEP 2011.

Council disputes that the height variation creates 'interest' and 'variation', as this will be naturally created by virtue of being a hilly suburb. The proposed height variation is not considered to be consistent with the Telopea Master Plan 2017 and subsequent rezoning which permits tall towers at the top of the hill that transition out to a lower scale the further away sites are from the Light Rail Station. Council believes that the proposal for The Core, building height has been arbitrarily reallocated. The tallest towers and 14-storey perimeter block buildings are not consistent with the desired height transition and visibly 'stick-out' from their context.

In relation to visual impact, whilst the proposed 'offset' of towers in the upper Core may offer some views from the new development, this arrangement increases the overall perceived density of The Core and limits views to sky from the public domain. This can be seen in the applicant's Visual Impact assessment where buildings in the Core read together as one large mass, rather than defining any views or spaces between buildings.

Furthermore, the height variation does not lead to better built form outcomes and the building footprints and tower lengths are excessive. As per Council's DCP for Telopea Precinct, the maximum length of tower is 50 metres, and maximum residential tower floorplate 1000sqm. Preferably, building depths should not exceed 24m to deliver the greatest residential amenity. **Table 1** demonstrates that tower floorplates have not been adequately reduced as a result of a Clause 4.6 Height Variation, and therefore does not serve as an appropriate justification to vary the control.

Table 1. The Core estimated Building lengths, widths and floorplates.

Tower	Length	Width	Area
C1.1	52m	28m	1380m^2
C1.2	50m	22.5m	1080m^2
C2.1	70m	14m – 27m	1620m^2
C2.2	68m	26m	1735m^2
C3	44m	24m – 31m	1156m^2
C4	44m	20m – 23m	935m^2

The reallocation of height has not addressed objectives of residential or open space amenity. The tower footprints are still excessive and there has been demonstration by the application that there is a net increase in public space as a result of the variation.

A comparative overshadowing analysis should be provided as part of the Clause 4.6 assessment as it is unclear that any proposed reallocation of height would have material difference in providing better solar access to public open spaces, including the retail plaza. Furthermore, there is no apparent additional public open space or public benefit being provided as a result of the height variation.

Furthermore, Council is concerned that by allowing additional height sets an undesirable precedent for the remainder of the Telopea precinct. The Telopea Master Plan 2017 and the

recent rezoning never envisaged the FSR bonuses of the SEPP (ARH) 2009 to be applied broadly across the LAHC lands. The SEPP does not allow for bonus height to accommodate the distribution of additional FSR, for potentially improved built form outcomes. Council asks that DPIE only consider the bonus floor space if the applicant can provide a more detailed and well-reasoned request. The request should provide a comparison of what a compliant scheme allows. Furthermore, from a policy point of view, the ability to provide for bonus heights need to be considered within the SEPP (ARH) 2009 if that is the intent.

Stage 1A

The Clause 4.6 seeks variation of height standards, with Building B on Sturt Street is the largest proposed increase in height from the maximum 28 metre to an increase of 45.48m and 30.88m.

Council considers that the height is due to the need to distribute the floor space (including SEPP (ARH) bonus) across the site and the provision of new road and neighbourhood park. It could therefore be argued that the development provides greater community benefit (in terms of provision of adequate street address for buildings and a new public park) which is in the public interest. However as detailed further in Council's submission the park, which is to be dedicated to Council, must meet Council requirements.

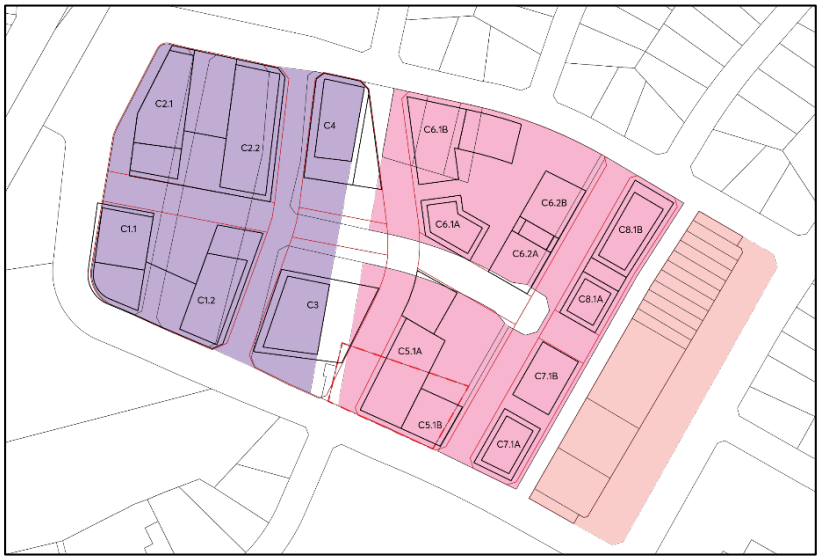
The proposal appears to maintain a transition of height to the adjoining lower rise buildings to the south. The main variation which is to Building B is located adjoining the greater heights prepared within The Core Area. The development appears to maintain satisfactory sky exposure and daylight to existing buildings within commercial centres, to the sides and rear of tower forms and to key areas of the public domain, including parks and streets.

2.2 Floor Space Ratio – Concept Plan

The Core – Inconsistency with FSR and Height Map

As demonstrated in **Figure 2** the Concept Plan does not match with the floor space ratio (FSR) map within the Parramatta LEP 2011. Buildings C3 and C4 are built in areas which contain a FSR and Height is not allocated a value (shown in white on **Figure 2**) in the Parramatta LEP 2011 as they are existing roads. Appendix N Clause 4.6 Variation Request for Concept Plan does not highlight that buildings C3 and C4 encroach on the height and FSR areas with no allocated value.

Figure 2. FSR tiles (in shaded colour) overlaid with Concept Plan for The Core



It is acknowledged that the land use zoning allows for the proposed mixed use development, however in line with the Parramatta LEP, the proposed density and heights of C3 and C4 are not consistent.

Council believes that the proposal should not be drawing gross floor area from this area. Clarification is required on the planning and legal implications of this.

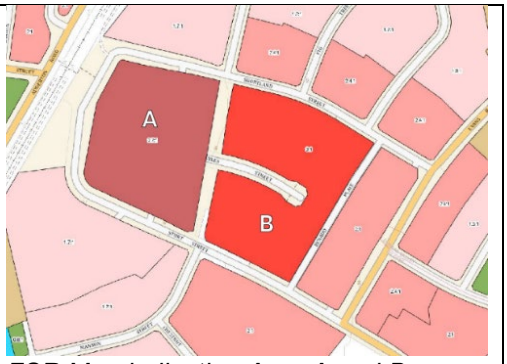
Council notes this is the technical aspect of a broader urban design issue which is addressed further in the submission relating to Council's request for revisions to the Concept Plan for the Core to more closely reflect the Telopea Master Plan and controls within the Parramatta LEP 2011.

Part 4.15.3 of the EIS states that the proposal will apply all available maximum floor space ratios under the Parramatta LEP 2011 and the State Environmental Planning Policies – Affordable Rental Housing 2009 and Housing for Seniors or People with a Disability 2004. Table 17 of the EIS presents that the maximum GFA permissible for the Core (C1 to C8) is 186,410sqm. The cumulative figures do not provide much certainty as to how density is being allocated across the Core.

Council has calculated the maximum permissible FSR for the Core (C1 – C8) in **Table 2** below, including available FSR bonuses as 168,409sqm. Therefore, Council concludes the proposal exceeds the maximum allowable FSR by over 18,000sqm (or approx.10.7%).

Table 2: Council's calculated maximum allowable FSR under PLEP 2011 and State Policies

CORE	FSR	Site Area (m2)	GFA base (m2)	Potential Bonus FSR	GFA with bonus (m2)
Area A*	3.7	17,921	66,309	0.74	79,571
*Seniors Living (C4) **		2,898		0.50	1,449
Area B	3.0	24,275	72,825	0.60	87,390
TOTAL		**45,094***	**139,134**		**168,409**



FSR Map indicating Area A and B

** Area A calculation = site area excluding C4 Site Area and applies the 0.74:1 SEPP (ARH) 2009 bonus FSR + Site Area of C4 (as per LAHC's Concept Plan) and applies the Senior Living Bonus of 0.5 FSR (noting C4 extends outside of the Site A LEP FSR Map).*

*** GFA and bonus calculated using site area of C4 as per LAHC's concept plan.*

The Core – GFA efficiency rates

Council has tested the validity of the GFA calculations against the envelope plans presented in the application. As shown in **Table 3** below, there is a significant discrepancy between the gross floor area (GFA) stated in the EIS and GFA calculation from the Envelope Plan in Appendix J of the EIS. Council can only assume the applicant is using a very low efficiency rate.

Building efficiency is expressed as a percentage, calculated by dividing the internal floor area by the building envelope area. For accurate benchmarking purposes, GFA at planning stages should be calculated using a consistent methodology. Council has used a standard efficiency rate to calculate the GFA from the Envelope Plan (75% for residential, 85% for commercial and ground floors are often calculated on a case-by-case basis as they can range from 30%-60%). Council's efficiency rates are rigorously tested through Council's development

assessments and design competitions, as well as being referred to in Council's DCP for Telopea and Section 2B of the Apartment Design Guide. Based on the comparison below in **Table 3** there is a risk that the future development applications will exceed permissible FSRs.

Table 3. Gross floor area comparison of The Core – between EIS calculations and the envelope plan:

	Indicative GFA (EIS pg101)	Measured GFA (based on envelope plan)	Difference	
C1	36,951 m^2	43,561 m^2	+ 6,610 m^2	
C2	45,435 m^2	47,525 m^2	+ 2,090 m^2	
C3	16,150 m^2	16,397 m^2	+ 247 m^2	
C4	16,266 m^2	15,379 m^2	- 887 m^2	
C5	18,637 m^2	18,446 m^2	- 191 m^2	
C6	34,395 m^2	33,840 m^2	- 555 m^2	
C7	11,360 m^2	13,815 m^2	+ 2,455 m^2	
C8	12,742 m^2	15,375 m^2	+ 2,633 m^2	
Total	191,936 m^2	204,338 m^2	+ 12,402 m^2	

The Precincts – Permissible FSR

Council has reviewed the Precinct Concept Plans and Table 17 of EIS and undertaken testing on lots within the Northern Precinct. As shown **Table 4** below, Council considers that in 5 of the 9 lots the proposed FSR is greater than the maximum FSR permitted under the Parramatta LEP and SEPP (AHR) 2009 allowable FSR bonus. Just for the Northern Precinct, this translates to a potential increase in overall GFA of nearly 4,500sqm (potential additional 45 dwellings). Council has not undertake a full assessment of the Southern and Eastern Precinct areas.

Council considers that the exceedances are unacceptable for the following reasons:

- The Telopea Master Plan and subsequent rezoning did not envisage these floor space exceedances, which has a resultant effect of an increase in dwellings and population and consequently pressure on local and state infrastructure.
- Results in poor built form outcomes, including reduction in setbacks, landscape areas and deep soil zones.
- If approved, will be difficult to challenge for each development application submitted.

Table 4: Council's calculated maximum allowable FSR under PLEP 2011 and State Policies against Concept Plan for Northern Precincts

Northern Precinct - Lot	Permissible FSR (PLEP 2011 + SEPP AHR Bonus)	Proposed FSR	Difference
N3	2.9	2.97	+.07
N4	2.5	2.19	-0.31
N5	2.5	2.65	+0.15

N6	2.9	3.28	+0.38
N7	2.5	2.35	-0.15
N8	2.9	3.76	+0.86
N9 (south)	2	1.97	-0.03
N9 (north)	2	2.24	+0.24
N10	2	1.93	-0.07

2.3 Design Excellence

Consistency with Clause 6.12 of the Parramatta LEP 2011

Clause 6.12 requires that development consent must not be granted for development unless the consent authority considers that the development exhibits design excellence. This provision was introduced by DPIE in 2018 as part of the rezoning of the Telopea Precinct. Although the applicant has provided a Design Excellence Strategy for future development, they do not appear to have addressed how the proposal exhibits design excellence for both the Concept Application and Stage 1A development application.

The Design Excellence Strategy proposed by the applicant requires design competitions for four sites only:

- Buildings C1 and C2 and Telopea Square (Core site)
- Building C3 (future Council Library site)
- One stage within the North Precinct (location to be determined)
- One stage within the South Precinct (location to be determined).

However, Clause 6.12 provides that any development valued at over $100M or over 55 metres in height shall undertake a design competition. Furthermore, all developments within the Telopea Precinct must demonstrate design excellence against the provisions outlines in Clause 6.12(4).

The Strategy does not provide sufficient justification as to why Clause 6.12 should be varied by DPIE. Council further notes that design excellence provisions applies to concept development applications as well as detailed development applications, and reference court judgement on this matter (refer The Uniting Church in Australia Property Trust (NSW) v Parramatta Council – [2018] NSWLEC 158).

Council recommends that the Design Excellence Strategy be revised to be consistent with the adopted Design Excellence clauses(clause 6.12) of the Parramatta LEP 2011. It is requested that the applicant identifies any other sites that would trigger the requirements of a Design Competition. Conversely the applicant should provide appropriate justification if it wishes to vary Clause 6.12 of the Parramatta LEP 2011.

Role of Government Architect NSW (GANSW)

The Design Excellence Strategy states that “the competition brief will be prepared by the consortium and provided to the State Design Review Panel (SDRP) and City of Parramatta Council for comment prior to finalisation”. It is recommended that GANSW is responsible for the approval of all future Design Competition Briefs. Council’s City Architect will continue to work closely with Government Architects NSW (GANSW) to ensure the brief is consistent with the policies and procedures for Design Competitions at Council.

Prior to the first Design Competition Brief being finalised, it is recommended that a template “model brief”is developed to the satisfaction of GANSW. Council would be pleased to provide its own “model brief” which includes the policies and procedures governing Design Competitions at Council.

Selection Panel / Design Excellence Jury

The proposal for four panel members is not supported. It is recommended to always have an oddnumber of panel members (typically 3 or 5 panel members). The proposal for Affinity Consortium to have 3 of the 4 panel representatives is also not supported. The imbalance of proponent representation could be seen by the community as biased and in favour of the proponent.

It is recommended that a Council representative is nominated for all Design Competitions, and not just thefuture Council library site.

The Council representative should be Council's City Architect, or their nominee. Council could consider nominating a consistent representative from GANSW State Design Review Panel for all competitions.

Design Review

The Strategy states "during the process of detailed DA's…a process of Design Review will be undertaken. The strategy does not nominate the various stages of the approval process when DesignReview will be required.

Council's Design Excellence Process requires that Design Review is required at Pre-lodgement, Development Application, and prior to the relevant Construction Certificate and Occupancy Certificate. This process requires the original Design Excellence Jury to review and comment on the scheme to ensure that Design Excellence is maintained for the life of the development.

It is recommended that GANSW nominate their preferred process and timing for Design Review and that the strategy be updated to reflect GANSW requirements.

Council's City Architect commends the SDRP on its clear and detailed advice provided to the proponentin both April and June, 2021. It is recommend that the SDRP provide written certification that the submitted Detailed DevelopmentApplication for Stage 1A has appropriately addressed the panel's recommendations.

2.4 Development Staging

Council considers that some of the existing LAHC owned housing stock is of poor quality and in urgent need of renewal, in particular the housing stock is located within the Precincts (Stage 3). The EIS indicates that Stage 3 will not be redeveloped for more than 15 years. Council therefore requests that the applicant reconsider the staging of delivery of new housing based on current condition of the existing housing stock in Stage 3 areas.

3. Local and State Local Infrastructure (VPA Letter of Offers)

3.1 VPA Offer (Council)

Council is currently reviewing the revised voluntary planning agreement (VPA) Letter of Offer included as part of the SSD Application package. Council will provide direct feedback to Frasers and LAHC as part of ongoing negotiations.

In summary, the revised letter of offer is delivery of $55M worth of local infrastructure, comprising:

- New open spaces, including the Arrival Plaza, neighbourhood park and pocket parks;
- A new Community Centre and Library (note not fully funded under the VPA Letter of Offer);
- New roads and intersection upgrades; and
- Cycleways and streetscape upgrades.

Council is undertaking an assessment of the merits of the items contained in the VPA Offer, and the principles in which these are based are as follows:

- That no credit be given to existing NSW Government social housing;
- That the proposed social and affordable housing are not subject to payment of contributions (consistent with provisions in the Contributions Plan);
- That seniors living development is not subject to payment of contributions (consistent with Ministerial Direction);
- That 7,000sqm of retail development was considered to be part supermarket, part retail shops and food and beverage;
- That there was insufficient details on the church development to assign contributions however it would be subject to future contributions; and
- That agreed items by Council (considered as genuine local infrastructure) may be offset against any contributions payable.

The Letter of Offer proposes that the value of 21 Sturt Street (of $9.7M) is taken from the $55.5M value of items, resulting in a total offer of $45.8M. Council fundamentally disagrees with the value of 21 Sturt Street proposed by Frasers and its inclusion in the VPA Letter of Offer.

Furthermore, the applicant's VPA Offer requests that the development – both Stage 1A and the Concept Area – are fully exempt from payment of development contributions. Council believes that any VPA that is entered into must be equal to or exceed in value that Council would be payable under the applicable contributions plan.

Council understands that the VPA would be attached as a condition of consent to any development approval, however Council will not agree to the SSD Application being approved without the VPA being agreed to by Council and the applicant. Council has calculated the development contribution using the *Parramatta (Outside Parramatta CBD) Contributions Plan 2021* (which came into effect 20 September 2021) plan. Based on the current development proposal the estimated contributions are:

- Stage 1A works - $7,417,672; and
- Concept Plan works - $63,846,542.

Council is undertaking an assessment of the merits of the items contained in the VPA Offer based on the following principles:

- The items are identified in the Works List within the *Parramatta (Outside Parramatta CBD) Contributions Plan 2021;*
- Identified in other Council strategic documents, including Council's Community Infrastructure Strategy or Bike Plan;
- Not otherwise required as part of a development approval;
- Has merit as a local benefit to meet the needs of existing and future resident and worker population;
- Development is staged so it not compromise the existing operation of the Dundas Library and Community Hall.

Furthermore, it is considered by Council that proposed exceedances in floor space due to wide spread use of SEPP Bonuses and additional GFA being sought will result in potential additional dwellings not envisaged by the Telopea Master Plan and subsequent Priority Precinct rezoning by DPIE. If additional dwellings above the maximum allowable FSR are considered by DPIE to be acceptable, Council request a review must be undertaken of the generated need for additional local and state infrastructure.

Future Library and Community Centre

Generally the EIS presents the view that at completion of the development a new district level library and community centre will be operational for the community to use. The

applicant is seeking approval based on an operational community centre and library, however the VPA Offer does not fund this facility. Therefore, Council is concerned that the onus to deliver the facility is shifted from the applicant to Council. Additionally, it is not clear if the stratum within Building C3 within The Core, in which the facility will be located, will be dedicated to Council. The applicant is required to confirm this.

Items 6.3.2 and 6.4 of the EIS imply that Council has consented to the disposal and relocation of the Library and Community facility and that the new facility will be provided by Frasers and LAHC as part of the redevelopment, this is misleading as neither has been agreed between the parties.

3.2 VPA offer (State)

It is noted that the current State VPA Offer includes the following key elements:

- Works in kind – the delivery of 740 social housing dwellings (and additional 254 dwellings) and delivery of 256 affordable housing dwellings;
- Funding for the Social Housing Outcomes Program;
- Cash contributions of:
    - $5M to deliver a communal facility for use by the school and wider community on the Telopea school site;
    - $5M to accelerate the upgrade of the Telopea Public School;
    - $8M towards Transport for NSW (TfNSW) upgrades in Telopea; and
    - $2M towards other government services.

Council supports the appropriate provision of State infrastructure as part of the Telopea Precinct renewal, specifically:

- The communal facility at Telopea Public School, to investigate shared use by the community of any facility. The key outcome is that the facility provides maximum future opportunity for public access in the future.
- The signalisation and upgrades of Pennant Hills Road and Evans Road intersection is considered critical to provide improved regional connections to the growing Telopea precinct.

4. Urban Design

4.1 Concept Plan – The Core

Street and Block Layout

The Concept Plan for The Core departs from the LAHC and Council endorsed Master Plan (2017), which was formalised via the Parramatta LEP 2011 via the DPIE Priority Precinct process. This departure from the Parramatta LEP has led to an incongruous relationship between the podium, tower, and proposed block pattern. Some residential towers have been located relative to a zoning line that no longer correlates with the street-block layout of the proposed concept and this creates arbitrary built form alignments, poor relationship between podium and tower, increases perceived density, and doesn't facilitate legibility of the site. This is dictating many design decisions, rather than allowing development to be guided by an understanding of the structure of the Precinct.

Furthermore, the following design issues and inconsistencies with the DCP for Telopea are to be considered in the assessment of the Concept Application for the Core:

DCP Principles for Street Connections in the Core:

P.1 *Provide new or relocated road connections and intersections to service the new retail precinct and residential developments.*

P.2 *Road connections are to be provided to increase accessibility and appropriately navigate the topography of the precinct for motorists, pedestrians, and cyclists.*

P.3 *To ensure new streets are designed to maximise equitable access, where possible, and as topography permits.*

P.4 *Where possible, that new road connections connect with the existing street pattern in order to provide direct connections.*

The proposed street layout for the core is not well integrated into the surrounding street network and does not preserve any existing street sightlines, view corridors and connections across the site. All proposed streets are undersized in relation to the intensity of future development (ideally minimum 20m for high density), and do not respond to or reveal the topography. The proposed streets and open spaces don't relate to the associated typologies. There is a poor spatial delineation between public and private open spaces in the Core.

The basis of the proposal to maximise the retention of existing high value trees across the precinct is supported, however Council considers that successful retention and sustained longevity of the trees is at risk under the proposed concept plan due to basement encroachment, changes to the water table and soil levels, and loss of sunlight and increases in wind downdraft. The existing trees play an important role to define the street network and built form and reduce the impact of perceived density.

Tree preservation cannot be to the exclusion of issues that relate to organising a very high density of development on hilly terrain, and consideration should be given to ensure that streets and open spaces remain the primary organising elements of consequent built form due to the scalar change in development. It is also noted that, upon desktop review, the Concept Plan does not provide an equal or better rate of tree preservation than the Telopea Master Plan (2017).

The loss of any existing streets and associated parking, street trees and legibility, would not be in the public interest. The pedestrianisation of Eyles Street does not offer clear address to adjacent buildings and it affects precinct accessibility. Nor does it contribute legibility to a future public open space network as it is not visibly delineated from private development.

Appendix 1 provides design testing between the proposed scheme and the Telopea Masterplan (2017). This to demonstrate the benefits of more efficient street and block layout consistent with the Parramatta LEP 2011. These benefits include:

- There is more developable land (more street blocks and less street area) and therefore it is more efficient in achieving the GFA sought within the maximum height of buildings.
- A new wider street with clearer sightlines;
- More street frontage and buildings with street address;
- Improved street accessibility as they are designed along contours;
- Desktop analysis reveals that this would not result in more tree removal than the applicant's proposal (noting that compared with the Masterplan 2017 the applicant's scheme only retains 6 more A+ trees); and
- Improved communal space outcomes - having private boundaries, rather than 'backing on to' public open space or streets.

Built Form

The following inconsistencies with the Telopea DCP Objectives for Development in The Core relating to built form are to be considered in the assessment of the Concept for the Core:

DCP Objectives for Development in the Core

- ***O.1*** *To facilitate the development of a new neighbourhood retail, commercial and residential precinct which supports activation, a quality public domain and pedestrian connections to the Parramatta Light Rail.*
- ***O.2*** *To ensure taller buildings are slender in form and are adequately separated to ensure solar access, view to the sky, and minimise wind impacts.*
- ***O.3*** *To encourage an urban form which works with the topography, addresses the streets, maximises solar access and creation of views.*
- ***O.4*** *To ensure development facilitates a healthy environment for landscaping and street trees.*

The Telopea Master Plan (2017) envisions a balance of 'perimeter-block' and 'podium-tower' typologies, whereas the Concept Plan does not provide a clear definition of coherent building typologies in the Core. Namely, the 14 storey street wall buildings are too excessive to be considered a perimeter block typology, which is typical between 6- to 8-storeys. These buildings, setback at a maximum of 3m on street reservations that are typically less than 18m, do not provide for a human scale to the street, adequate solar access to the public domain, or views to sky.

The length and depth of buildings and towers proposed on site are excessive. Towers in the Core exceed the maximum building length and floorplate controls of the DCP, with tower facades measuring up to 70 metres in length.

Future built form should create positive spaces (both at the level of the podium/street wall and the tower) and relate to specific building typologies. The organisational principle of locating towers relative to a zoning line creates arbitrary built form alignments that do not address the proposed street network or facilitate legibility of the site.

The proposed offset and occasional cantilevering of towers across the Core increases the overall perceived density and limits views to sky, exemplified in the applicant's Visual Impact assessment. The existing extent of Eyles Street, even with its mild bend, retains a strong sense of outlook and sky views as it is framed by low buildings with generous setbacks and trees. The proposed Concept Plan accentuates the bend of Eyles Street, visually narrowing the street and terminating previously distant views with new and significantly high buildings.

Waratah Shops (Evans Road)

Council requests that the applicant present urban design testing of the Evans Road (Waratah) shops block (bounded by Evans Road, Benaud Place, Shortland and Sturt Streets) to demonstrate that the proposal does not adversely impact on the realisation of development potential in line with the controls of the Parramatta LEP 2011 and Telopea DCP. Council's initial analysis suggest that the proposal does not currently meet the building separation and visual privacy distances contained Apartment Design Guide (ADG) of SEPP 65, as measured from the centre of Benaud Lane.

4.2 Concept Plan - Precincts

Council objects to the Precinct Concept design proposed in the application and considers it not an appropriate or wholistic response. The proposed design solution is only a partial vision for how sites may redevelop, and if approved, risks an inconsistent and unequitable approach between those sites being redeveloped by LAHC/Frasers and those which are privately owned. A higher degree of regularity across the precinct is particularly critical in precincts with hilly topography and curvilinear streets, such as Telopea.

LAHC should acknowledge that through its large landholdings that they should be consistent with the controls within the Telopea DCP and therefore relate to all other development being guided by the DCP for Telopea. This should be reflected through scale, proportion, setbacks, and grain. Council considers that following controls must be delivered as a minimum to achieve consistency across the precinct:

a) Building breaks at least every 45m;
b) Continuity of deep soil network and 10m rear setback zone; and
c) 4m – 6m setback to the street.

The following design principles the DCP for Telopea are to be considered in the assessment of the Precincts:

DCP Principles for Development within the Precincts:

P.1 *Buildings are to form a continuous pattern of consistent street setbacks and building separation to create a comfortable neighbourhood environment.*
P.2 *Development is designed to enhance and maintain the topography, streetscape, and natural environment as key features of Telopea.*
P.3 *Development is to provide breaks between the buildings to provide opportunities for views to the Dundas Valley.*
P.4 *Maximise the number of apartments facing the street, provide separation between buildings and allow for greater rear and front setbacks and contiguous landscape areas and deep soil networks.*
P.5 *Front and rear setbacks and basement design is to respond to topography, allow for landscaping, privacy and amenity and minimise the undergrounding of apartments.*
P.6 *Design buildings to retain existing trees where possible and provide opportunities to plant new trees.*

Scale and Proportion

The bulky building forms proposed across the Precinct are not appropriate for the context of Telopea. The proposal does not apply a coherent or consistent built form, rather than helping to define the spaces of the street and between buildings - which would create a comfortable and legible urban environment.

The Precincts calls for a finer grain resolution than The Core. The proposed amalgamations are exhibiting issues of excessive excavation, subterranean spaces, large retaining walls, and greater loss of existing trees. The average continuous façade in the Concept Plan for the Precincts ranges from 70m-100m, which is not supported by Council.

The proposed building depths in the Precinct ranging from 22.5m to 30m exacerbate the issues of negotiating the topography and leave very little opportunity for diversity of apartment types and or cross through apartments. The controls contained in the Telopea DCP offers a better amenity solution.

Rear Setback and Deep Soil Network

The proposed 3 to 4 metres setback to rear boundaries, or basements traversing the centre of block, are unacceptable and undermine a very significant objective of the DCP for Telopea which seeks support adequate deep soil networks. These networks capitalise on the location of existing significant trees in rear suburban yards, but also allow for infiltration of water, maintain neutral ground water movement, promote the healthy growth of trees and vegetation, and reduce heat island effect.

The principle for the rear setback is also integral for organising the spaces between buildings to improve overall residential amenity.

Street Setback

Development on all sites must comply with the 4m to 6m front setback to create a continuity of the streetscape. The proposed 3m setback will not deliver on objectives for the front setback to contribute to tree planting and will greatly diminish the perceived proportion of the street width to building height ratio.

Isolated sites

The creation of isolated sites remains a significant issue in the Precinct and the Isolated Sites Study does not provide sufficient justification for their isolation. There are four isolated sites in the North Precinct and one site in the South Precinct of particular concern, and all sites would either become undevelopable (noting Council does not support variation to its controls for apartment development on sites with less than 24 metre site frontage and 0 metre side setbacks) or contribute to already excessively long building facades if left unamalgamated. There are some observed ADG non-compliances in relation to privacy where apartments primarily face side and rear boundaries, also affecting the redevelopment potential of neighbouring sites.

This is further supported by the State Design Review Panel in their advice to the applicant which states *"Building envelopes at isolated sites (North & South Precincts) - provide greater substantiation of the merit for variance from the DCP and LEP".* (refer Appendix MM).

Council's Urban Design Analysis (at **Appendix 1**) shows the improved built form outcomes within the Northern Precinct when designed to be consistent with the controls contained in the Telopea DCP. These benefits include achievable maximum allowable FSR, improved side, rear and front setbacks and deep soil zones, break in buildings and favourable outcomes for the isolated sites.

Given the sheer size of LAHC land holdings, only a few sites that will be isolated and the timeframe in which LAHC can achieve this, it is not unreasonable for the site purchase strategy to be demonstrated and potential future amalgamation to occur.

5.3 Stage 1A

The site plan presented for Stage 1A (Polding Place) exhibits a far more coherent built form arrangement than previous schemes shown to Council. A greater sense of address has been provided to buildings on site, and the internal loop road provides future public open space with functional access and sensible delineation from the built form. The following floorplan issues have been noted for resolution:

- 1 bedroom units with unusually large pantry spaces that may risk being used as windowless bedrooms in the future.
- Bedrooms that only have access to light through narrow and deep light wells.
- Bedrooms accessed directly off kitchen or dining spaces.
- 3 bedroom units with undersized living and/or balcony spaces.

Council objects to the basement car parking access via Winter Street and request that access to the residential basement car parking should be solely via the Mews Street. It is considered that Winter Street is very narrow and two-way traffic movements would be restricted due to any on-street parking. Further, there are issues with sight lines at the intersection of Adderton Road and Winter Street, and any additional traffic would be confronted with a substandard intersection.

5. Public Domain

Council supports the schematic design suggested for the public domain for Stage 1A however the level of finish is higher than Council would normally permit which has ongoing maintenance and budget implications. The following design documentation is required to ensure the public domain complies with Council's requirements.

From the drawings provided, the public domain that is new and or to be upgraded will be delivered as per the Stage 1A of the Staging Plan and will include the upgrading of Sturt Street (east and west), the construction of the Adderton Road link, upgrades to Adderton Road (east side) and the new Mews Street and the two parks. The core area of Telopea is made up of a number of stages that will include the upgrade and construction of new streets and footways, pedestrian parks and plazas and pedestrian links. Concept designs for the public domain outside of Stage 1A scope of works were not provided.

Council requires the public domain works for each stage to be designed and documented as per the requirements set out in Chapter 2, 2.3 Development Application of the Parramatta Public Domain Guidelines (PDG) and that each stage be fully coordinated and integrated with any adjacent stages to ensure seamless integration of all stages, especially when considering civil design issues and the continuity of soil, groundwater level and tree canopy networks plus the look and feel of the public domain across the entire project when fully realised.

As per the PDG, the elements and materials within the public domain should clearly identify the public domain publicly accessible 24/7 using Council's standard suite of public domain materials and construction details. The plans provided suggest a high-end finish typically associated with private developments within private space. This level of finish within the public domain that will be handed over to Council and or will be publicly accessible 24/7 is not supported by Council.

The documents for Stage 1A should be prepared to meet Chapter 2, 2.3 Development Application of the PDG as follows, but not limited to:

a) While the public domain plans show general layout of elements, which is generally supported, the design drawings do not provide adequate detail to confirm the minimum amount (material and size) of public domain amenity being provided.
b) The drawings provided show inconsistencies which suggest the design is not final and or fully coordinated across disciplines, which could have a significant impact on how the public domain is constructed and used: the upper Mews Street is described as a one way street with a left turn only at Sturt Street/Adderton Road Link and in the process being forced onto Adderton Road. However, the civil vehicle swept path dwgs show a two-way street with left in/out at this location; Mews Street is two way at the lower level and one way at the upper level, but there is no opportunity to turn around and exit Mews at the lower level, and avoid being forced onto Adderton Road.
c) The civil drawings show typical cross sections of the road reserve and footway (footpath and verge) with cross falls of min 3%, which exceed min 1% - max 2.5% cross falls as per AS1428.2 and does not meet DDA requirements. The cross-sections offer only high level, generic detail with no certainty they will work across the full scope of works. The PDG requires a detail set of alignment drawings (engineering cross section at CH points) to ensure proper and adequate civil and AS1428 falls are achieved and no untoward impact on existing conditions beyond the site.
d) All public domain (streets and parks) to be handed over to Council should be on deep soil, not basement. Where a street is proposed over basement, ie Mews Street, that part or all of the street as agreed by Council should remain in private ownership. That said,

the public domain should clearly appear as a public asset publicly accessible 24/7. The layout and arrangement of public domain elements and materials should be consistent with that found in council owned public domain and outlined in the PDG. No details for Mews Street are provided, in particular where trees are on basement; these trees should be planted in tree pits in set down slab with soil volumes and depths as per the Apartment Design Guidelines (ADG).

e) Street Footway (path and verge) should have a min overall width to be 3.5 from back of kerb to boundary. Elements within the footway should show typical layout dimension in section and on the plans. All footpaths should be in situ concrete, min width 1800mm and hard against the boundary or as agreed by Council.

f) The pedestrian link to Manson Street should use Council's standard in situ concrete footpath detail or as agreed by Council.

g) Periodic rest points should be considered along the pedestrian link at Manson Street and other streets as agreed by Council.

h) Shareways are required as part of the upgrade to Sturt Street and possibly other streets. This asset is not identified on the public domain drawings. This asset should be included on the plans, subject to Transport (Bicycle) comments, and coordinated to work around existing trees and other public domain elements as agreed by Council.

i) Pavement in parks and footpaths separating building edge from the park should be in situ concrete, min width 1800mm, and hard against the boundary or as agreed by Council.

j) Access to parks should be inclusive and equitable. Where steps are used, graded walkways (min 1:20 grade) should be provided also. Use of ramps (1:14 grade) should be avoided or minimal.

k) Access to buildings should be inclusive and equitable. Where steps are provided, graded walkways (min 1:20 grade) should be provided as well. Use of ramps (1:14 grade) should be avoided or minimal.

l) All kerb ramps to be aim directly to their opposite kerb ramp.

m) Any overhead powerlines in the streets should be undergrounded.

Upgrades to the public domain are delivered via a condition of an approved development application and extends from the site boundary and or building entry to the kerb and for the full length of the site's street(s) frontage. Public domain works beyond the approved DA scope of work are typically delivered by the VPA.

6. Open Space

Access to adequate public open space is critical to the health and wellbeing of future residents within the Telopea Precinct, whom will predominately live in apartments without access to private backyards. New open space needs to be high quality and robust to sustain a high level of demand from the surrounding high density community, whilst being designed to promote activation and passive surveillance consistent with CPTED principles. The design should maximise opportunities for both recreation and social gathering to support community cohesion and connections between the diverse community.

Requirements Open Space

New public open spaces to be dedicated to Council are to be consistent with the following guides in relation to minimum size, shape, road frontage, topography and solar access requirements to maximise capacity and useability:

- Best-practice performance criteria in Draft Greener Places for Design Guide (NSW Government Architect) https://www.governmentarchitect.nsw.gov.au/resources/ga/media/files/ga/discussion-papers/discussion-guide-greener-places-2020-06-03.pdf; and

- The principles outlined in Council's Community Infrastructure Strategy https://www.cityofparramatta.nsw.gov.au/community-infrastructure-strategy

Public open space must also be free of significant constraints or hazards, such as flooding, infrastructure easements and underground carparking

Hilltop (Neighbourhood) Park

Council is supportive of the delivery and dedication of a neighbourhood park associated with the residential development for Stage 1A. However the following issues are required to be amended before Council agrees to its dedication:

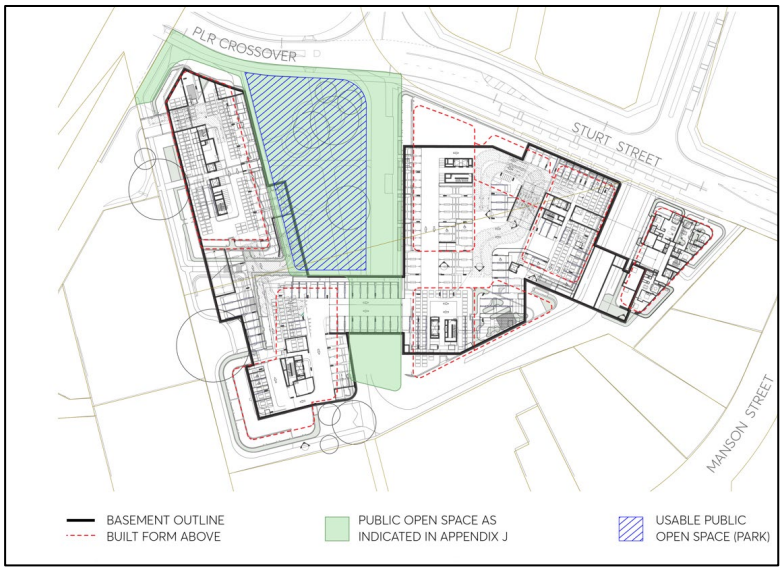
a) The proposed useable public open space to be dedicated to Council measures less than the 3,536sqm stated in the EIS and annotated in the Stage 1A Design Report. Council measures the open space to be approximately 2,200sqm including footpaths or 1,830sqm excluding pedestrian curtilage. Refer **Figure 4** showing the difference in useable public open space and the application's 'public' open space.

b) Removal of the underground carparking that encroaches along the south-western interface (refer **Figure 4** below) and is to be removed to ensure deep soil throughout.

c) Design amendments as follows:
   - Requires social gathering facilities (picnic tables, shelters and BBQs) to ensure adequate activation and complement the recreational / events focus of the adjacent Arrival Plaza.
   - Increase turfed areas / reduce garden beds / remove water feature to maximise useable open space and reduce ongoing maintenance burden
   - Continuous pedestrian pathway required along western private property interface connecting with Adderton Road to provide for clear delineation.
   - Remove play equipment and consolidate into large playground zone within Arrival Plaza.
   - Sections required to adequately demonstrate pathway levels comply with DDA accessibility standards.

Furthermore, the Neighbourhood Park within the wider private residential lot (Pt Lot 92) to be dedicated to Council is be subdivided. as a separate lot.

Figure 4: Plan indicating extent of public open space and encroachment of basement.



Station Arrival Plaza

Council is supportive of the delivery and dedication of the Arrival Plaza at the Telopea Light Rail stop, however the following issues are required to be amended before Council agrees to its dedication:

a) Northern portion requires consolidation into larger 'green' useable spaces through expansion of turfed areas and consolidation / reduction of pathways / garden beds consistent with CPTED principles. Small scale of pathways and spaces feels enclosed and creates small odd shaped gardens and turf areas that are suboptimal for recreational use and problematic for ongoing maintenance;

b) Justification for removal of existing trees and retention where possible; and

c) Design amendments as follows.

- Relocate large outdoor chess set (as requires moveable equipment and should be associated with the library or other staffed Council facilities) and replace with chess table / seat units.
- Replace day beds with bench seating as more appropriate for the light rail pedestrian throughfare.

d) In relation to the Materials & Furniture Palette provided in the plans:

- Stone pavers to be sealed
- All gardens to be provided with irrigation
- All stairs, ramps etc. to be designed to DDA requirements including tactile etc (Access reports will be required).
- Furniture to be 'off the shelf' type, not bespoke (Further details of furniture to be provided for approval e.g. manufacturer, type etc.)
- Bins to be provided for 'general waste' only, no recycling.
- Bench seating (FN04, FN10) to have backrests and armrest provided in sections for DDA compliance.
- Drinking fountain to be wheelchair accessible type with drain.
- Play equipment PE01, PE03, PE5, PE7, PE09 – timber not to be used (Alternate options required)
- Play equipment and shade structure PE02, PE04, PE08 – further details required prior to approval
- Foosball table PE06 not supported

- Table tennis table PE10 to be all steel construction including 'net'
- Outdoor Chess PE11 not supported in current form. Consider fixed in-situ regular size board/ tables and seat unit
- WF01 water feature not supported.
- Further details of fencing required

Furthermore the Arrival Plaza including part road reserve (Sturt Street) to be dedicated to Council is be subdivided as a separate lot.

7. Traffic and Transport

7.1 Stage 1A

Raised Crossings

For Stage 1A, a raised threshold is proposed in Sturt Street North connecting to the new retail plaza which looks to be designed to function as a raised pedestrian crossing although no details are provided regarding signage and linemarking. This location is likely suitable for a raised pedestrian crossing considering it is opposite the proposed pedestrian spine and is in close proximity to the Light Rail Stop. However, more information is required within the Traffic Report in regards to forecasted pedestrian volumes to confirm that Council's Interim Warrants for Pedestrian Crossings are met at this location. Furthermore, the design of the crossing must comply with the current Australian Standards and Austroads Guidelines for a Raised Pedestrian Crossing.

An interim raised pedestrian crossing incorporating a separated cyclists crossing is to be installed on Manson Street just south of Sturt Street until Traffic Signals are installed. Raised Pedestrian Crossings with separated cyclists crossings are also to be installed at both ends of Mews Street at Sturt Street. The locations of the crossings is to be ensure that 6 metre space is provided between the crossing point and the intersecting road to ensure that a waiting vehicle does not obstruct pedestrians or cyclists travelling along the shared path.

Pedestrian Refuge Islands

The pedestrian refuge island is located behind a crest for westbound traffic in Sturt Street. This crests obstructs the Approach Sight Distance for westbound motorists in accordance with Austroads Guide to Road Design Part 4A Section 3 and will mean that the pedestrian crossing point will not be clearly visible to approaching motorists. The Crossing Sight Distance requirement looks to be met but needs to be verified by the applicant. Due to the bend, the north side of New Link Road is to be kept clear of visual obstructions to ensure adequate sight distance at the pedestrian refuge and at Sturt Street north.

The traffic lane widths at this refuge island are not shown on the civil plans however, they appear to be inadequate and are unlikely to comply with the RMS TDT 2011-01a for pedestrian refuge islands.

The eastern island of the refuge island is set back away from the intersection. Accordingly, a reduced length median island is not warranted and the size of the island should be increased if vehicle turning paths allow for it. Appropriate delineation is also required for this island to guide traffic around it.

Cycleways

The plans indicate that Sturt Street provides both a shared path for pedestrian and cyclists as well as a on road painted cycleway on the southern side of the street. It is not necessary to provide a on road painted cycleway if a shared path is provided. In addition, Council

supports the delivery of a shared path along Shortland Street, and it is not necessary to provide an on road painted cycleway if the shared path is provided.

It is unclear from the landscape and civil drawings the cycleway accessibility for the new link road over the Light Rail line and through the Plaza. There are multiple pedestrian and cyclist interfaces with footpaths, shared paths and the active transport link. It needs to be included on a single pedestrian and cycleway drawing so it is clear what is and is not provided.

Furthermore, the Traffic Analysis in section 4.3 uses a bike route map, not the endorsed Parramatta Bike Plan.

Parking Bays

The parking bays comply with the on-street parking standards in regards to dimensions. However, it is noted that the amount of on-street parking is very low especially near the light rail. A total of only 8 spaces are proposed in Sturt Street North with 4 on each side. This is unlikely to be adequate for the kiss and ride requirements for the light rail.

All parking bays are to have time restricted parking to ensure that residents do not park in these spaces all day and that visitors have places to park. The parking bays are also not to be line marked as this restricts capacity.

Stage 1A Vehicle Access

Council requests that access to the basement car park be solely from the new internal road Mews Street (via Sturt Street) and that basement access from Winter Street be removed. It is considered that Winter Street is very narrow and two-way traffic movements would be restricted due to any on-street parking. Further, there are issues with sight lines at the intersection of Adderton Road and Winter Street, and any additional traffic would be confronted with a substandard intersection.

Access driveways into the site is to design in accordance with the Australian Standard AS 2890.1:2004. All vehicles are to enter and exit the site in a forward direction.

On-site manoeuvring of vehicles into and out of the site and for critical manoeuvring areas within the basement carpark are to be demonstrated in accordance with Appendix B of AS 2890.1 – 2004 and to be submitted with the final DA.

Wade/Mews/Sturt Intersection Design and Mews Street General Comments

This is a 4-way cross intersection, accordingly, a continuous footpath or driveway entry treatment into Mews Street is not suitable and will not comply with the Australian standards (see AS 2890.1 Figure 3.1 – Prohibited Locations of Access Driveways). Accordingly, the design of this intersection is to be revised to a traditional cross intersection.

Swept Path diagrams have not been provided for all turning movements at this intersection for a 12.5m Heavy Rigid Vehicle (HRV). However, from the swept paths provided within the Concept Plan (Appendix CC), it appears the geometry of this intersection is not sufficient to allow for left turning 12.5m and therefore will need to be revised to provide wider kerb returns. It is to be noted that vehicles are not to encroach the on-coming traffic lanes at cross intersections where centre linemarking is required per the standards. It is further noted that access by 12.5m HRV size vehicle is important for waste collection and removalists.

The Civil Plans do not clearly indicate where the one-way restriction in Mews Street starts. This needs to be shown in the signs and linemarking plan that must be provided in conjunction with the Civil Plans to allow Council to assess the proposed Road Designs.

The landscape plans indicate that the Mews Street will be constructed with pavers/cobblestones. This is not acceptable on traffic grounds as this pavement type is only

suitable for shared zones and this street will not meet the criteria for this. As such, the pavement design for Mews Street is to be standard asphalt pavement.

There are two bus stops proposed on Mews Street, one near New Link Road and one near the bend as shown in the Sheet 3 of the Swept Path diagrams provided in the civil plans. Further clarification is required as to why two bus stops are required on Mews Street.

The bus stops proposed on Mews Street will need to be designed in accordance with TfNSW's State Transit Bus Infrastructure Guide. Swept Path diagrams have not been provided to show buses can safely manoeuvre in and out of the indented bus bays.

There appears to be some inconsistency in the parking bay layouts between the Civil Plans and other plans such as the master plan and landscape plan. There are two parking bays provided in Mews Street near New Link Road as shown in the Civil Plans however, the master plan and landscape plan shows three parking bays at this location.

'No Stopping' restrictions will need to be installed where road widths are narrow to ensure 2 vehicles can pass concurrently.

Mews/Sturt/New Link Road Intersection Design

The length of the right turn bay in Sturt Street East does not comply with Austroads Guidelines and needs to be extended (ref. AGRD Part 4A Section 5.2).

Swept path diagrams have not been provided for 12.5m long vehicles other than that for buses travelling from Sturt Street North to Sturt Street east and vice versa. Swept Path diagrams for this size vehicle are required for all turning movements.

Kerb ramps across Mews Street are not shown on the engineering plans however, it is to be provided for wheelchair and pram users.

Adderton Road

It is noted that there is trend for head-on collisions in Adderton Road north of Manson Street. As such, the proposed removal of any median islands as shown in the Concept Plans is not supported by Council.

The design of the Winter Street and Adderton Road intersection does not take into account the existing footpath on the east side of the road. It is noted that limited information has been provided on the civil plans regarding this location

It is recommended that T1 turn lines (to assist drivers undertaking turning movements within intersections) be installed for the right turn into New Link Road from Adderton Road. The stop line for New Link Road is set back further away from the intersection and the T1 lines can help minimise the possibility of drivers travelling head on towards vehicles sitting at the stop line on New Link Road.

Further, a pedestrian connection is required from the new link road (Sturt St) to footpath on southern side of Winter Street.

Other Intersections

The Geometry at the below listed intersections will need to be amended and wider kerb returns or travel lanes may be required to ensure that a 12.5m long vehicle is able to manoeuvre through them in any direction without crossing the centrelines within a road or mounting/overhanging the kerbs:

- Sturt Street North and Shortland Street
- Shortland Street and Marshall Street
- Sturt Street, Marshall Street and Manson Street
- Sturt

For these intersections, swept paths are to be included in any revised plans to demonstrate that a 12.5m long vehicle will be able to make all turning manoeuvres.

Street trees and other visual obstructions are to be kept clear on all approaches to an intersection to ensure driver sight lines are not obstructed to approaching vehicles and any regulatory signage. The landscape plans currently show the street trees located to close to intersections. The plans must ensure the trees are appropriately located and driver sight lines take into account bends on approaches to intersections and comply with Austroads Guide to Road Design Part 4A.

7.2 Telopea Concept

There are concerns at this stage regarding the geometric design of the intersections and the narrow travel lanes which are unlikely to work if the turning paths are checked for 12.5m long vehicles. Addressing this could have some flow on effects on the proposal and as such, should be done before any approvals are given.

There is inconsistency in the plans that have been submitted, particularly between the landscape plans and civil plans. Furthermore, the Civil Plans did not include any information regarding proposed signage and had limited information on the line marking. Not having this information makes it difficult to assess some aspects of these plans from a Traffic perspective. As such, at least a preliminary signs plan must be provided to Council before any approval are given to this application.

Eyles Street Pedestrian Spine

There is inconsistency in the proposal regarding the pedestrian crossing facilities across the Pedestrian Spine. On the Civil Plans for the Concept Proposal, pedestrian crossing facilities are only shown at Sturt Street North and at Fig Tree Lane. However, other plans such as the master plan and landscape plans, a crossing facility is shown on all intersection roads through the pedestrian spine.

Pedestrian crossing facilities will should be installed at the intersecting roads through the Pedestrian Spine. The Traffic Report is to be revised and comment on the forecasted pedestrian volumes that will be using the pedestrian link to determine if Council's Interim Warrants have been met for a raised pedestrian crossing. It should be noted that any pedestrian facility that is provided must meet current standards and technical directions.

Bus Stops and Parking Bays

There are existing Bus Stops in Sturt Street, Shortland Street and Manson Street. It is not clear if these bus stops are being removed or retained. If these stops are being retained, a bus bay must be installed at these locations as the current proposal will have buses blocking the travel lanes close to intersections which is likely to cause delays to traffic or may cause some motorists to go to the opposite side of the road to get around the bus.

The existing bus stops on Sturt Street will need to be relocated due to the signalisation of Sturt Street/Marshall Street/Manson Street intersection. The current location of the bus stop on the northern side will require buses to stop across the intersection and across a signalised pedestrian crossing. The currently location of the bus stop on the southern side will require buses to sit on the detector loops, adversely impacting on the traffic signal performance.

All parking bays are to have time restricted parking to ensure that residents do not park in these spaces all day and that visitors have places to park. The parking bays are also not to be line marked as this restricts capacity. The parking bays are to be designed in accordance with AS2890.5-2020.

All bus bays are to be designed in accordance with TfNSW's State Transit Bus Infrastructure Guide.

Wade Street

The median island in Wade Street also double as a pedestrian refuge island at Shortland Street however, the width of this is too narrow to comply the Australian Standards and the

TfNSW Technical Directions for Pedestrian Refuges that require the medians to be at least 2m wide. Accordingly, the design is to be revised to ensure compliance with these standards. The location of the crossing point in Wade Street at Shortland Street is well clear of the pedestrian desire line. As such, it is unlikely for pedestrians to use this facility and are more likely to cross the road closer to Shortland Street in their direct path of travel.
Shortland Street

Looking at the long section, it would appear that Shortland Street has the priority all the way through. The road has a steep grade which is likely to create an issue with vehicle speeds in the eastbound direction.

Sturt Street

The proposed signals at the intersection of Sturt Street/Marshall Street/Manson Street is subject to meeting TfNSW's warrants (ref. TfNSW Traffic Signal Design Guide Section 2 Warrants). Approval will also need to be obtained from Council and TfNSW under Parramatta's Traffic Committee process.

Table 17 of the traffic report states that 40m right turn bays are provided on each approach to the new signals at Sturt Street/Manson Street intersection. This was not reflected in the concept engineering plans which only shows a right turn bay provided on Sturt Street eastbound and Manson Street northbound. The right turn bays are also less than 40m in length and the right turn from Sturt Street into Marshall Street is also restricted.

The width of the westbound lane on Sturt Street at Marshall Street intersection is approx. 4.9m wide. This can cause safety issues as the width allows two vehicles to stop at the stop line when there is only one lane on the departure side. This can also increase intersection crashes as vehicles are merging within the intersection.

Evans Road

Table 8 in the Traffic Report identifies that the signalisation and upgrades of Pennant Hills Road and Evans Road intersection is required to accommodate the future traffic growth in this precinct. Section 6.8 of the report states that the upgrade of this intersection is anticipated to be staged based on dwelling occupancies within the Telopea precinct and that details will be determined in consultation with TfNSW, Roads and Maritime and Council. The report further states that the interim intersection upgrade will be completed by Roads and Maritime (now TfNSW).

The traffic report does not clearly outline the construction timeline of the staged intersection upgrades at Pennant Hills Road and Evans Road. This intersection is considered critical to provide improved regional connections to the growing Telopea precinct and priority should be given at this location.

Intersection Designs

There are concerns with regards to road safety at the intersection of Shortland Street and Marshall Road given the steep downhill grade in Shortland Street. To help highlight the presence of the cross-intersection, pedestrian refuge islands need to be installed on both approaches of Marshall Road. It is noted that in earlier intersection designs, Marshall Road had priority over Shortland Street.

Kerb ramps are not provided for pedestrians crossing Shortland Street, west of Marshall Street. This is to be provided for wheelchair and pram users.

Generally for most intersection where a right turn bay is provided, they are small and offer little storage space for vehicles. Furthermore, the length of the turning bays do not appear to comply with Austroads Guide to Road Design Part 4A section 5.2.

Similar to comments made regarding the Stage 1A Proposal, swept path plans are missing for a number of turning movements for a 12.5m long vehicles. These must be included in the plans. There are concerns that the geometric design of a number of intersections does not satisfactorily allow for the safe movement of these vehicles.

SIDRA Modelling

There are inconsistencies found in the SIDRA modelling undertaken. For example, Pennant Hills Road and Evans Road intersection performs at a LOS of E for both peaks in the base scenario (2016) however, it performs at a LOS of B and A for AM and PM peak respectively in the future base scenario (2036) although no intersection upgrades are proposed and there is background traffic growth. It is unclear why this intersection can perform better with additional traffic and no upgrades.

The traffic report only provides SIDRA output summaries for Adderton Rd/New Link Rd intersection although modelling was undertaken at a number of intersections. The output summaries for all intersections modelled should be included in the report for assessment. This will help in determining the optimum layout at a number of intersections such as the length of turning bays.

7.3 Parking and Access

Stage 1A parking

In accordance with the Telopea Precinct DCP rates as per **Table 5**, the proposed Stage 1A development is to provide minimum 372 residential parking spaces and 89 visitor parking spaces. The proposal provides a total of 416 on-site car parking spaces, including 372 residential car parking spaces and 44 visitor car parking spaces. On this basis, the proposed Stage 1A will have 42 visitor parking shortfall. Council supports increase in the visit parking provided to a minimum of 89 spaces.

Table 5 Parramatta DCP 2011 – Section 4.3 Telopea car parking rates for residential

Type of Apartment	Spaces/unit
3-bedroom and more	1.4 space per unit
2-bedroom	0.9 spaces per unit
1-bedroom	0.6 spaces per unit
Studio	0.6 spaces per unit
Visitor	1 space per 5 dwellings

Based on the DCP, a minimum of 1 space is to be allocated to car share for developments with 50 or more dwellings. Given that Stage 1A of the Telopea Precinct is proposed to provide 443 residential dwellings, minimum one (1) car share space is to be provided. It is noted that the submitted Transport and Accessibility Impact Assessment report indicates that two (2) car share spaces adjacent to the site in Sturt Street will be provided which is supported.

Bicycle parking is to be provided at the rate of minimum 1 bicycle storage space per dwelling for the residential component of the development and minimum 1 bicycle storage space per 15 dwellings for residential visitors. Therefore Stage 1A would be required to provide a minimum of 443 bicycle parking spaces for residential dwellings and 30 bicycle parking spaces for residential visitors are to be provided. It is noted that the submitted Transport and Accessibility Impact Assessment report indicates that 473 bicycle parking spaces will be provided which is supported.

It is recommended that a Green Travel Plan be provided for the proposed development to encourage resident to use walking, cycling or public transport instead of private car.

Parking & Access - Concept Plan

Off-street parking for all stages within the Telopea Precinct is to be provided in accordance with the requirements of the Telopea Precinct Site Specific DCP. These rates are consistent with the Roads and Maritime Services' Guide to Traffic Generating Developments (2002) for Metropolitan Sub-regional Centres. Details are to be illustrated on the submitted plans with the final development applications for each stage.

On-site parking and loading facilities are to be designed in accordance with the requirements of the AS 2890.1, AS 2890.2 and AS 2890.6. Details are to be illustrated on the submitted plans with the final development applications for each stage.

Where sites have access from a secondary street frontage, parking and servicing access to the sites is to be provided from the secondary street. Access driveways into the sites are to be designed in accordance with the Australian Standard AS 2890.1:2004. All vehicles are to enter and exit the site in a forward direction.

On-site manoeuvring of vehicles into and out of the site and for critical manoeuvring areas within the carpark are to be demonstrated in accordance with Appendix B of AS 2890.1 – 2004 and to be submitted with the final development application for each stage.

A condition is to be imposed for each stage of the Telopea Precinct considering providing a Construction Pedestrian and Traffic Management Plan (CPTMP) prior to the commencement of the works to the satisfaction of Council's Traffic and Transport Manager. This requirement can be conditioned in development application stage.

8. Trees

As detailed in Council's submission, it is considered that the reports at Appendix V1 Arboricultural Impact Appraisal and Method Statement – Telopea Stage 1 and 1A Revision B prepared by Naturally Trees dated 18 June, 2021 do not adequately justify the removal of a significant proportion of high value trees. The reports lack sufficient detail to demonstrate an arboricultural impact assessment has been undertaken in accordance with the requirements of AS-4970-2009 Protection of trees on development sites.

Council recommends that the Arboricultural Impact Appraisal and Method Statement be revised to:

- Undertake a thorough and site specific arboricultural management process in accordance with Section 2 of AS4970-2009 Protection of trees on development sites and Council's standard arboricultural reporting requirements (refer below).
- Update tree schedule to reflect accurate tree data collection and update recommended tree protection areas accordingly.
- Take into consideration all available documentation to enable a thorough impact assessment, including but not limited to architectural plan set, Civil documentation, Stormwater and Services documentation and Landscape Documentation.
- Guide design modification to ensure all high value trees nominated for retention within the Masterplan are adequately retained and protected to ensure longevity within the landscape post development.
- Where tree removal is unavoidable, appropriate site specific arboricultural justification is required for each tree. Recommendations are to be made for replacement within the precinct.

Below is Councils standard arboricultural reporting requirements:

a) An Arboricultural Impact Assessment (AIA) and Tree Protection Plan (TPP) prepared by an AQF Level 5 arborist must be provided upon lodgement of the development application. The AIA shall identify all trees equal to or greater than five (5) metres in height located within the subject site and adjoining properties where located within three (3) metres of the common property boundary or where a tree protection area

extends into the development site. The report must identify all trees proposed to be retained or removed as a result of the proposed works and quantify any potential impacts incurred.

b) The arborist report must provide a tree removal/retention plan at 1:100 or 1:200 scale showing the location of all trees equal to or greater than five (5) metres in height located within the subject site and all affected trees and located on the adjoining properties within three (3) metres of the common property boundary.
c) The plan must include survey detail and show the existing ground levels at the base of each tree, the actual canopy spread to scale, the location of and diameter at breast height (DBH) of the trunk of the tree and a tree number (All trees shall be plotted by a registered surveyor).
d) A schedule documenting botanical and common name, age class, dimensions inclusive of, height, canopy spread, trunk diameter at breast height (DBH), calculated Tree Protection Zone (TPZ), Structural Root Zone (SRZ), calculated development incursions (if any), the health, structure, condition of the tree and provide recommendations in relation to retention values in accordance with AS4970-2009 Protection of Trees on Development Sites.
e) The report must include a tree protection plan where trees are proposed to be retained. The tree protection plan shall identify the tree protection area for each tree and clearly identify the percentage of development encroachment to the root system and canopy of the tree. The tree protection plan shall be site specific and show all proposed development works, including the location of the above and below ground structures and services.
f) The report must list all documentation referenced during the assessment process and demonstrate due consideration to the development in its entirety. The report must address all likely impacts of the proposed development on all trees recommended for retention, and particularly any tree that may require site specific protection measures to minimise impact. Potential development impacts will include all above and below ground structures and services and any potential impacts to the tree canopy.
g) Detail methodology that has been used to evaluate the health and condition of the trees; determine retention values and determine tree protection zones.
h) Where retained trees have a development setback and tree protection zone established, a recommended tree protection specification and diagram must be provided in accordance with AS4970-2009 Protection of Trees on Development Sites. All site plans are to be amended to indicate the tree protection zone requirements as set forth in the arborist's report along with any other note requirements that the arborist deems necessary to ensure the long term health and sustainable retention of the trees.

9. Sustainability

Council has reviewed the Sustainability Report and BASIX Reports contained in the EIS. The application commits Sustainability Commitment 1 - Provisions for future EV infrastructure'. However, it is not confirmed via Stage 1A or Concept Plan that these provisions will be delivered.

Council requests that the development commit to Council's DCP Telopea Precinct requirements in relation to electric vehicle infrastructure. These controls are consistent with NSW Government incentives for greater EV take up in NSW (NSW Electric Vehicle Strategy). It is further noted that EV readiness is recognised as a key action to achieving Net Zero Emissions by 2050, a commitment by the NSW Government. It is also consistent with the proposed amendment to the Apartment Design Guidelines in the Design and Place SEPP *Explanation of Intended Effect* (February 2021) to "*Require development to be EV-ready, providing sufficient power to the meter board to enable vehicle charging at every car space, and delivering power supply to each car space for future conversion and adoption."*

Council's EV controls focus on future proofing and EV ready development with a small proportion of EV charging capacity from occupation in the shared/visitor and bike parking. It limits requirements to the elements too difficult or costly to retrofit (e.g., circuits and distribution boards), as well as providing space for the future installation of meters, cables, conduit etc.

9.1 Water Efficiency and Reuse

The application commits Sustainability Commitment 1 the following measures for water efficiency:

- Water efficient fixtures and building systems and water reuse
- Commitments around NABERS (5 star for all non residential uses) and BASIX (target 40 on average) targets for all residential buildings
- BASIX certificates:
- Rainwater tank for the residential buildings. The collected water to be used for landscape irrigation.

Council requests that the application demonstrate compliance with the DCP for the Telopea Precinct requiring new development include dual piping. This what is being required for major precincts, including the Parramatta CBD, within Greater Parramatta and Olympic Peninsula Precinct (GPOP) and is underpinned by a letter of support from Sydney Water which notes that they "expect to manage most of GPOP's water locally via a new integrated water and resource recovery facility to be built in the Camellia industrial precinct. Noting that "this facility and network have been identified as priority infrastructure for the next five to ten years in the Government's draft 'A City Supported by Infrastructure Place-based Infrastructure Compact Pilot' (November 2019)." Additionally, Sydney Water have advised that individual unit metering is not required for dual piping, only a boundary meter.

Furthermore, Greater Sydney water security is a high priority initiative in the National Infrastructure Priorities 2021, with a timeframe of concern of 5-10 years. The ability for buildings to connect to a recycled water system is required to support water security and provide equitable access to a potentially cheaper source of water.

9.2 Urban Heat

The application states that the Sustainability commitments 2 and 4 as follows:

- Urban heat island reduction and mitigation strategies
- Green roof provision
- strategies to reduce heat island effect and policies to deal with extreme temperatures

The urban heat island effect mitigation strategies do not satisfy Council's DCP requirements for roof surfaces, vertical facades, awnings, heating and cooling systems, green roofs and walls and also glare, as follows:

- The documents do not show the extent of the facades with reflective/non reflective surfaces and also shading design.
- The ventilation systems for apartment units is defined as 1 phase air conditioning 3 star and also ceiling fans. For social housing, radiant heating system and ceiling fans will be used. Meeting the heat rejection requirements of the DCP is not demonstrated for the residential units.
- The documents does not demonstrate the use of the proposed green roofs. Green roofs must be used for communal open spaces for residential developments or useable rooftop space for non-residential development. The interns of plant selection, maintenance, water proofing and structural certificate must be met.
- The documents do not show the material selection for the facade. Solar reflectivity from building materials used on the facade must meet the DCP requirements.

9.3 BASIX (Building Sustainability Index)

The Sustainability Report commits to an on average BASIX score of Energy 30 and Water 40, which is the average of the current target for these types of buildings (4-5 storeys Energy 35, water 40, and 6+ storeys 25 Energy water 40), with no commitment to beyond minimum compliance. Council request that the application consider higher BASIX targets. Council is proposing opportunities for higher targets for its growth precincts across the LGA, including the Parramatta CBD. Council believes that energy and water efficiency, particularly for social housing tenants, is very important as this translates into lower utility costs, an important part of housing affordability. We recommend that higher BASIX targets be applied to this concept approval and staged DAs.

Furthermore the documentation includes the BASIX certificates but not the BASIX stamped plans. These are to be provided so that this can be assessed fully.

The BASIX certificate shows induction cooktop and electric oven will be used for the residential units while the sustainability report has nominated electric cooktop as the preferred appliance for social housing. Electric cooktops are significant less efficient than induction cooktops and BASIX awards the lowest score to electric cooktops. Therefore the BASIX certificate does not match the proposed development unless induction cooktops are installed. The use of electric cooktops will result in excessive energy consumption, resulting in increased GHG emissions and increased cost for tenants.

10. Biodiversity

Vegetation clearing threshold under the Biodiversity Offsets Scheme (BOS) must consider all NSW native vegetation (including planted species) and not just locally indigenous species or remnant bushland. Submitted biodiversity report lacks justification as to why the BOS is not triggered and likely requires a Biodiversity Development Assessment Report under *Appendix D (Streamlined assessment module – Planted native vegetation)* of the Biodiversity Assessment Method (BAM) due to the significant number of native tree removals (unless a waiver is granted).

The biodiversity report identifies a patch of trees that are representative of Blue Gum High Forest, which is listed as a Critically Endangered Ecological Community under the *Biodiversity Conservation Act 2016.* This Plant Community Type is listed as an entity at risk of a serious and irreversible impact, and any direct or indirect impacts must be adequately assessed in accordance with the BAM under a BDAR.

A number of trees proposed for removal have also been identified to contain hollows or otherwise occupied by native fauna e.g., nests. The removal of hollows is a key threatening process and are to be offset through the installation of nestboxes with pre-clearance surveys required to minimise the potential for injury to wildlife. These mitigation measures should be guided by a Biodiversity Management Plan (or similar) e.g., number / type / location of nestboxes.

11. Waste Management (Stage 1A)

Waste generation rate

The development has used 40L/dwelling/week as the generation rate for recycling. The development will needs to use 60L/dwelling/week based on Council's waste generation rate for recycling. For a 442 dwelling development this is 26,520L. This would equate to 26L x 660L bins serviced a week. The development will need to demonstrate an increase the footprint of the waste holding area and storage area to accommodate the difference.

Access to the Garbage Holding area

Trucks are required to enter and exit in a forward direction and the use of a turn table is not permitted. Council requires trucks to be able to enter and exit in a forward within a three-point turn.

From the provided plans, it is not clear whether the waste holding area is located sub-street level. Further detail is required to understand the access, as access into areas below street level is generally not supported. Council also requires 4.5M clearance height throughout the truck's entire travel path.

All paths travelled by a waste truck will need to be rated to support a 25t vehicle.

12. Contamination

Council considers that further assessment of contamination will be required as the proposal progresses, and design aspects are incorporated that may impact or change current understanding of contamination and necessary management strategies. In areas where there is to be a change of use to a more sensitive type validation will be required indicating that these individual areas have been rendered suitable for the new use.

It is recommended that City of Parramatta Council (CoPC) Contaminated Land Policy and Procedure is considered and referenced in relation to the State Significant Development (SSD) development application (SSDA) for Concept approval for the staged redevelopment of the 'Telopea Concept Plan Area' (CPA), as well as for each stage of development.

The EIS advises that a detailed site investigation was prepared for Stage 1 by Environment Earth Sciences and the investigation made a series of recommendations regarding the preparation of an Environmental Management Plan and Asbestos Management Plan.

It is recommended that a detailed site investigation (DSI) covering soil, groundwater and subsurface gas is prepared prior to the release and approval of each stage of the Development to inform potential risks to human health and the environment in the context of overall redevelopment of the site. A copy of all contamination reports, remediation action plans and validation reports be provided to Council for stakeholder review and comment.

It is recommended that a DSI is prepared for all land proposed for dedication as parks and open space to identify any potential areas of concern with respect to contamination and inform a conceptual site model (CSM). The DSI must inform potential risks to human health and the environment in the context of open space and recreational landuse.

It is recommended that the proponent appoint an NSW EPA accredited site auditor to independently review all detailed site investigation reports, remediation action plans and validation actions prepared for each stage of the Development.

This shall ensure that the extent of all potential contaminants of concern and actual contaminants of concern are identified; that the methodology used by consultants and their interpretation of data are consistent with current NSW EPA regulations and guidelines and the National Environment Protection Measure (Assessment of Site Contamination) 2013 (as amended) and, appropriate conceptual site models inform any remedial action to treat land contamination.

The Site Audit Statement must verify that each stage of the land release is suitable for any specified use or range of uses, what management is required before the land is suitable for any specified use or range of uses and identify the person or authority responsible for current and any ongoing and future management of land contamination and remediation within each stage the project precinct.

13. Drainage and Catchment Management

All development will need to comply with all relevant planning and development controls as outlined in Council's Local Floodplain Risk Management Policy, Parramatta LEP 2011 and DCP 2011, as well as all relevant principles and guidelines outlined in the NSW Floodplain Development Manual Dated April 2005.

Due to the location, the extent of the proposed development, and proximity to The Ponds Creek the following should be considered as part of the application.

13.1 Riverine Flooding with inclusion of Overland Flow (5%, 1% and PMF)

A Flood Assessment Report prepared by BG&E (Appendix DD of the EIS) was submitted with the EIS and reviewed by Council. The following should be considered and updated in the flood study.

a. This study includes Creek flooding only. The TUFLOW model should include overland flow with stormwater pipes incorporated. This should include Pre-Development and Post-Development Scenario.

b. The flood study provided by the applicant (BG&E, 10/11/2020) highly under-estimated flow at upstream of Kissing Point Road in The Ponds Creek. The previous study by SKM (Subiaco Creek Sub-Catchment Management Plan, SKM, Final Report, June 2006) estimates flow to be 84 m^3/s which is councils approved study at present. However, flood study by applicant (BG&E dated 10/11/2020) estimates 64.5 m^3/s which is significantly less. While it is understood that flood study by SKM adopted ARR87 rainfall while flood study (by applicant) adopted ARR2019 rainfall, the result should be close enough or demonstrated that current study is correct.

c. Climate change scenario with sea level rise should be adopted included in accordance with the industry guidelines and latest DPIE recommended requirements.

d. Design case should be 50% blockage of underground stormwater pipes with Climate change as per ARR2019. However, sensitivity analysis for 0% stormwater pipe blockage and 100% pipe blockage should also be included.

e. For culverts, the application of blockage should be in accordance with ARR 2019 guidelines and the design flood level at the subject site should be higher of blocked and unblocked scenario.

f. Flood Planning Level should be design case 1% flood level plus 500 mm free board.

g. Appropriate tail water conditions should be incorporated in the model and sensitivity analysis with climate change and sea level rise should also be included in accordance with the industry guidelines and latest DPIE recommended requirements.

h. Any diminishing hydraulic capacity of the proposed drainage system due to climate change needs to be accounted for in the drainage system design.

i. Flood impact map (Post development flood levels minus Pre-development flood levels) should be prepared and included for the whole precinct. A table showing Pre and Post development levels and flows including changes should be included in the report for key locations for comparison in addition to outflows from the subject site. A difference map should also be included.

j. Pre-development and Post-development flow paths should be clearly shown, and safe conveyance should be demonstrated. For this hazard map as per ARR2019 should be prepared and included in the submission.

k. Electronic copy of TUFLOW model along with brief report should be submitted for review.

l. From a Floodplain Risk Management perspective basement car parking within the floodplain is not supported unless it can be clearly demonstrated the basement levels can be protected from all flood events up to and including the PMF. It would also be important to demonstrate how safe emergency flood evacuation access from the basement carpark levels together with fire exit / access requirements will operate (including disabled parking and access) with respect to exit doors for major flooding. This also includes other access such as lift doors / lift shafts and ventilation shafts etc. Details associated with the protection of any electrical equipment and plant would also need to be provided. The applicant would need to demonstrate that they have identified and appropriately addressed all flood related risks. Further controls from Council's Development Services Engineer's may also apply.

m. It is recommended that all basement access ramps be outside the PMF area or clearly demonstrated how they will be protecting against flood flows entering the basement levels for all event up to the PMF.

n. An adequate evacuation plan and flood warning system together with a formal Site Flood Emergency Response Plan should be provided for the proposed development (including basement levels).

o. The Flood Emergency Response Plan should be consistent with Council's Emergency Plan and consistent with the State Emergency Services (SES) Flood Response Plan for the Parramatta area.

p. If shelter in Place is proposed in the event of major flooding, then an Engineers report to certify that the building structure has been designed and constructed to withstand the forces of floodwater, debris, and buoyancy up to and including a PMF. Refer also to Council's Development Services Engineer's for further requirements that would apply.

q. All critical building services such as air-conditioning units, lifts, mechanical ventilation units, electrical and communications systems are to be located above the PMF level.

r. No basement levels shall be constructed below the natural groundwater water table.

m. The public road alignment shall be designed to avoid retaining walls within the public land. All retaining structures shall be owned and maintained by the private property owner(s).

13.2 Integrated Water Management Plan, JWP, July 2021

Integrated Water Management Plan (IWMP), JWP, July 2021 (Appendix EE of the EIS) was submitted and reviewed by Council. The following should be updated in the Integrated Water Management Plan.

a. It covers only Core area and not whole precinct as shown in the **Figure 5** below.

Figure 5 Extract from the Integrated Water Management Plan (pg3) of EIS

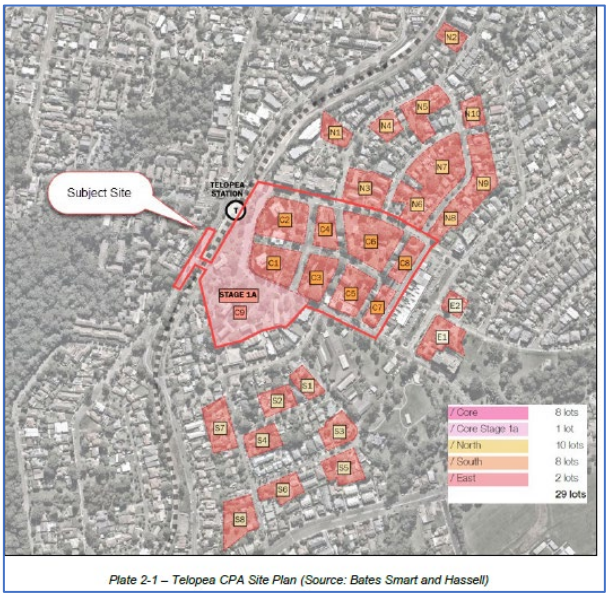


Plate 2-1 – Telopea CPA Site Plan (Source: Bates Smart and Hassell)

b. It should be integrated with riverine flooding, overland flooding, stormwater drainage and Water quality management covering whole precinct. Discussions, results and conclusions should be included regarding all elements i.e., riverine flooding, overland flooding, stormwater drainage and water quality managements.

c. Underground basins as public infrastructures (as proposed in **Figure 6** below) are not recommended and every opportunity to utilise landscaping area for above-ground storage should be sought due to repair and maintenance, structural integrity in long run, frequent siltation issues, regular cleaning requirements, traffic management required during cleaning, repair & maintenance and so on. Large underground structures under road carriageway and near intersections will not be permitted due to WHS issues during maintenance.

Figure 6 Extract from the Integrated Water Management Plan (pg7) of EIS

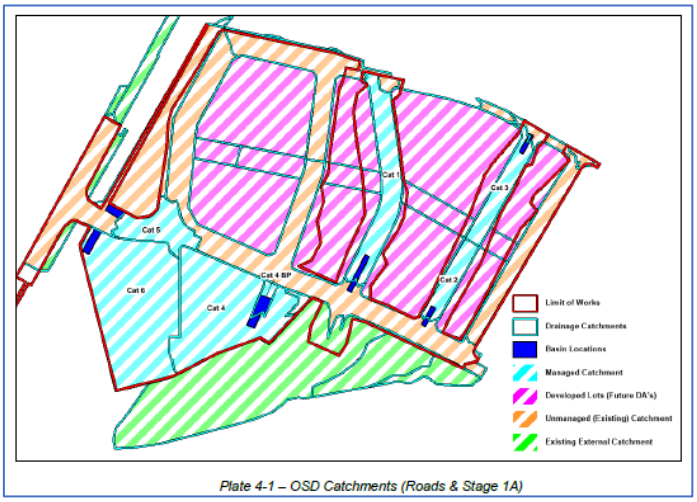


Plate 4-1 – OSD Catchments (Roads & Stage 1A)

d. Stormwater Design should be included detailed in section 12.3 below, Development Engineering Guidelines 2018, Council's Stormwater Disposal Policy and current industry guidelines.

e. Water Sensitive Urban Design (WSUD) should be included as mentioned in item 4 (below), Parramatta DCP 2011, endorsed Draft Telopea Precinct DCP, Council's Stormwater Disposal Policy and current industry guidelines.

13.3 Stormwater Design

a) A full DRAINS model needs to be developed and submitted along with the sub-catchment plan and brief report to demonstrate adequacy and appropriateness of drainage infrastructures in public roads.

b) Appropriate tail water conditions should be incorporated in the model and sensitivity analysis with climate change and sea level rise should also be included in accordance with the industry guidelines and latest DPIE recommended requirements.

c) All private and public drainage infrastructures need to be design for 5% AEP with 50% blockage in sag pits and 20% blockage in on-grade pits with safe overland flow paths defined for the 1% AEP.

d) All stormwater drainage design details are to be in accordance with council standard drawings. All public domain stormwater drainage pipe types are to be Reinforced Concrete Spigot and Socket Rubber Ring type pipes to the appropriate Class of pipes needed to address fill and traffic loading requirements.

e) This should consider proposed WSUD elements

f) Electronic copy of DRAINS model along with brief report should be submitted for review.

13.4 Water Sensitive Urban Design

a) The whole precinct-wise water quality model should be developed with proposed water quality treatment measures up to the target. This should be consistent with the Telopea DCP Section on Water Sensitive Urban Design (WSUD).

b) Except GPTs to the outlet, use of proprietary products as public WSUD elements are not recommended. This may only be considered as the last option and with the demonstration of other non-proprietary treatment options are not feasible and adequate.

c) Electronic copy of MUSIC Model along with a brief report and sub-catchment plans for WSUD elements should be included.

13.5 Stage 1A

a) Stage 1A could only be assessed, once RFI (as mentioned above in sections 12.1-12.3) is available as this should be consistent with overall water management strategy for both quantity and quality.

b) Underground basins and Proprietary water quality treatment systems has been proposed as public infrastructures. As mentioned above in Water Sensitive Urban design Section12.4, proprietary products as public WSUD elements are not recommended. This may only be considered as the last option and with the demonstration of other non-proprietary treatment options are not feasible and adequate.

c) Similarly to point b) above, underground basins as public infrastructures are not recommended and every opportunity to utilise landscaping area for above-ground storage should be sought due to repair and maintenance, structural integrity in long run, frequent siltation issues, regular cleaning requirements, traffic management required during cleaning, repair & maintenance and so on.

d) Location of basins should be checked against safety during cleaning, repair, and maintenance. Easy access to cleaning, repair & maintenance vehicle should also be ensured.

13.6 Other Requirements/Considerations

a) A map clearly showing private road and infrastructures (WSUD elements, basins and so on) separated with public road and public infrastructures should be included in the submission

b) All stormwater drainage pit designs to comply with Council's Standard Drawings.

c) All stormwater drainage pit and pipes are to be inspected by Council's Engineer prior to backfill. The applicant must provide 24-hour notice prior to any inspection. Inspection of the works will be required on the following stages:

   i. On construction of the stormwater drainage pipe prior to backfilling of trench.

   ii. On construction of formwork to any drainage pit(s) prior to Placement of concrete.

   iii. On construction of any formwork to concrete pavement, footpath, driveway, kerb and gutter etc. and prior to placement of concrete.

d) The Developer is to provide to council copies of all trenches backfill compaction test results by a NATA approved laboratory.

e) On Completion of works the Developer is to provide council a copy of a CCTV condition assessment Report and video of the constructed pit and pipe stormwater drainage system.

f) The Developer is to provide to council photographic evidence of the constructed stormwater pits and pipes prior to backfill, if requested by Council.

g) On Completion of works the Developer is to provide to council Work-as-Executed drawings prepared and signed off by a Registered Surveyor and include the Surveyors Registration Number and date signed.

h) The Developer provide Structural Certification for stormwater drainage pits exceeding 2.5 metres in depth or where concrete beams or insets are required.

i) New stormwater assets that will become council infrastructure need to be identified in the Stormwater Asset Handover Register and submitted to council on completion of works.

j) Council will not accept the works unless all above information is provided to Council and that the works are deemed to be satisfactory.

APPENDIX 1 – URBAN DESIGN ANALYSIS

Urban Design Analysis

CONCEPT PLAN AND DETAILED STAGE 1A

NCA/4/2021 - APPENDIX

OCTOBER 2021

1. TELOPEA CORE

1.1 CONCEPT PLAN STRUCTURE AND TREE RETENTION

URBAN DESIGN
City Design Unit
126 Church Street, Parramatta NSW 2150
PO Box 32 Parramatta NSW 2124
www.cityofparramatta.nsw.gov.au

REVISION	DATE	DRAWN	CHECKED
A	01/09/2020	JRS	JMcC

TELOPEA GROWTH PRECINCT - LAHC/FRASERS CORE PROPOSAL

DRAWING TITLE **TREE RETENTION ANALYSIS**
DRAWING NUMBER 01
REFERENCE NUMBER --/--/----

LEGEND

- TREE TO BE REMOVED
- TREE TO BE RETAINED
- PROPOSED PUBLIC STREET
- PROPOSED PEDESTRIAN SPACE
- CATEGORY AA TREE
- CATEGORY A TREE
- CONTOURS (1m)
- CONTOURS (5m)

SCALE

1:750 @ A1
1:1500 @ A3

N

1.2 MASTERPLAN 2017 STRUCTURE AND TREE RETENTION

URBAN DESIGN
City Design Unit
126 Church Street, Parramatta NSW 2150
PO Box 32 Parramatta NSW 2124
www.cityofparramatta.nsw.gov.au

REVISION	DATE	DRAWN	CHECKED
A	01/09/2020	JRS	JMcC

TELOPEA GROWTH PRECINCT - MASTERPLAN 2017

DRAWING TITLE **TREE RETENTION ANALYSIS**
DRAWING NUMBER 01
REFERENCE NUMBER --/--/----

LEGEND

- TREE TO BE REMOVED
- TREE TO BE RETAINED
- PROPOSED PUBLIC STREET
- PROPOSED PEDESTRIAN SPACE
- CATEGORY AA TREE
- CATEGORY A TREE
- CONTOURS (1m)
- CONTOURS (5m)

SCALE

1:750 @ A1
1:1500 @ A3

N

2. THE PRECINCTS

TELOPEA DCP PRINCIPLES FOR THE PRECINCTS

1. Buildings are to form a continuous pattern of consistent street setbacks and building separation to create a comfortable neighbourhood environment.

2. Development is designed to enhance and maintain the topography, streetscape, and natural environment as key features of Telopea.

3. Development is to provide breaks between the buildings to provide opportunities for views to the Dundas Valley.

4. Maximise the number of apartments facing the street, provide separation between buildings and allow for greater rear and front setbacks and contiguous landscape areas and deep soil networks.

5. Front and rear setbacks and basement design is to respond to topography, allow for landscaping, privacy and amenity and minimise the undergrounding of apartments.

6. Design buildings to retain existing trees where possible and provide opportunities to plant new trees.

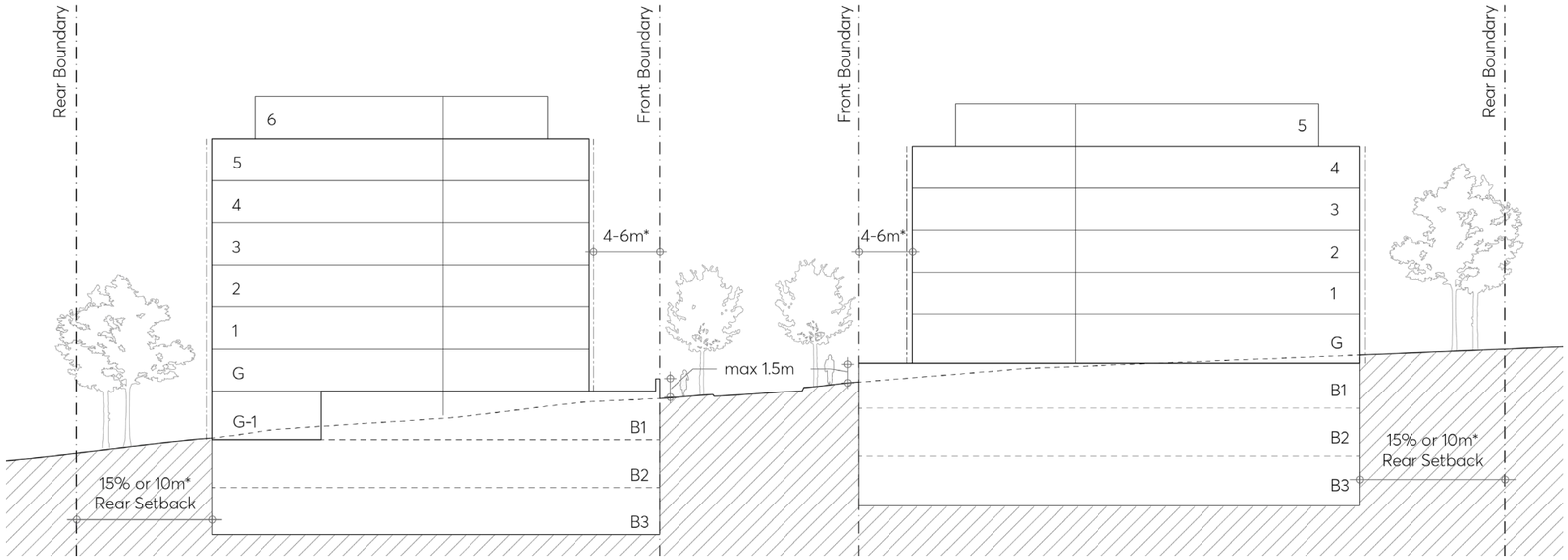


Figure 05 - Telopea Precinct Street Setction

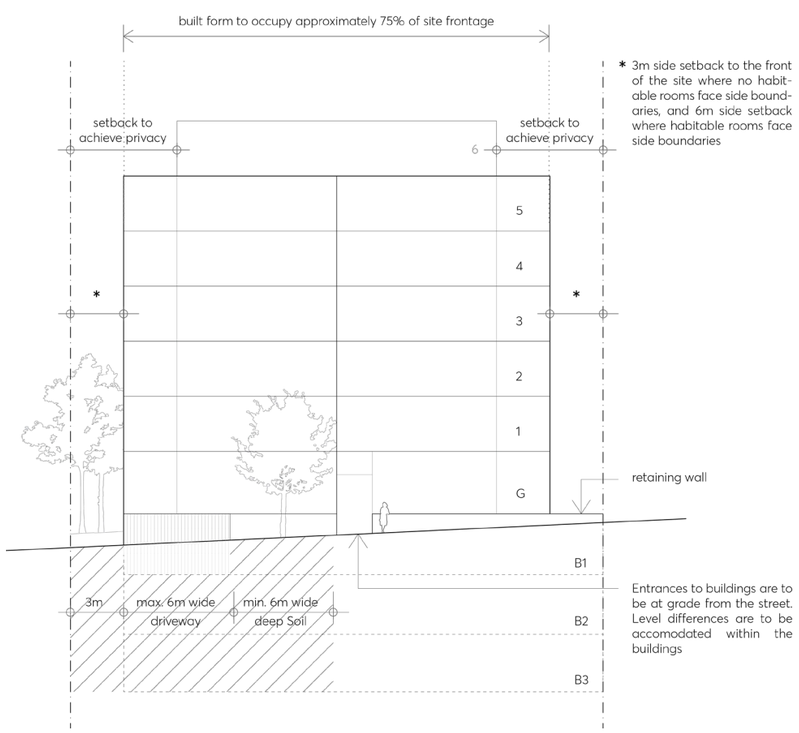


Figure 06 - Street Elevation

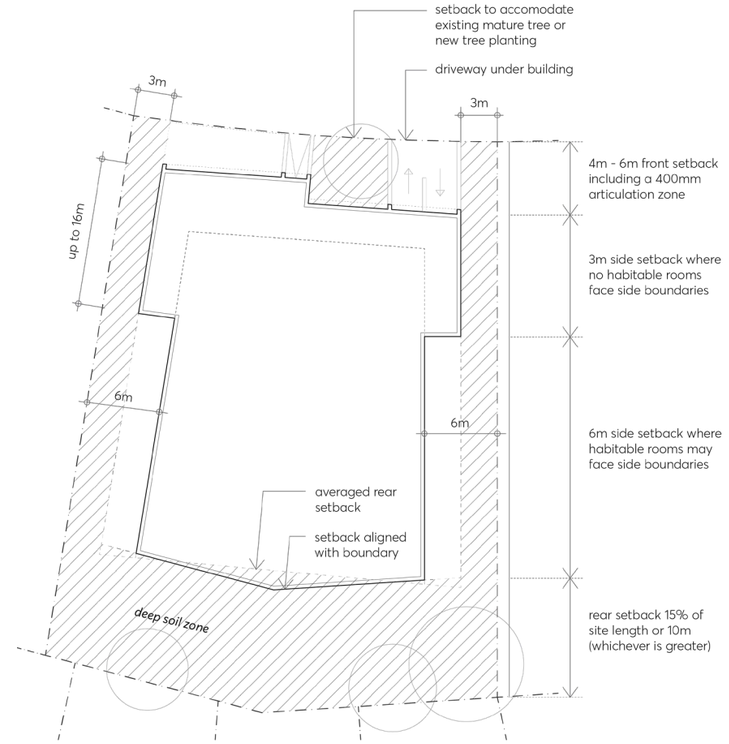


Figure 07 - Site Setback Plan

2.1 LAHC CONCEPT PLAN

Site N3
Permissible FSR 2.9:1 *(2.4 base + potential bonus)*
Achieved FSR 3.0:1

Site N4
Permissible FSR 2.5:1 *(1.7 base + potential bonus)*
Achieved FSR 2.2:1

Site N5
Permissible FSR 2.5:1 *(1.7 base + potential bonus)*
Achieved FSR **2.7:1**

Site N6
Permissible FSR 2.9:1 *(2.4 base + potential bonus)*
Achieved FSR **3.3:1**

Site N7
Permissible FSR 2.5:1 *(1.7 base + potential bonus)*
Achieved FSR **2.4:1**

Site N8
Permissible FSR 2.9:1 *(2.4 base + potential bonus)*
Achieved FSR **3.8:1**

Site N9 (south)
Permissible FSR 2:1 *(1.5 base + potential bonus)*
Achieved FSR 2:1

Site N9 (north)
Permissible FSR 2:1 *(1.5 base + potential bonus)*
Achieved FSR ***2.2:1***

Site N10
Permissible FSR 2:1 *(1.5 base + potential bonus)*
Achieved FSR 2:1

2.2 INDICATIVE APPLICATION OF THE DCP FOR TELOPEA

Site N3
Permissible FSR 2.9:1 *(2.4 base + potential bonus)*
Achieved FSR **3.2:1**

Site N4*
Permissible FSR 2.5:1 *(1.7 base + potential bonus)*
Achieved FSR 2.3:1

Site N5
Permissible FSR 2.5:1 *(1.7 base + potential bonus)*
Achieved FSR 2.2:1

Site N6*
Permissible FSR 2.9:1 *(2.4 base + potential bonus)*
Achieved FSR 2.9:1

Site N7*
Permissible FSR 2.5:1 *(1.7 base + potential bonus)*
Achieved FSR 2.3:1

Site N8
Permissible FSR 2.9:1 *(2.4 base + potential bonus)*
Achieved FSR 3.0:1

Site N9 (south)
Permissible FSR 2:1 *(1.5 base + potential bonus)*
Achieved FSR 1.8:1

Site N9 (north)
Permissible FSR 2:1 *(1.5 base + potential bonus)*
Achieved FSR 2:1

Site N10*
Permissible FSR 2:1 *(1.5 base + potential bonus)*
Achieved FSR 2:1

*****Assumes an amalgamation with sites isolated by LAHC redevelopment*