FORBES RESIDENCES

KISHORN x FORBES ROAD, APPLECROSS

Amenity Impact Statement

W O H A x MJA

TUSCOM SUBDIVISION CONSULTANTS

Prepared for
Applecross Land Holdings Pty Ltd
15 McCabe Street
North Fremantle WA 6159

History and Status of this Document

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TUSCOM SUBDIVISION CONSULTANTS

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1.0 Introduction

Tuscom Subdivision Consultants acts on behalf of Applecross Land Holdings Pty Ltd, the proponents of Lots 311, 800 & 801 (Nos. 10, 12 & 14) Forbes Road and Lots 802, 803 & 804 (Nos. 40A, 40B & 40C) Kishorn Road, Applecross (herein referred to as the 'subject site').

This Amenity Impact Statement (AIS) has been prepared in support of an Application for Planning Approval for a 20-storey mixed-use development on the subject site. The AIS contains the following pertinent details of the proposal deemed to be relevant as part of considering the merits of the application:

- Details of the proposal;
- Detailed assessment of the proposal against the relevant planning provisions applicable under the City of Melville Local Planning Scheme No. 6 (LPS No.6), Canning Bridge Activity Centre Plan (CBACP), relevant Local Planning Policies as well as Draft State Planning Policy 7 – Design of the Built Environment; and,
- Detailed justification of any variations sought.

This AIS has been prepared to supplement the Metro Central Joint Development Assessment Panel (JDAP) submission package which has been prepared in partnership with the input of the following project consultants:

WOHA
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2.0 Planning Framework

2.1 Metropolitan Region Scheme

The subject site is zoned 'Urban' under the provisions of the Metropolitan Region Scheme (MRS).

For reasons outlined further in this report, the proposed development is considered to be consistent with the 'Urban' MRS zoning applicable to the subject site.

2.2 Planning Control Area 1.7372

Declaration of Planning Control Areas (PCAs), under Section 112 of the *Planning and Development Act 2005*, is a standard statutory planning process commonly used to protect strategic land from inappropriate development and can include acquisition by the WAPC where required. A PCA remains in place for up to five years, to allow an MRS / PRS amendment to be put in place.

The WAPC has declared a planning control area for the subject site in connection with the future road upgrading of Canning Highway to ensure that Canning Highway operates effectively in the long term and continues to provide the regional road functionality that is needed to support the overall development and viability of the centres that it connects such as Fremantle, Perth and Canning Bridge.

The PCA came into effect on 26 August 2015 and remains in place till 26 August 2020 or until revoked by the WAPC with approval by the Minister, whichever is the sooner.

Figure 1 illustrates the applicable PCA.

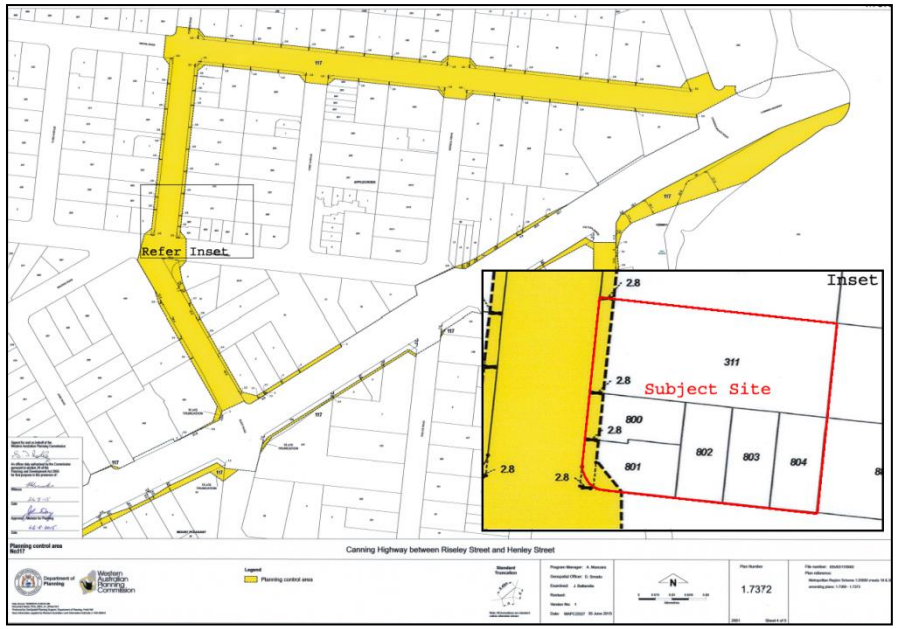

Figure 1 –PCA 1.7372

2.3 City of Melville Local Planning Scheme No. 6

2.3.1 Zoning / R-Code

The subject site is zoned 'Centre (C2)' with a 'R-AC0' coding applicable under the provisions of LPS No. 6. The 'Centre (C2)' zoning of the subject site indicates that land is designated for future development as a town centre or activity centre, subject to detailed planning being undertaken in accordance with the structure planning provisions of LPS No. 6 or State Planning Policy 4.2 – Activity Centres for Perth and Peel (SPP4.2). The Objectives of LPS No. 6 relative to the C2 locality states:-

> *C2 – District Centres subject to activity centre plans: to provide for District Centre development focusing on weekly needs and*

services a wider district catchment giving due regard to the relevant activity centre plans.

Detailed assessment of the proposal against the provisions LPS No. 6, the applicable State Planning Policies as well as the CBACP is further covered under section 4.0 of this AIS.

Figure 2 illustrates the subject site in the context of the land use zoning applicable under the provisions of LPS No. 6.

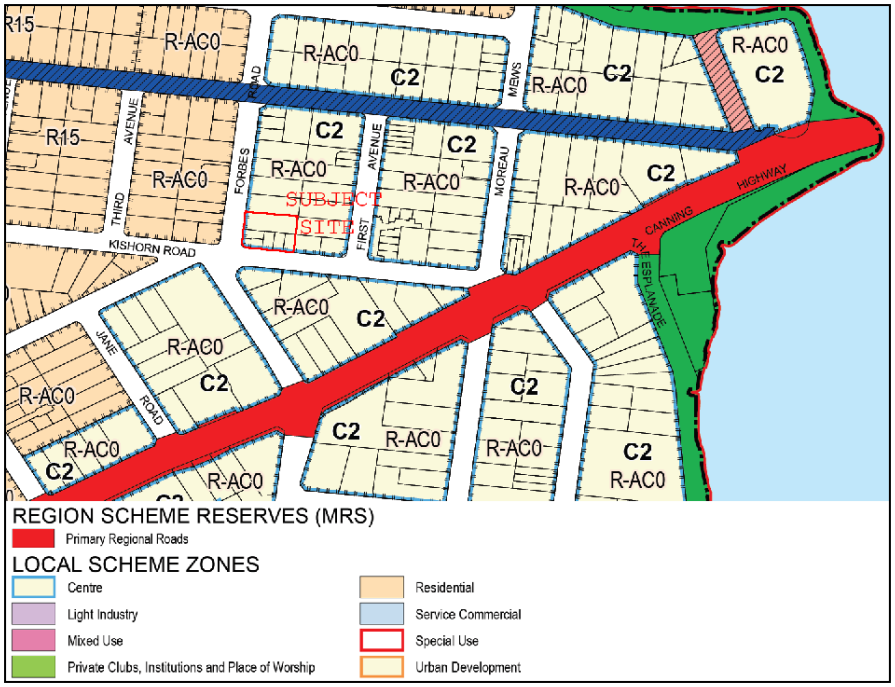

Figure 2 –LPS No. 6 Zoning Map

2.3.2 Land Use Permissibility

The permissibility of uses of land in the various zones in the LPS No. 6 Scheme area is determined by cross-reference between the lists of classes on the left hand side of the zoning table (Table 3) and the list of zones at the top of the zoning table. For the 'Centre (C2)' zone, Table 3 makes reference to cl.18(7) of LPS No. 6 which states:-

If the zoning table does not identify any permissible uses for land in a zone the local government may, in considering an application for development approval for land within the zone, have due regard to any of the following plans that apply to the land —

a) a structure plan;
b) an activity centre plan;
c) a local development plan.

Land use permissibility is further discussed under section4.0 as part of the detailed assessment against the provisions of the CBACP.

2.3.3 Canning Bridge Activity Centre Structure Plan (CBACP)

The CBACP has been created through a partnership with State Departments and two Local Authorities, being the City of Melville and City of South Perth due to the locational context which has necessitated a unique collaborative approach to planning for the locality.

The Canning Bridge Activity Centre is less than eight kilometres from the Perth CBD, with direct road, public transport, walking and cycling access. The areas within the City of Melville are identified under two distinct quarters:

- *Q1 "The Kintail Quarter" will be the premier retail area and the driving force behind the employment opportunities in the Canning Bridge Activity Centre.*
- *Q2 "The Ogilvie Quarter" will be the business quarter and the playground of the western quarter.*

The subject site is situated within the 'Mixed Use (M10) precinct of the Q1 – Kintail Quarter. As illustrated in Figures 3 and 4, the area is characterised by its position which abuts the 'Mixed Use (M15)' and 'Residential (R4)' precincts as well as being in close proximity to the 'Residential (R6-8)' precinct. The convergence of these various precincts is reflected in the land uses that surround the subject site, these comprising an eclectic mix of single, grouped and multiple dwelling residential as well as various offices uses north of Kishorn Road. Meanwhile the southern side contains a mix of office, retail, food & beverage with a lesser number of single and grouped dwelling residential uses.

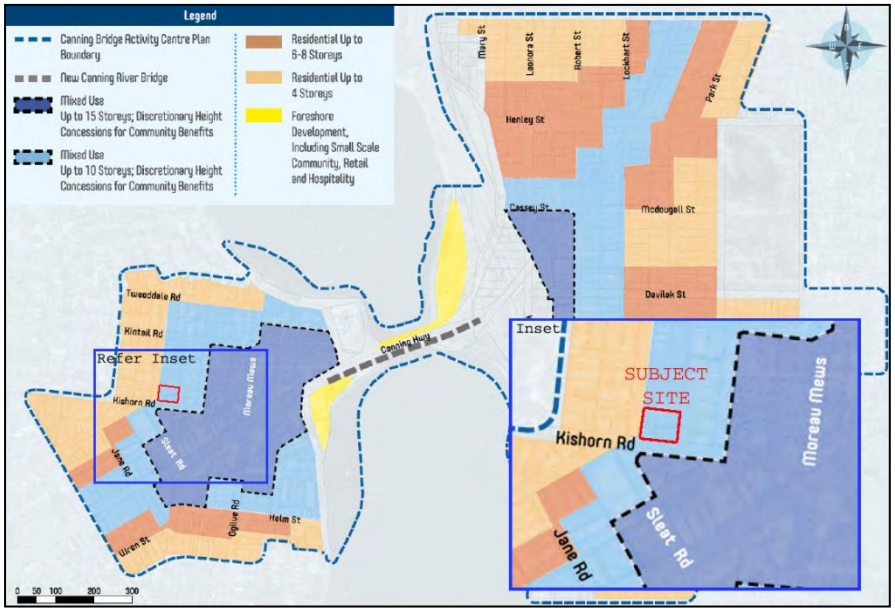

Figure 3–CBACP subject site context (Source: CBACP 2016)

Figure 4–CBACP subject site aerial context (Source: Googlemaps)

Under the provisions of the CBACP, the 'M10' designation relates to the overall land use, building form and building height expectation for this precinct which, in this instance, means:-

> *Mixed Use up to 10 stories (maximum mixed use up to 32 metres in height).*

The CBACP presents an overall vision for the area, changes of which are anticipated to occur across a period of over 40 years. Notwithstanding the redevelopment timeframe, it is considered critical to the successful growth of the area that design guidelines are in place to ensure exemplary and best practice technology and treatments are adopted from now to create a truly world class place; a place which matches its truly world class physical location.

Division Two of the CBACP is structured around 5 components of design consideration and 1additional component, these being:

- Land Use;
- Site Planning and Built Form;
- Public Spaces;
- Parking and Servicing;
- Safety and Security; and
- Bonus Provisions.

Each of the ***Requirements*** within the CBACP represents the quantitative criteria against which a development will be designed and assessed. Each ***Requirement*** is then complemented by a ***Desired Outcome*** which represents the qualitative principles against which the decision maker exercises its judgment to determine development proposals.

Detailed assessment of the proposal against the ***Requirements*** and where applicable, the ***Desired Outcome*** is covered under section 4.0 of this AIS.

3.0 Proposal Details

3.1 The Design Narrative

The State Government of Western Australia through its Perth and Peel @ 3.5 million planning framework strategy has identified the need for 800,000 new homes to accommodate Perth's growing population over the next 35-40 years. For the City of Melville, this equates to approximately 11,000 new dwellings by the year 2031 and 18,500 new dwellings by the year 2050. The challenge therefore is to facilitate and accommodate growth in population and housing, promote housing diversity and affordability whilst maintaining the sought-after amenity of the City's various suburbs.

In developing the design narrative, a contextual analysis identified the suburb of Applecross and the locality that is the CBACP as quintessentially comprising the quarter-acre block with a backyard, shed and the hills hoist, all within a garden setting characterised by the tree-lined streets many which feature the *Jacaranda Mimosifolia.* In light of this suburban past, any change and the introduction of density can, and has been met with resistant given its threat to the laidback suburban lifestyle. To this end the question posed was:

> *"How can density be delivered to meet State level strategies that respect and where possible, gives back more of what has been the Canning Bridge Activity Centre or formally an area of Applecross?*
>
> *Can the Activity Centre be more pleasant, leafier, quieter, yet comprise more facilities and amenities which support the current residents as well as those future generations who equally deserve to experience what has made the area the liveable suburb that it is"*

The proposal would create a vertical extension of Applecross and its tree-lined avenues, bringing back the quintessential Applecross of the bygone era. That is, the development would not only provide high-quality liveable homes for its residents, but it would provide spaces for gardens and playgrounds. It would not only retain the existing street trees but add more, thereby providing even more spaces for insects, birds and animals and create its own eco-system on the ground and up above.

Opportunity for views to various landmarks and beyond including the Swan and Canning Rivers, Perth CBD as well as the Darling Scarp. In a time of shrinking lot sizes and backyards, it would re-introduce the outdoor space by catering for the children's playground, a herb garden, BBQ terrace, the Hills Hoist and the tool shed.

(Source: MJA 2018)

3.2 Development Details

3.2.1 Design development & background

The development has been designed having regard to the applicable development provisions of the City's LPS No.6, Canning Bridge Activity Centre Plan and applicable Policies. The submitted design has also had the input of the City's planning department as well as Design Review Panel (DRP) who have provided commentary on preceding design concepts presented for consideration. A copy of the DRP meeting minutes from the meeting held on 1 August 2018 is attached as **Appendix 1** with a summary of the key comments arising out of the last DAC meeting summarised below:

Strengths:

- *The design narrative is very important to the proposal, the idea of incorporating the things people love about the suburbs into a vertical form is a very strong one.*
- *The proposal seeks to exceed 5 star Greenstar rating.*
- *Breaking the tower into three forms assists to break up the building bulk.*
- *Almost 100% cross ventilation of the dwellings.*
- *Very high levels of ground plane activation, through the use of the central pedestrian thoroughfare. Servicing and waste management*
- *appears to be well considered, ensuring the majority of the ground floor plane is taken up with active uses.*
- *Extensive landscaping at all levels of the building.*
- *Natural light and ventilation to corridors.*
- *Wind-scoops are really interesting idea. Further detail should be provided as the proposal develops further to demonstrate how this works.*
- *High quality short-stay dwellings, accessed via dedicated lift.*
- *Well planned apartments, with good layouts, including good robe space. Typical apartment floor plates create sense of separation. Movement across apartments and communal spaces is good.*
- *Diverse range of uses and apartment types. The proposed co-working space and community gardens are considered to add another level of interest to the building.*
- *Amenity deck on the top floor provides all residents with the opportunity to access the available view. The landscape design is consistent with the story of the building and shows dedication to creating a high quality building.*
- *Community spaces are well thought out. The communal amenity areas on every third floor are well considered.*

Further Considerations:

- *Increase the setbacks to the north and west boundaries to at least the minimum to ensure the amenity of future occupiers is not impacted, particularly for the balcony areas. The applicant is encouraged to provide greater setbacks and to be generous in this respect as increased setbacks will also reduce the impact on adjoining properties.*
- *Vertical landscaping is supported by the DRP however needs a compelling water, wind and landscaping strategy to demonstrate how this will be achieved in the Perth climate.*
- *No shadow diagram has been provided.*
- *The relationship between the proposed vehicle drop off and the streetscape needs further detail. The incorporation of three crossovers works against having a good public domain and good streetscape. The DRP acknowledges the idea behind the vehicle drop off however generally does not support multiple crossovers. If the applicant is to pursue this aspect it needs to demonstrate that it is creating a shared space where pedestrian needs are prioritised over vehicles.*
- *One apartment at the mezzanine level has an internalised bedroom. It's allowed to be a studio but if it becomes a bedroom then it needs access to natural light.*
- *Consider waste management to ensure this can occur in an efficient manner on site. The applicant is encouraged to liaise with the City in this respect.*
- *Provide a staircase to the community garden to draw people up to this space.*
- *Consider how the entry to the ramp is treated as this can be a prominent element in the streetscape.*

Suggested Improvements:

- *A wind study which details the impact of wind at the street level, podium levels, the open corridors and the impact on the proposed landscaping.*
- *Additions street level analysis to understand the impact on and interaction with the H4 zone to the west.*
- *Analysis of percentage of deep soil zones.*

The final development form has been comprehensively revised in response to the pre-lodgement feedback received, culminating in a built form outcome that creates a distinctive landmark building which complements the intended character of the locality but also provides a high level of amenity to its future occupants. The proposal is considered to represent a highly desirable addition to the area which is currently undergoing a transition into a thriving urban destination.

3.2.2 Project characteristics / breakdown

The proposal seeks planning approval for a 20-storey (75.4m) mixed use development. The development is made up of the following key components:

- **98 multiple dwellings** comprising:
  - 24 x 1 bedroom units;
  - 36 x 2 bedroom units;
  - 34 x 3 bedroom units; and,
  - 4 x 4 bedroom units.

- **15 Short stay accommodation** comprising:
  - 10 x studio & 1 bedroom units; and,
  - 5 x 2 bedroom units.

- **563sqm commercial** comprising retail, food & beverage, co-working.

- Total **164 parking bays** of which:
  - 139 x multiple dwelling;
  - 10 x short stay;
  - 6 x co-working;

- 2 x retail / food & beverage;
- 1 x electric vehicle; and,
- 1 x loading / service bay.
- 5 x motorcycle / scooter bays.

- **Public open space** – 153.9sqm of landscaped podium on Level 1.

- **Resident communal facilities** comprising:
  - Level 15 - 686.4sqm – deck, pool, bbq, dining / lounge, clubhouse and fitness studio.
  - 364sqm of 'sky garden' located on levels 3, 9, 12, 15 & 18.
  - Roof terrace – 372.96sqm – roof garden and playground.

- Ancillary public and resident **services and amenities** comprising:
  - 15 x wall mounted bicycle racks (residents);
  - Public end-of-trip facility containing 5 x bicycle parking, 1 x shower and 3 x lockers;
  - Commercial end-of-trip facility containing 6 x bicycle parking, 2 x shower and 4 x lockers;
  - 34sqm resident waste and recycle bin store;
  - 27.5sqm commercial tenant waste and recycle bin store;
  - 16.22sqm bulk waste store.

Figure 5 provides a simplified breakdown of the project whilst detailed development plans are contained as **Appendix 2.**

The ***Architect's Design Report*** (ADR) contains a detailed description of the various elements forming part of the project - refer submission package.

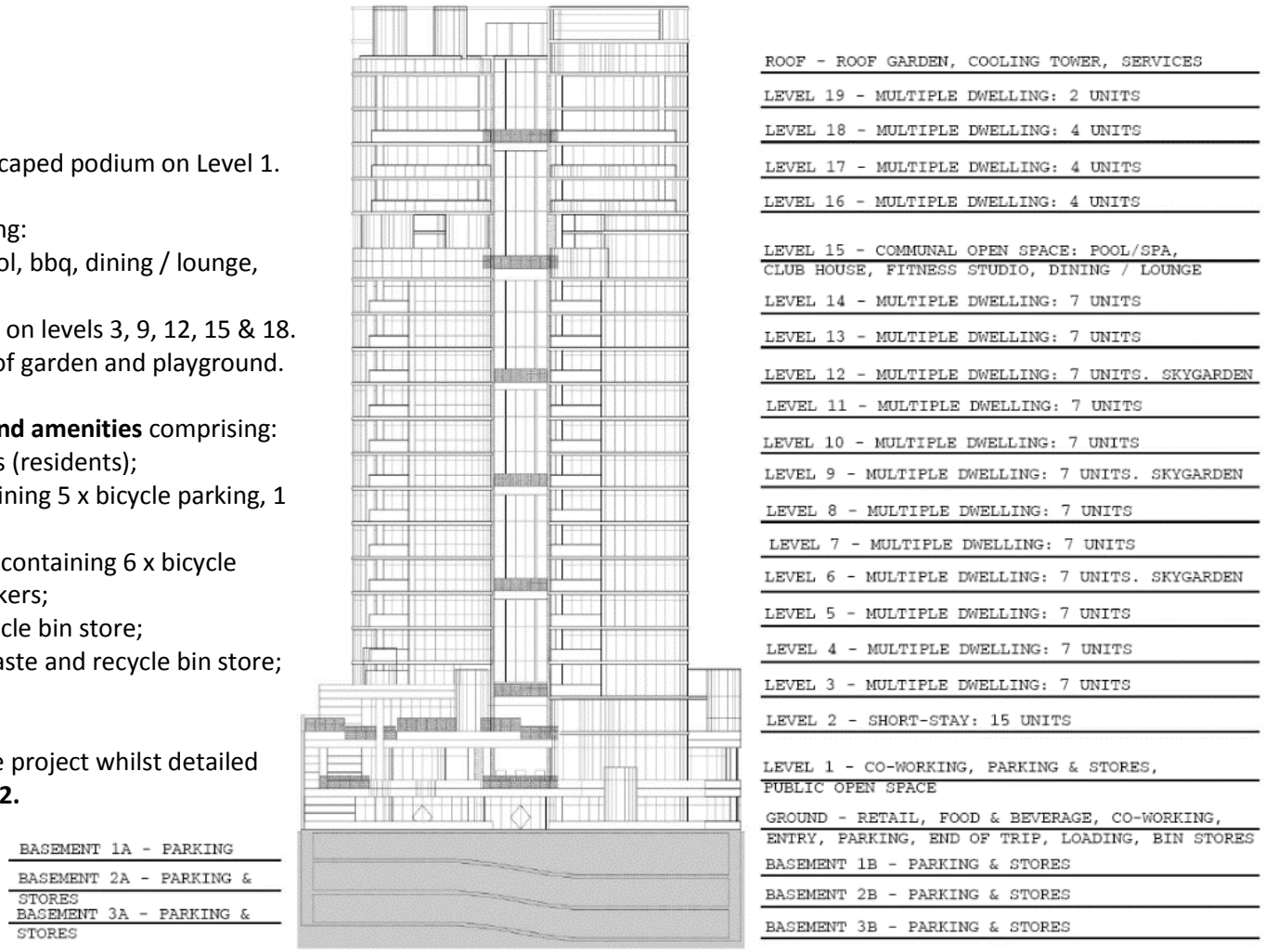

Figure 5 – Development breakdown by level (Source: base plan by MJA)

4.0 Assessment

The statutory provisions applicable to the subject site require assessment of the proposal to be undertaken against the provisions of the CBACP. As outlined under section 2.0 above, the CBACP is structured in a way that comprises 5 design components and 1 additional component. These components are:

- Land Use;
- Site Planning and Built Form;
- Public Spaces;
- Parking and Servicing;
- Safety and Security; and
- Bonus Provisions.

Where the applicable ***Requirements*** of the CBACP are met (i.e. the quantitative criteria), a proposal shall be deemed to be compliant with the principles and objectives of that particular design criteria. The ***Requirements*** are intended to provide a level of certainty to landowners regarding what can be developed 'as-of-right' as well as provide residents of a locality an indication of the expected future development in the locality. To be generically applicable, these primary controls are considered to be relatively conservative, however scope exists to develop beyond these parameters that can still satisfy the principles and objectives of the design criteria.

The ***Desired Outcome*** provides the qualitative criteria to which an assessment of any variation shall be undertaken. Satisfying the ***Desired Outcome*** criteria represents how development beyond the ***Requirements*** is still consistent with planning objectives for a locality. Notwithstanding, the CBACP introduces an additional set of criteria for properties within the M15 or M10 zones where greater height is sought. Specifically, the CBACP provides greater height to be approved where:

- ***Desired Outcome*** criteria are all met or exceeded;
- Exemplary design is proposed in the opinion of the Design Advisory Committee; and,
- Provision of a significant benefit to the community in the form outlined under the bonus provisions being Elements 21 and 22 of the CBACP.

Based on the above, assessment of the proposal has been separated into 3key sections:

- Table 1 – assessment against ***Requirements***;
- Table 2 – assessment against ***Desired Outcomes*** where particular components of the proposal are non-compliant with ***Requirements***; and,
- Table 3 – assessment against Elements 21 and 22 ***Bonus Provisions*** relative to the proposals building height variation of 20 storeys / 75.4 metres in lieu of 10 storeys / 32.0 metres.

Figure 6 – Final stages of build out of western quarter (Source: CBACP Part 2)

4.1 Table 1: CBACP 'Requirements' Assessment

Table 1 below provides an assessment of the proposal against the ***Requirements*** of the CBACP. Where the ***Requirements*** criteria is met, the particular element / aspect of the proposal to which the ***Requirements*** relates to is deemed to be compliant or as-of-right. Note: non-compliances are identified in **red**.

Element	Requirements	Proposed	Compliance
Land Use			
Element 1 Land use	Preferred land uses (M10) • Ground floor - Restaurant, Small Bar, Office, Shop, Tourist Accommodation, Reception Centre, Retail, Educational Establishment, Civic Uses. • Uses above ground floor – Restaurant, Small Bar, Hotel, Mixed Development, Office, Shop, Tourist Accommodation, Reception Centre, Retail, Multiple Dwelling, Aged or Dependent Person's Dwelling, Single Bedroom Dwelling, Residential Building, Educational Establishment, Civic Uses, Consulting Rooms, Public Parking, Convenience Store, Home Occupation, Home Office.	<u>Ground Floor</u> Food & Beverage (84.0sqm) Retail / Shop (67.0sqm) Co-working space (151sqm) <u>Level 1</u> Co-working space (261sqm) Public open space (153.9sqm) <u>Level 2</u> Short stay accommodation (15 units) <u>Levels 3 to 19</u> Multiple dwelling (98 units) Resident dining lounge, clubhouse, pool/spa, roof garden	Complies– all proposed uses a ***Preferred land uses***
	Dwelling Diversity • Min. 20%, max 50% = one (1) bedroom or studio dwellings • Min 40% = two (2) bedroom dwellings Uses Not Listed • Council discretion	98 multiple dwellings (MD)&15 serviced apartments (SA) ○ 24 x 1 bed MD = 24.48% ○ 36 x 2 bed MD = 36.7% ○ 34 x 3 bed MD = 34.7% ○ 4 x 4 bed MD = 4.08%	No 3.3% shortfall in 2 bedroom dwellings - refer Table 2 for detailed justification

Site Planning and Built Form			
Element 2 Site Planning and Built Form	• Provide continuous urban edge to street. • Integrate pedestrian and or vehicle access points to not disrupt street rhythm. • Building which is greater than 32-metres in height (approximately 10 storeys), shall only be permitted where the land area comprises a minimum of 1,800sqm. • All development to extend across the full street frontage. • Encourage active uses at podium level or roof top.	Ground floor to podium levels incorporate various design elements to achieve an active streetscape and land uses, pedestrian focused environment, landscape interaction whilst also reducing building mass to adjoining H4 zone. Total lot size = 2,023sqm permits additional height. 134m of street frontage provided (total street frontage is 155m). Podium level comprises short-stay serviced apartment, extensive landscaping and public open space. Rooftop comprises a 372.96sqm roof garden.	Complies
Element 3 Height	• For buildings in the M10 Zone, notwithstanding the 10 storey height limit, no building shall exceed 32 metres above NGL. • Podiums shall be a minimum of 7 metres above NGL and shall not exceed 13.5 metres above NGL.	20 storey / 75.4m (excluding rooftop service infrastructure, lift over-run etc) Podium height = 10.6m	Does not comply - refer Tables 2 & 3 for further justification Compliant

Element 4 Street Setbacks	• Address street with minimum 2 storeys of podium level. • All development including and above the fourth floor to be setback from primary and secondary street minimum 5.0m from boundary. • All development in the M10 Zone in Q1 and Q2 shall have a minimum 1.5 metre and maximum 3.0metre setback to street boundaries. • Development that proposes a variation to this setback by way of public spaces and plazas will be considered on its merit, where the development of appropriate public spaces/plazas is considered to contribute to the quality of the centre at that location. • Street setback areas shall be activated and/or landscaped.	2storey podium proposed. Ground Floor – 20sqm incursion from retail tenancy to 1.5m minimum setback to Kishorn Rd. Level 1 – 12sqm incursion from stores and landscape deck to 1.5m minimum setback to Kishorn Rd. Level 2 – 15sqm incursion from landscape deck to 1.5m minimum setback to Kishorn Rd. Level 4 to roof - >5.0m on both Kishorn Rd and Forbes Rd Ground floor street setback area entirely activated with non-residential use and landscaping.	Complies Does not comply Does not comply Does not comply Complies Complies
Element 5 Side & rear Setbacks	• Any new podium level development shall be built up to side boundaries, ROW and/or rear boundary. • Address pedestrian access way through active frontages and glazing. • Tower elements setback min. 4m from side or rear so as to provide 8m separation between tower elements. • Open sided balconies and roof terraces permitted to extend into side setback areas. • Provision of privacy, solar access and overshadowing do not apply.	Nil side and rear setbacks between ground to podium (level 2). Ground floor landscape treatment, active frontages and walkability via a public thoroughfare emphasises pedestrian focus. Tower element side and rear setbacks achieve minimum of 4.0m with curved exterior resulting in sections which exceed 4.0m.	Complies Complies Complies
Element 6 Linking Pathways	n/a	n/a	n/a

Element 7 Canning Highway	n/a	n/a	n/a
Element 8 Landmark Buildings	n/a	n/a	n/a
Element 9 Facades	• Developments to be sympathetic to surrounding environment. • Responding to vertical and horizontal fenestration of adjoining developments. • Incorporate substantial areas of glazing on street frontage (min. 50%). • Windows and balconies to be incorporated above ground floor. • Designed to discourage vandalism. • Pedestrian links within development sites to have visual interest & activity (retail and food / beverage). • Floor levels to be no more/less than 500mm of NGL.	Building mass staggered and scaled to coordinate with adjoining M10 and H4 zones. Ground to podium expressed as a planted facade that connects street trees to the vertical gardens, with stepped planters that enhance the corner. Glazing provided to both street frontages across the majority of each except for driveway area in addition to 260sqm of alfresco / public space. Glazing treatment also provided along public thoroughfare emphasising pedestrian focus. All ground floor levels less than 500mm above natural ground level.	Complies Complies Complies Complies

<table>
<tr>
<td>Element 10
Open Space and Landscaping</td>
<td>
• Developments may cover 100% of site area subject to setbacks requirements of Element 4.
• Landscaping spaces to be provided within setbacks or open space areas that are provided.
• 75% landscaping to be provided in the form of rooftop, vertical, podium and/or communal spaces. Balconies >12sqm are included in this calculation.
• Landscaping in the form of hard and soft landscaping can be utilised. Water sensitive designs to be implemented.
• Fencing <1.2m will reinforce separation between public / private realm.
</td>
<td>
Site coverage less than 100%.

Setback and open space areas extensively landscaped in staggered fashion across ground floor to podium level.

181% or 3,661.94sqm of landscaping (excluding balconies >12sqm). Inclusive of balconies, 270% or 5,477.54sqm.

Extensive use of hard and soft landscaping throughout development.

No fencing at-grade due to corner site location. Nil setbacks at side / rear boundaries ensure separation from adjoining lots.
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<td>
Complies

Complies

Complies

Complies

Complies
</td>
</tr>
<tr>
<td>Element 11
Sustainability</td>
<td>
• All non-residential development shall provide end-of-trip facilities comprising one change room per storey of each storey of the building which comprises non-residential land uses. Change rooms shall comprise lockers, towel drying racks and be located to enable privacy (a locker must be provided for every bicycle parking bay provided.)
• All non-residential development shall provide end of trip facilities comprising one shower for every ten bicycle parking bays required under Clause 18.7, with a minimum provision of one shower facility in any one non-residential development.
• All non-residential development shall provide bays for the exclusive use of charging electric cars at a rate of one bay in every 25 bays.
• All buildings shall be designed to enable access to natural light and cross ventilation.
• Kintail and Ogilvie Quarters (that is the Quarters within the City of Melville) shall achieve a 4 Star Green Star design rating under Green Building Council of Australia
</td>
<td>
563sqm commercial space across 2 floors.

End of Trip Facilities:
<table>
<tr><th>Required</th><th>Proposed</th></tr>
<tr><td>2 change rooms</td><td>General public and commercial facilities</td></tr>
<tr><td>6 bicycle bays</td><td>>6 bays</td></tr>
<tr><td>Locker per bicycle bay</td><td>7 lockers</td></tr>
<tr><td>1 shower</td><td>2 showers</td></tr>
</table>
1 x electric vehicle charging station.

Comprehensive access to natural light and cross ventilation – refer Sustainability Report.

5-star Greenstar rating achieved – refer Sustainability Report.
</td>
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Complies

Complies

Complies

Complies
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</table>

Element 12 Acoustics	n/a	n/a	n/a
Element 13 Adaptability	Buildings shall be designed to be adaptable to a variety of uses where the initial use is not a preferred use or would not fully achieve the Desired Outcomes of a particular site. Development plans submitted with the application shall provide details of the adaptability of the development and the proposed and future use of the development	Proposed uses are all **Preferred** uses. However, development proposes a variety of adaptable elements, principally in relation to the co-working component which can be adapted for use as office, gallery, seminars, events etc	Complies
Public Spaces			
Element 14 Street Edges	• Development adjacent to street edges shall ensure that adequate access is provided for pedestrian traffic. Alfresco dining areas shall provide unimpeded through access under awnings/colonnades. • Advertising signage shall be restrained and not superfluous. Signs above footpaths shall have a minimum clearance of 2.7 metres to the verge level.	As detailed under Element 5 and 9, ground floor maximises pedestrian movements over vehicular movements. Alfresco and public areas set within high quality landscape pavilions with wide public thoroughfares. Signage info to be strictly controlled so as not to erode from the architectural elements of the built form. Details to form a separate signage strategy.	Complies
Element 15 Level Changes	• Non-sacrificial anti-graffiti coating treatment to discourage potential graffiti. • Landscaping in front of retaining, street furniture and articulation of walls to avoid blank walls. • Provide universal access. Innovative design features for ramps are encouraged to make universal access an integral part of design.	Minor ground level modifications proposed within Kishorn Rd frontage however limited to approximately 300mm and in accordance with universal access standards. Internal pathways, landscaping, alfresco and entry points all designed to comply with universal access requirements.	Complies

Element 16 Fencing	Fencing shall be of a high quality on both sides.	No fencing proposed within Forbes and Kishorn Road frontages.	Complies
Element 17 Public Art	1.0% of the total capital cost of development to a CBACP wide public art fund. The total cost liability for contribution to the public art fund shall be capped at $500,000.	$500,000 to be committed to by project. The public art centre-piece will feature kinetic sculptures in the form of wind driven pieces which will clad the ground to podium level building façade – refer architectural design report for further detail.	Complies
Parking & Servicing			

Element 18 Parking	• Resident (car):
	  ○ Min – 0.75 bay / max 1.0 bay per studio or 1 bed
	  Require = 26.255 to 35 bays
	  ○ Min. 1.0 bay / max 1.5 bay per 2 or 3 bed
	  Require = 74 to 111 bays
	  ○ Min. 1.25 bay / max 2.0 bay per 4+ bed
	  Require = 5 to 8 bays
	  TOTAL: 106 to 154 bays
	• Resident visitor (car):
	  Require = nil
	• Resident (bicycle bays):
	  ○ 1.0 bay per dwelling
	  Require = 98 bays
	• Commercial staff & visitor (car):
	  ○ 1.0 bay per 50sqm (min) / 25sqm (max) NLA
	  Require = 12 to 23 bays
	• Commercial staff & visitor (scooter / motorbike):
	  ○ 1.0 bay per 5 car bays
	  Require = 1.0 bay
	• Commercial (bicycle bays):
	  ○ 1.0 bay per 100sqm NLA
	  Require =6.0 bays
		Total bays provided = 164 bays:
		• Basement 3 = 49 bays
		• Basement 2 -= 45 bays
		• Basement 1 = 31 bays
		• Ground Floor = 8 bays + 1 loading bay
		• First Floor = 25 bays
		
		<u>Parking Allocation</u>
		Resident (car) - 139 bays
		Resident visitor (car) - nil
		Resident (bicycle bays) - 98 bays (77 x 5sqm stores &21 x dedicated wall mounted racks)
		Short stay (car), commercial staff & visitor (car) - 19 bays
		Commercial staff & visitor (scooter) - 5 bays
		Commercial (bicycle) - 6 bays
			
			Complies
			Complies
			Complies
			
			Complies
			Complies
			Complies

Element 19 Servicing & Functionality	• Management of waste wholly within the development site, including the ability for service vehicles to circulate within the development. • No on-street waste collection areas are permitted. • Provide a Movement Summary (written Statement)- design intent behind the development of the site in relation to pedestrian access points, access to parking and cycling, pedestrian and cyclist pathways, loading areas and waste management. • All residential developments - enclosed, lockable storage area, min dimension of 1.5m with an internal area of at least 4sqm, for each grouped or multiple dwelling(s).	Residential and non-residential (separate) bin compounds proposed. All refuse collection proposed to occur on-site within designated service bay. Refer to separate WMP for further detail. Loading bay on-site to cater for commercial deliveries as well as waste vehicles. 98 stores proposed (i.e. 1 per multiple dwelling). 77 stores are 5sqm to accommodate bicycle storage.	Complies Complies Complies
Safety and Security			
Element 20 Safety	• Access to and through a development shall be safe and efficient. • Entrances shall be positioned so that all pedestrian movement is adequately lit and directly visible from a public space. • Access to and from carparking areas and building entrances shall be adequately sign-posted with provision of good lighting to enable safe out of hours use.	Entries to residential and non-residential areas are legible and easily navigated. Proposal comprises public thoroughfare at ground floor maximising pedestrian legibility. CPTED principles adopted in order to avoid narrow areas that do not have any passive surveillance. Basement 1A set aside for commercial and serviced apartment parking only. Basements1B to 3 set aside for resident use only; secured by security door.	Complies Complies Complies

Table 1 - CBACP 'Requirements' Assessment

4.2 Table 2: CBACP 'Desired Outcome' assessment

Table 2 below provides an assessment of the proposal against the ***Desired Outcome*** of the CBACP. Where the ***Requirements*** criteria of Table 1 above are not met, assessment of the particular element / aspect of the proposal to which the ***Requirement*** relates to are to be considered against the applicable ***Desired Outcome***.

A variation to the ***Requirements*** is considered to satisfy the overall objective of the Element where it can be demonstrated that the variation satisfies the ***Desired Outcome***.

Element	Desired Outcome	Proposed/ Justification	Compliance
Land Use			
Element 1 Land use	DO1.7 • All Quarters will comprise a mix and variety of development. • Housing should be diverse and affordable, with a mix of options in all areas. • Innovative land uses which support the Desired Outcome of each Quarter will be encouraged.	36.7% or 36 dwellings in lieu of minimum 40% or 39 dwellings The minor shortfall in of 3.3% or 3 dwellings is considered to be justified in this instance based on the following reasons: • Proposal includes 15 short stay units which include 5 two-bedroom units; • Diversity/ range of multiple dwellings is proposed which include 34 three-bedroom and 4four-bedroom products thereby providing a diversity in housing choice; • Product type has been in direct response to analysis of existing apartment product in the area whereby a significant percentage is 1 and 2 bedroom units. • By way of reference, the Sabina apartments by FINBAR contained a total of 452 residential apartments across 3 towers, comprising109 one-bedroom apartments (24%), 241 two-bedroom apartments (53%), and 102three-bedroom apartments (23%).	Yes
Site Planning and Built Form			
Element 3 Height	• Consistent with desired scale and built form of centre. • Ensure interface between zones is managed. • Provide variation in scale, bulk and form.	20 storey / 75.4m in lieu of 10 storey / 32 metres	Refer section 4.3 - Table 3 for a consolidated justification

<table>
<tr>
<td>Element 4
Street Setbacks</td>
<td>

Ensure setbacks to buildings contributes to a distinct street character that is sensitive to pedestrian scale.
Podiums to provide an opportunity for creating a diversity of scale and form at lower levels, whilst taller elements comprise rooftop terraces and gardens at varying levels.
Alternative means to reduce bulk and scale such as green walls and façade articulation encouraged.
Not adversely affect vibrancy and activity required by creating unnecessary breaks in active frontages.

</td>
<td>
A total of 3 separate street setback variations are proposed, these being:

1. Ground Floor (Kishorn Rd) – nil in lieu of 1.5m
2. Level 1 (Kishorn Rd) – nil in lieu of 1.5m
3. Level 2 (Kishorn Rd) –nil in lieu of 1.5m

The variations are considered to be justified in this instance based on the following reasons:

The setback incursions are not the product of seeking additional floor area to benefit development feasibility but rather, in response to the unique architectural form which exhibits an organic approach in its facade / elevation. This organic architectural form is a critical element that is considered to have a significant contribution to the street character and in creating a pedestrian friendly environment.
As evident in Figures 7 to 9 below, all incursions have been compensated for by an area greater than the incursion itself, relative to an area equal to the setback behind the setback line:
<table>
<tr><th>Figure</th><th>Incursion</th><th>Compensation</th></tr>
<tr><td>1</td><td>20.0sqm</td><td>48.1sqm</td></tr>
<tr><td>2</td><td>12.73sqm</td><td>39.57sqm</td></tr>
<tr><td>3</td><td>16.36sqm</td><td>43.05sqm</td></tr>
</table>

The extensive use of landscaping within the ground to podium level, combined with the building form creates a harmonious transition between the subject M10 precinct and those surrounding being M15 to the south and R4 to the west.
Refer architectural design report for detailed assessment on street level built form & scale analysis.

</td>
<td>Complies</td>
</tr>
</table>

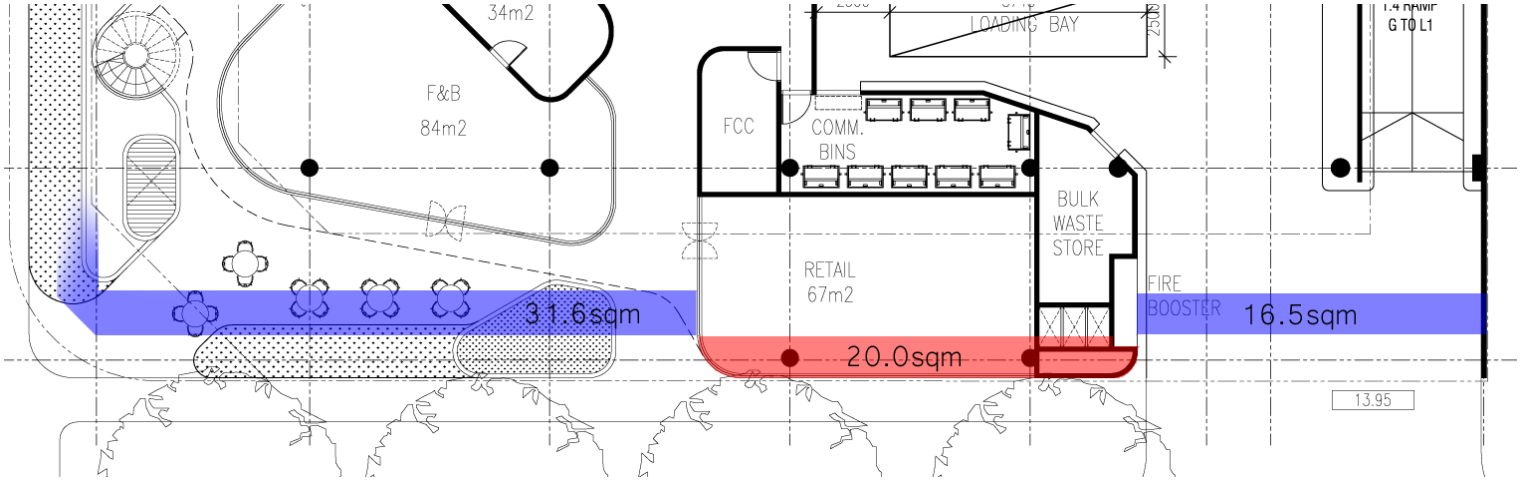

Figure 7 – Extract of Ground Floor (Kishorn Rd) frontage

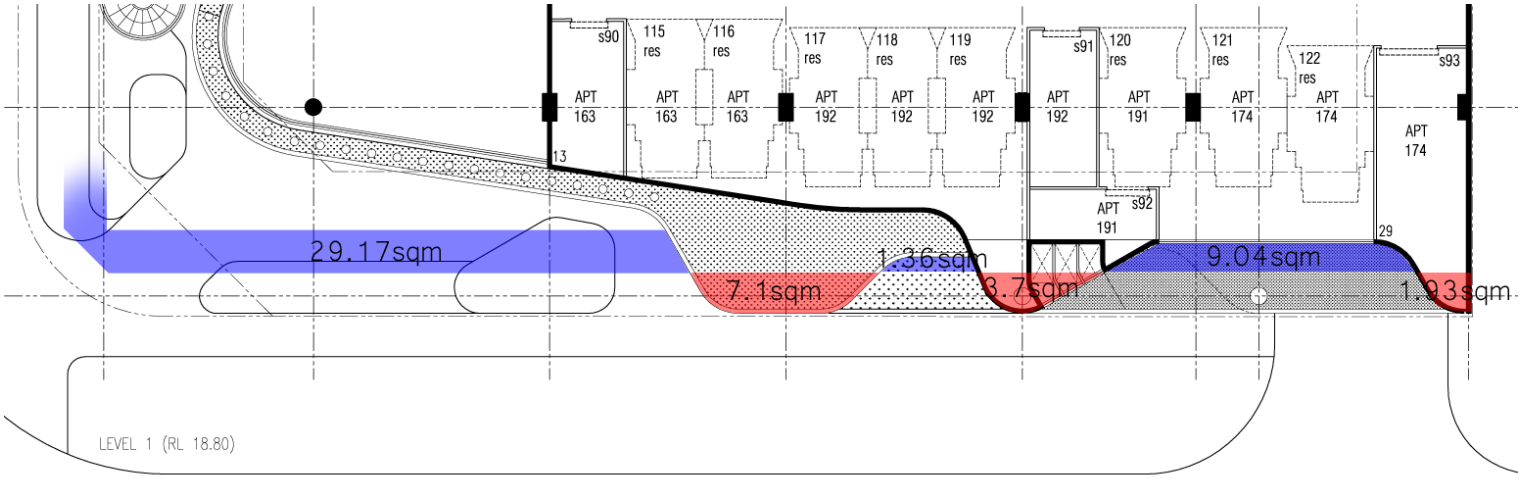

Figure 8 - Extract of Level 1 (Kishorn Rd) frontage

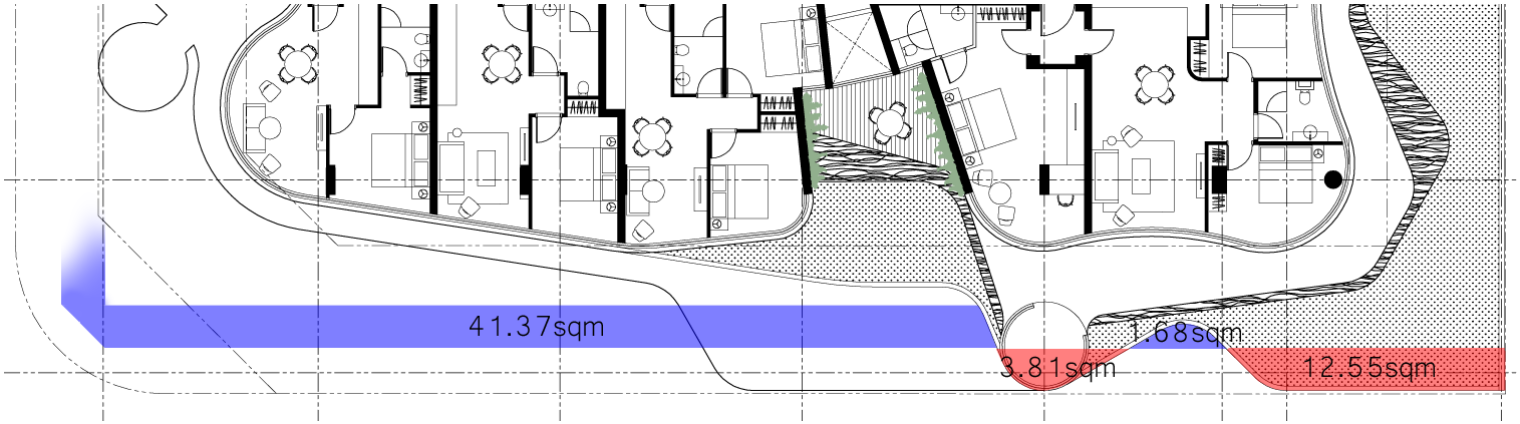

Figure 9 - Extract of Level 2 (Kishorn Rd) frontage

Table 2 - CBACP 'Desired Outcome' Assessment

4.3 Table 3: CBACP 'Bonus Provisions' Assessment

For properties within the M15 or M10 precincts, consideration of **greater height** than permitted in Element 3 may be approved where the relevant Desired Outcomes of all Elements are met or exceeded and where **exemplary design** is proposed in the opinion of the Design Advisory Group and, where the development includes the provision of a significant benefit to the community.

The assessment contained in Table 3 below details the additional design elements which have been incorporated into the proposal to elevate the proposal to one that can be deemed to achieve **exemplary design**. As presented, the proposal achieves:

- 7 out of 7 items in Element 21 - Development bonus based on Design Considerations; and,
- 7 out of 10 items in Element 22 -Development Bonus based on Community Considerations (minimum requirement being 4).

The details contained below are to be read in conjunction with the ***Architect's Design Report*** (ADR) which forms part of this submission. The ADR contains further detailed information with supporting graphics in support of the greater height that is being sought. For clarity and brevity, this AIS will refer to the relevant section of the ADR as applicable.

Requirement	Proposal	Compliance
Bonus Provisions		
Element 21-Development Bonus based on Design Considerations		
Proposal is **exemplary design** in the opinion of the Design Advisory Group	Pre-submission design advisory group meeting (DAG) has indicated that proposal has taken several steps towards achieving 'exemplary design'.	To be confirmed at post lodgment DAG meeting
For development in the M10 Zone, the site shall have a minimum area of 2,000sqm.	2,023sqm	Complies

The proposed development has been designed with regard for solar access for adjacent properties taking into account outdoor living areas, major openings to habitable rooms, solar collectors and balconies.	Due to the infancy of the CBACP, developments surrounding the subject site remain largely undeveloped. That is, existing developments are yet to be redeveloped at their CBACP potential. To this end, assessment of the proposal against existing land uses is a futile assessment. Nevertheless, it is evident based on an overshadowing assessment – refer Figure 11 that the shadow created does not result in any detrimental impact to residential uses nor to existing solar collectors located on residential or commercial uses. From an anticipated future development perspective, lots immediately to the south are contained within the M15 precinct – refer Figure 10, which is anticipated to be built at a minimum of 15-storeys. If approved (and currently under construction) developments are a guide, it would not be unreasonable to presume that these lots will be amalgamated and redeveloped at a height of atleast 25-storeys which would allow any future proposal to sufficiently design around shadow impacts created by the subject proposal.  **Figure 10 –CBACP Precinct breakdown (Source: Google Maps)**	Complies

Figure 11 – Shadow analysis @ winter solstice and comparisons (Source: ADR extract - refer pg 39)

The proposed development meets or exceeds 5 Star Green Star design rating under the Green Building Council of Australia in Quarter 1 and 2 (the Quarters in the City of Melville)	5 star Green Star rating achieved - refer sustainability report contained as **Appendix 3**.	Complies
A traffic statement is submitted showing that the additional floorspace allowed will not unduly impact on the surrounding centre	TIS concludes that traffic movements generated by proposal can be accommodated for within the existing design capacity of the surrounding road network - refer TIS which forms part of ADR.	Complies
The proposed development includes the provision of infrastructure which supports area wide resource efficiency, such as plant and equipment required to reduce the demand for either building or area wide service infrastructure.	The proposal has taken unprecedented steps towards incorporating resource efficiency in the building fabric. Specifically, the proposal includes the following initiatives: • Three-points of venting to communal lobby areas ensures that significant energy is not wasted in the heating or cooling of these areas. Such areas typically have limited access to light and are rarely naturally ventilated, resulting in up to 60% of energy being used (source: City of Sydney) with no inherent benefit to residents. • Grey water reuse system to reduce water consumption for all communal landscape areas; • 'Better Urban Forest Planning' PV cells on roof top reduce reliance on existing power network. • Public end of trip facilities to promote alternative modes of transport to and from the subject site.	Complies

<table>
<tr>
<td>Demonstrates a mitigation of urban heat island effects through the provision and maintenance of landscaping which includes the planting of mature shade trees.</td>
<td>Extensive landscaping proposed throughout the development contributes significantly towards mitigating the urban heat island effect - refer ADR pages 48 to 53 and the comprehensive Landscape report by CAPA page 101 to 127 which contain further detail on the landscaping proposed as part of the project as well as Figure 12 below being an extract of page 53.

The table below summarises the extent of landscaping provided across various levels of the development. Note that the areas listed <u>do not</u> include any areas of balconies, thereby illustrating the extensive benefit the proposal will provide from a landscape perspective.

<table>
<tr><th colspan="5">HORIZONTAL LANDSCAPE AREAS</th></tr>
<tr><th>Level</th><th>Landscape Zone (m²)</th><th>Planting on Structures as deep soil alternative (m²)</th><th>Deep Soil (m²)</th><th>Total landscaping (m²)</th></tr>
<tr><td>Ground</td><td>123.18</td><td>126.57</td><td>53.52</td><td>303.27</td></tr>
<tr><td>Level 1</td><td>70.01</td><td>260.10</td><td rowspan="10"></td><td>330.11</td></tr>
<tr><td>Level 2</td><td>174.29</td><td>413.68</td><td>587.98</td></tr>
<tr><td>Level 3</td><td>42.44</td><td>42.57</td><td>85.01</td></tr>
<tr><td>Level 6</td><td>16.74</td><td>42.43</td><td>59.17</td></tr>
<tr><td>Level 9</td><td>16.74</td><td>42.57</td><td>59.31</td></tr>
<tr><td>Level 12</td><td>16.74</td><td>42.43</td><td>59.17</td></tr>
<tr><td>Level 15</td><td>262.74</td><td>146.37</td><td>409.11</td></tr>
<tr><td>Level 18</td><td>16.74</td><td>42.43</td><td>59.17</td></tr>
<tr><td>Roof</td><td>193.48</td><td>179.76</td><td>373.24</td></tr>
<tr><td>TOTAL</td><td>933.10</td><td>1,338.92</td><td>53.52</td><td>2,325.54</td></tr>
<tr><th colspan="5">VERTICAL LANDSCAPE AREAS</th></tr>
<tr><td colspan="5">1,336.4SQM - TOTAL</td></tr>
</table>

<u>Urban Forest Planning</u>
The value of landscaping within developments has been of particular focus most recently with the publication of the 'Better Urban Forest Planning' by the DPLH (November 2018). The publication has identified the general decline in tree canopy cover and its subsequent impact on the community. What this means for urban & suburban environments is that:</td>
<td>Complies</td>
</tr>
</table>

	○ *Urban trees are disappearing in many suburbs leading to a decline in amenity and value, with flow on health effects as well as increased energy and water costs.* ○ *Tree canopy inequity exists across suburbs with the least canopy cover often in the most socially disadvantaged areas.* ○ *The loss of trees increases the urban heat island (UHI) effect which has potential physical and mental health implications for children, the elderly and lower socioeconomic groups.* ○ *Poorly planned medium and high density development may result in loss of significant trees on private property and on verges.* ○ *Urban greening is an effective public health tool that leads to improved air quality, greater opportunity to walk and carry out other physical activities and reduced UHI effect.* ○ *Suitable trees on private and commercial properties will shade buildings in summer and let in sun in winter resulting in reduced energy bills. They also increase the amenity of private properties.* ○ *Consideration needs to be given to a number of factors including the useful life expectancy of trees and their appropriate management.* ○ *Each street tree contributes to wellness with about $117,000 benefit over its lifespan, providing a high return on investment.* ○ *In Perth, research shows broad leafed street trees generate an enhanced economic value to residential properties of around $17,000.* (Source: 'Better Urban Forest Planning',pg 4) In light of the above, not only does the proposal result in significant design benefits but the extent of community benefits is evidently compelling. The following conclusions are made in this regard: • At 3,661.94sqm of total landscaping being provided (horizontal and vertical), the proposal makes an enormous contribution towards reclaiming lost urban trees in the locality. • The sheer extent and quality of landscaping, combined with the unit typology which sees notably more 3 and 4 bedroom products caters perfectly for the physical and mental well-being of children and the elderly.	

- Whilst no conclusive studies have been performed, the proposal will deliver improved air quality in light of the added number of vegetation able to photosynthesize carbon dioxide.
- As outlined in the ADR, the sky gardens (3 per floor across 6 levels - refer Figures 12 below) plays homage to the typical distance between street trees in a traditional street. 3 x sky gardens across 6 floors equates to 18 "street trees" which, according to the study conducted will have a wellness value in excess of $2.1 million dollars alone over its lifespan. This figure on a dollar by dollar basis well exceeds any other community benefit proposed as part of the proposal such as public art which is set at $500,000.

Figure 13 - Sky Garden breakdown

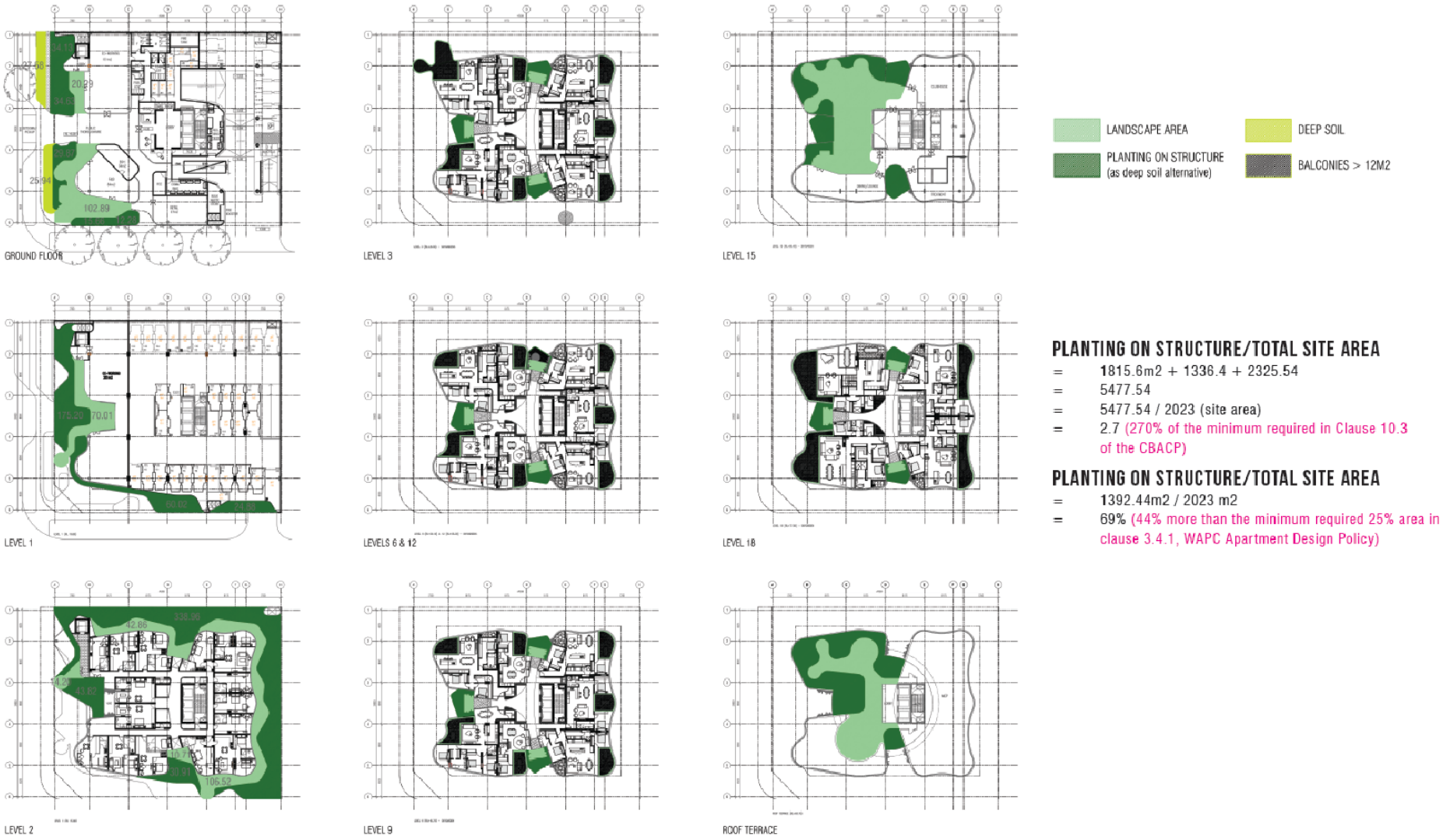

Figure 12 - Extract of ADR Landscape overview (Source: © MJA 2018)

Element 22 - Development Bonus based on Community Considerations Provides a community benefit for the users of the CBACP area in proportion to the additional development being proposed by achieving at least 4 of the following:		
Design comprising high quality active street frontages, furniture and landscaping which contribute to the character of the centre and are kept and maintained.	On the ground floor the open public thoroughfare and active commercial frontages both within the site itself and at the street frontages contribute towards creating an exceptional pedestrian experience. Whilst the primary entrance is via Forbes Rd, the Kishorn Rd aspect is in no way second-class given its layout flanked on either side by the retail and food & beverage facades, landscaped planting as well as alfresco dining. Figure 14 illustrates the walking environment around and within the subject site. Quality landscaping throughout further emphasises the 'green' character of the proposal which responds to the "leafy" surrounds that is characteristic of the locality. The stepped planters / massing between the ground and podium level connects the street trees to the vertical gardens resulting in an interactive civic presence – refer Figure 15. The ADR contains further detailed information on the quality of the street frontages, furniture and landscaping that is being delivered as part of the project: • 134m of active frontage / 300sqm of alfresco and public space – refer page 26; • Street analysis – Kishorn Rd perspective – refer page 43; • Street analysis – Forbes Rd perspective – refer page 44; • Street analysis – Forbes Rd perspective (entrance) – refer page 45; • Street analysis – Kishorn Rd / Forbes Rd intersection – refer page 46; • Overall landscape strategy – refer page 48 to 53 and comprehensive Landscape report by CAPA page 101 to 127;	Complies

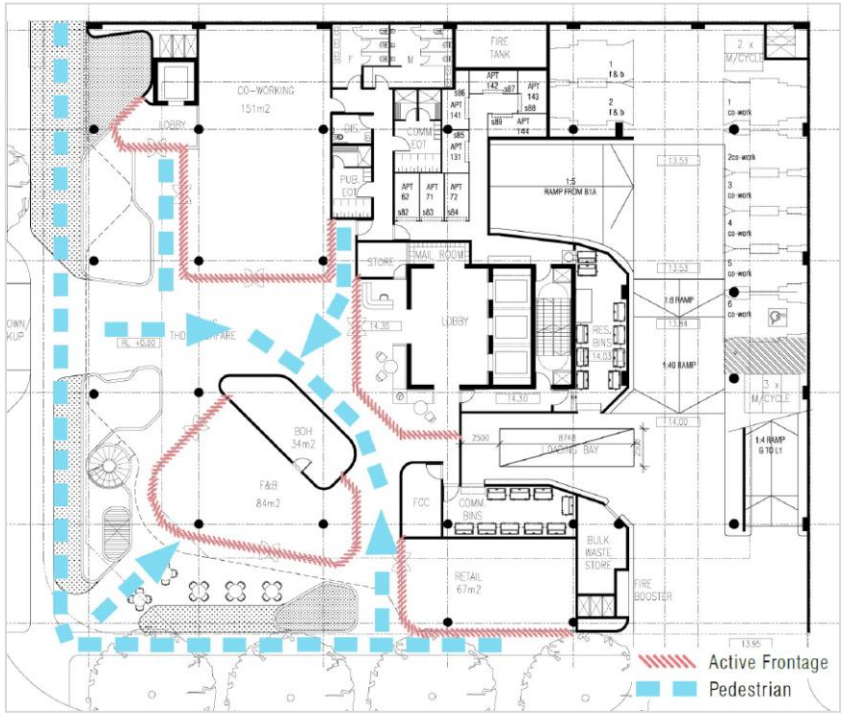

Figure 14 - Walkable environment and active frontages

Figure 15 - Indicative massing treatment and landscaping

Provision of landscaped spaces and/or other facilities accessible to the public such as rooftop and/or podium level gardens and/or incidental recreation spaces and/or equipment and entertainment facilities such as rooftop cinema.	Extensive landscaping at ground level is proposed in amongst active commercial uses. In addition, a 153.9sqm public open space is provided which is directly accessible from Forbes Rd via a set of spiral stairs as well as from the lift and co-working space on the first floor. It is worth noting that public access into a development beyond the ground floor level is unprecedented in the locality at present. As such, the proposal sets a new benchmark in relation to inclusivity and community benefits. Figure 16 below provides an illustration of the synergies that can be achieved between the public open space and other uses such as the co-share environment which forms part of the proposal.	Complies


Figure 16 - Reference imagery of public open space and co-working environment synergies (Source: http://www.andrewlewis.me)

Provision of public facilities such as toilets, showers and sheltered bike storage.	Public end-of-trip facilities provided on the ground floor which are separate to, and in addition of those facilities provided for commercial tenancy staff and visitors. The public end-of-trip facilities including secure bike storage, shower and locker facilities - refer ADR page 28.	Complies
Affordable housing (ceded to the Department of Housing or similar).	Nil	-
Improvement to pedestrian networks or the ceding, free of cost, of pedestrian linkages which contribute to the overall character and connectivity of the centre.	Nil however, Planning Control Area 1.7372 seeks to acquire approximately 2.8m of land along Forbes Rd (total area of approximately 126sqm being 6.2% of the total site area). Whilst details with regard to the future road reservation design for this portion is unknown at this stage, it will be vital for the City, Main Roads WA and/or Dept of Planning, Lands and Heritage to ensure that the pedestrian network is improved in the locality and coordinates with the proposal.	Complies
Provision of view corridors and/or mid-winter sunlight into adjacent properties, particularly where public spaces are provided.	As illustrated in Figure 11 in the preceding sections above, analysis of the shadow impact that the proposal will have on surrounding developments is considered to be negligible.	Complies

Provision of community, communal and/or commercial meeting facilities.	As noted above, a 153.9sqm public open space is provided. In addition, a 412sqm co-working space is provided on the ground and first floor levels. Co-working spaces are a relatively new concept to enter the WA commercial sector however, are quickly gaining traction as an alternative to the traditional office lease. Benefits of co-working include: • **Sense of community –** users become part of a close-knit and productive community. • **Flexibility of job control** - spaces are typically available 24/7 and as such, allow users to work outside of the traditional 9 to 5.In a global business environment, this flexibility is critical. • **Creative & unique spaces** - various working areas are available including enclosed offices, open plan, pods, meeting rooms and gallery / presentation spaces thereby providing the resources of a large office set up at a fraction of the cost. • **Potential for collaboration & networking** - spaces attract a range of professions allowing collaboration with multiple disciplines as well as the creation of new professional relationships. Figure 17 illustrates the concept behind co-working environments – refer ADR page 31.	Complies

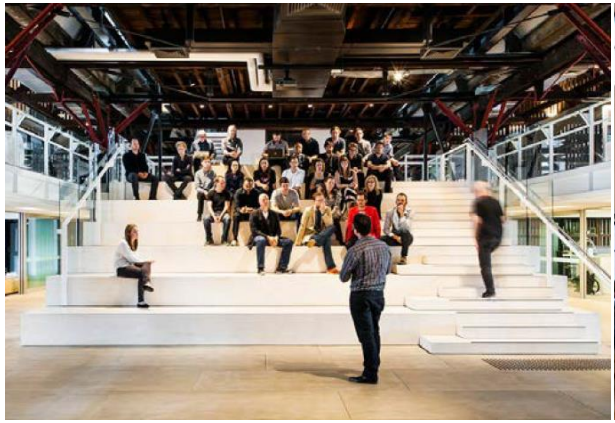

Figure 17 - Indicative co-working area use (Source: MJA 2018)

The development comprises a hotel.	15 x short-stay accommodation options proposed comprising 5 x studio, 5 x 1 bedroom and 5 x 2 bedroom alternatives - refer ADR page 32.	Complies
The development comprises an aged care facility.	Nil	-

The provision of car parking for public use beyond the users of the building, where such bays are ceded to the relevant Local Government free of charge or where such bays are unbundled from private ownership and are permanently made available to any user of the CBACP area by deed or agreement with the Local Government. In Q1 and Q2, Element is only applicable where car parking is capped in total in accordance with Clause 18.3 and 18.4.	Nil	-

Table 3 - CBACP 'Bonus Provisions' Assessment

5.0 Building Height variation – Exemplary Design

For reasons contained in the sections above, the proposed variation to the M10 building height of *10 stories (maximum mixed use up to 32 metres in height)* is considered to be warranted in this instance.

The following summary is provided to reiterate the planning merits which form part of this project:

1. **Landmark Design:** Proposal presents an unprecedented design to the Applecross as well as Perth metropolitan region.

2. **7 out of 7 items** satisfied in Element 21 - Development bonus based on Design Considerations.
   - *21.1* Exemplary Design ✓
   - *21.3* Minimum site area ✓
   - *21.4.1* Sympathetic solar design ✓
   - *21.4.2* 5-star rating ✓
   - *21.4.3* Acceptable traffic impact ✓
   - *21.4.4* Resource efficiency ✓
   - *21.4.5* Reduce urban heat island effect ✓

3. **7 out of 10 items** in Element 22 -Development Bonus based on Community Considerations (minimum requirement being 4).
   - *22.1.1* High quality / active street fronts ✓
   - *22.1.2* Public amenity / spaces ✓
   - *22.1.3* Public facilities ✓
   - *22.1.5* Improved pedestrian network ✓
   - *22.1.6* Sympathetic view & solar design ✓
   - *22.1.7* Community meeting facilities ✓
   - *22.1.8* Hotel / short stay accommodation ✓

4. **Sustainability:** unprecedented sustainability initiatives including superior cross-ventilation of dwellings, reduced energy consumption in communal spaces and minimum 5 star Greenstar commitment.

5. Integrated **landscaping** significantly above the general standards (i.e. 75% or 1,517sqm):
   - **5,477sqm** or **270%** of the site area
   - **1,392sqm or 68.8%** is deep soil or deep soil alternative planting
   - **44%** greater than Design WA Guidelines
   - 6 x **Sky gardens** spread across every third floor

6. **Public Open Space** – podium level space publicly accessible with the added functionality of being collocated next to a co-working space

7. **Active commercial uses & co-working space** to facilitate public meetings, creation of a cultural hub, business incubator

8. **Public end-of-trip facilities & bike storage** – publicly accessible facilities to complement other community orientated land uses and facilities

9. **Short-stay accommodation** diversifies accommodation options for locals as well as international visitors

10. **Pedestrian orientated design** that priorities non-vehicular movement in and around the development

11. Superior **Amenity** of apartments delivered through a unique floorplate design as well as considered separation of land uses to maximise livability and security.

Figure 18 provides a summary extract of the 'Five Ratings' scoring assessment undertaken as part of the project.

Figure 18 – Extract of ADR 'Five ratings' scoring summary (Source: MJR / WOHA 2018)

6.0 Conclusion

Based on the contents of this AIS report, it is clear that the project proposal is one that is unprecedented in the Applecross / CBACP area as well as in the overall Perth metropolitan region.

It delivers a development opportunity for the City of Melville, its residents, working population and the associated government authorities that is class-leading in its calibre of design and community benefits which it will deliver now and into the future.

As considered in detail within the contents of the AIS, the proposal will deliver a high quality, architecturally designed built form outcome that aligns with the objectives of the CBACP. The resulting development will provide a vibrant, mixed-use development outcome that will make a positive contribution to the urban landscape in this strategic centre.

As detailed in the assessment, the proposal has demonstrated that it is generally compliant with the core elements of the CBACP and in most cases, go well above the minimum compliance expectations of the guiding document. Furthermore, where variations have been proposed, these have been proposed in a way that has allowed the proposal to deliver significant design and community-based benefits in its pursuit to achieving design excellence.

On this basis, the support and favourable recommendation of the City of Melville, its Design Advisory Group and administration is requested and the subsequent approval of the Metro Central Joint Development Assessment Panel in its ultimate determination of the project.

Appendices

**

APPENDIX 1

DRP meeting minutes from the meeting held on 1 August 2018

**

NOTES
DESIGN REVIEW PANEL

Meeting Date: **1 August 2018**
Meeting Time: **9.30 am**
Venue: **Swan Room**
Meeting Started: **9:40**

1. Attendance

(a) Panel Members

Dominic Snellgrove	(Chairman - Cameron Chisholm Nicol)
Chris Maher	(Hames Sharley)
Fred Chaney	(Taylor Robinson Chaney Broderick)
Malcolm Mackay	(Mackay Urban Design)

(b) Proponents

Hillam Architects - *Item 1 & 2*
Tuscom Subdivision Consultants Pty Ltd - *Item 3*

(c) City Officers

Siven Naidu	(City of South Perth)
Cameron Howell	(City of South Perth)
Mark Scarfone	(City of Melville)
Ben Ashwood	(City of Melville)
Jack Hobbs	(City of Melville)

(d) Note Taker

Antonetta Papalia (City of Melville)

2. Apologies

Peter Prendergast	(City of Melville)
Damien Pericles	(REALMstudios)

3. Declaration of Interest

Nil

6. Item 3 – 10-14 Forbes Rd & 40 A,B,C Kishorn Road (Pre-application proposal)

19-20 Storey Mixed Use Development comprising 98 Multiple Dwellings, 21 Serviced Apartments, 5 Commercial tenancies and Community Facilities

6.1. Officer Presentation – *Started 11:19*

City of Melville Planning Officer, Jack Hobbs introduced this pre-lodgement item to the Panel.

6.2. Proponent Presentation – *Started 11:34*

Applicant from Tuscom Subdivision Consultants introduced and presented the application to the Design Review Panel.

6.3. Design Quality Principles

Items presented to the Design Review Panel are assessed by a panel of architects using the "design quality principles" and with due regards to Design WA. The design principles include but are not limited to – character, continuity and enclosure, quality of the public realm, ease of movement, legibility, adaptability, diversity and sustainability.

In respect of development within the Canning Bridge Activity Centre Plan area for which a bonus is sought under Clause 21 of Canning Bridge Activity Centre Plan, the development shall, in the opinion of the Panel, be of exemplary design. The proponent shall provide detailed commentary to demonstrate how exemplary design has been achieved.

The Panel will provide commentary regarding the elements of the design that are supported and those that would benefit from further consideration. For preliminary applications, the Panel's comments shall be provided to the proponent to assist in the development of the design.

(a) Strengths of the proposal

The Design Review Panel commended the applicant on its comprehensive presentation and congratulated the architect and developer for their roles in creating a very high quality proposal. The DRP consider that the proposed development is on the path to achieving exemplary design.

Strengths include:

- The design narrative is very important to the proposal, the idea of incorporating the things people love about the suburbs into a vertical form is a very strong one.
- The proposal seeks to exceed 5 star Greenstar rating
- Breaking the tower into three forms assists to break up the building bulk.
- Almost 100% cross ventilation of the dwellings.
- Very high levels of ground plane activation, through the use of the central pedestrian thoroughfare. Servicing and waste management

appears to be well considered, ensuring the majority of the ground floor plane is taken up with active uses.
- Extensive landscaping at all levels of the building.
- Natural light and ventilation to corridors.
- Wind-scoops are really interesting idea. Further detail should be provided as the proposal develops further to demonstrate how this works.
- High quality short-stay dwellings, accessed via dedicated lift.
- Well planned apartments, with good layouts, including good robe space. Typical apartment floor plates create sense of separation. Movement across apartments and communal spaces is good.
- Diverse range of uses and apartment types. The proposed co-working space and community gardens are considered to add another level of interest to the building.
- Amenity deck on the top floor provides all residents with the opportunity to access the available view. The landscape design is consistent with the story of the building and shows dedication to creating a high quality building.
- Community spaces are well thought out. The communal amenity areas on every third floor are well considered.

(b) Weaknesses of the proposal

The applicant is encouraged to consider the following;

- Increase the setbacks to the north and west boundaries to at least the minimum to ensure the amenity of future occupiers is not impacted, particularly for the balcony areas. The applicant is encouraged to provide greater setbacks and to be generous in this respect as increased setbacks will also reduce the impact on adjoining properties.
- Vertical landscaping is supported by the DRP however needs a compelling water, wind and landscaping strategy to demonstrate how this will be achieved in the Perth climate.
- No shadow diagram has been provided.
- The relationship between the proposed vehicle drop off and the streetscape needs further detail. The incorporation of three crossovers works against having a good public domain and good streetscape. The DRP acknowledges the idea behind the vehicle drop off however generally does not support multiple crossovers. If the applicant is to pursue this aspect it needs to demonstrate that it is creating a shared space where pedestrian needs are prioritised over vehicles.
- One apartment at the mezzanine level has an internalised bedroom. It's allowed to be a studio but if it becomes a bedroom then it needs access to natural light.
- Consider waste management to ensure this can occur in an efficient manner on site. The applicant is encouraged to liaise with the City in this respect.
- Provide a staircase to the community garden to draw people up to this space.
- Consider how the entry to the ramp is treated as this can be a prominent element in the streetscape.

(c) Suggested improvements to the proposal

While the Design Review Panel consider the proposal to be tracking to achieving exemplary design, the applicant should address each of the issues identified above as well as providing the following information.

- A wind study which details the impact of wind at the street level, podium levels, the open corridors and the impact on the proposed landscaping.
- Additions street level analysis to understand the impact on and interaction with the H4 zone to the west.
- Analysis of percentage of deep soil zones.

(d) Recommendation

The suggested improvements should be incorporated into the design and additional information provided in support of the proposal. The proposal should be presented to the next available DRP meeting for further comment.

7. Next Meeting

The next meeting has been tentatively booked for 5 September 2018 from 9.30am until 12.30pm.

Meeting finished and closed at 12:55pm

APPENDIX 2

Development Plans

**

APPENDIX 3

Sustainability Report: Floth Sustainable Building Consultants

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SUSTAINABLE BUILDING CONSULTANTS
SYDNEY BRISBANE PERTH MELBOURNE JAKARTA

FORBES & KISHORN ROAD, APPLECROSS RESIDENTIAL TOWER

Sustainability Report for Development Application

Prepared for:

Apex View Pty Ltd

Architects:

WOHA Designs PTE LTD

MJA Studio

Project No: 18236
Date:21 November 2018
Issue No: B

FORBES & KISHORN ROAD, APPLECROSS **18236**
RESIDENTIAL TOWER

SUSTAINABILITY REPORT FOR DEVELOPMENT APPLICATION
ESD SERVICES

This register identifies each issue of and each amendment to this document by Revision No, Page No, the details of each amendment and date of issue.

AMENDMENT REGISTER

Rev. No	Section & Page No.	Issue/ Amendment	Author	Project Engineer	Checked	Date
P1	-	Original Issue	AM	TP	NZ	24/08/2018
A	-	Draft Development Application Issue	AM	TP	NZ	05/09/2018
B	-	Development Application Issue	AM	TP	NZ	21/11/2018

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SYDNEY BRISBANE
PERTH MELBOURNE JAKARTA

EXECUTIVE SUMMARY

Floth Pty Ltd (Floth) has been commissioned by Apex View Pty Ltd to provide ESD Consultancy Services for the proposed residential development located at 10-14 Forbes Road & 40, A, B, C Kishorn Road, Applecross in Western Australia (WA).

This report presents the sustainability assessment for the proposed development as part of the Development Application from the local authority, City of Melville. The report addresses the City of Melville requirements for the Kintail Quarter development, specifically the *Modifications to be read as part of Canning Bridge Activity Centre Plan* dated 21 April 2016 clause 16 which requires a 5 Star Green Star Design rating to be achieved by the development.

The Forbes and Kishorn Road, Applecross Residential Tower development team has the vision to create a sustainable urban environment for the benefit of the building residents, the Kintail Quarter urban area and the wider City of Melville community. The environmental impact of the construction of the proposed development will be reduced through environmentally sustainable development initiatives undertaken during the design and construction of the project.

The ongoing environmental impact of the development will be minimized due to the good passive design features of the building architecture reducing the energy required for cooling and heating of the occupants. The building services will therefore further reduce the energy and water use of the building by incorporating energy and water efficient fixtures and fittings into the design and equipment selections.

The sustainable nature of the development is further enhanced by making it a place where people will want to live and work. This will be done by addressing issues such as the indoor environment, materials selection, transport and the development's sense of community using sustainable design initiatives.

Social benefits will be maximised by the proposed design. High indoor environment quality initiatives would optimise occupant health, wellbeing and satisfaction. Ample communal and recreation facilities including landscaped terraces will enhance interconnectedness and support active lifestyles. In doing so, the building will maximise environmental performance and generate significant resident benefits over its lifecycle.

This ESD performance will be achieved by the holistic integration of ESD elements throughout the building and site design. Wherever possible the ESD elements will be integrated into the building function to achieve the desired level of ESD performance.

Significant work has been undertaken to date to firmly establish best practice ESD design into the proposed development, as follows:

- The residential apartment component is proposed to exceed the minimum average NatHERS Rating of 6 Stars.
- The non-residential components of the development will meet the requirements of BCA Section J Energy Efficiency.
- The development is proposed to achieve a 5 star Green Star Design & As Built v1.2 rating.

Prior to Building Approval, the project is proposed to be formally registered with the Green Building Council for a 5 Star Green Star – Design & As Built v1.2 certified rating. The project will be specified to achieve a 5 Star rating for tender to contractors, following which Green Star Design Review rating is recommended to be based on the contractor's construction documentation prior to Practical Completion, in order to ensure the rating reflects the final design. The Green Star As Built certification will be based on final as constructed documentation and commissioning records, and will occur prior to Project Completion.

In conclusion, it is anticipated that the extent of ESD integration proposed in this project will firmly establish Applecross Residential Tower at the forefront of the Perth sustainable mixed-use residential sector.

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CONTENTS

Forbes & Kishorn Road, Applecross
Residential Tower
Sustainability Report for Development Application
Project Number: 18236
Date: 21 November 2018
Issue: B

1. INTRODUCTION

1.1 SCOPE

This Sustainability Report has been prepared as part of the Development Application for the proposed Residential Tower at corner of Forbes and Kishorn Roads, Applecross.

The report addresses *Modifications to be read as part of Canning Bridge Activity Centre Plan* dated 21 April 2016 clause 16, which states:

> *Clause 21.4.2 of Element 21 being amended as follows: "The proposed development meets or exceeds the 6 star Green Star design rating under the Green Building Council of Australia or other equivalent rating system for the Cassey, Davilak and Mt Henry Quarters (that is the Quarters within the City of South Perth) or the 5 Star Green Star design rating under the Green Building Council of Australia for the Kintail and Ogilvie Quarters (that is the Quarters within the City of Melville). As evidence in support of compliance with the required rating, applicants shall submit as part of their development application either a Green Star Design Review Certificate or a qualified consultant's report supporting the developments achievement of the required level of performance. Under either approach any development approval granted will be conditional upon submission of a Green Star certificate, prior to commencement of the development, which confirms achievement of the required rating."*

As the proposed development is in the Kintail Quarter, this report proposes that the project will pursue a 5-star Green Star - Design & As Built v1.2 rating with the Green Building Council of Australia.

The sustainable design undertaken to date to firmly establish best practice ESD design into the proposed development are summarised as follows:

- The residential component is proposed to exceed the minimum average NatHERS Rating of 6 Stars.
- The non-residential components of the development will meet the requirements of BCA Section J Energy Efficiency.
- The development is proposed to achieve a 5-star Green Star Design & As Built v1.2 rating.

1.2 ENVIRONMENTAL IMPACT OF BUILDINGS

Buildings produce carbon dioxide emissions and other emissions that reduce air quality and contribute to global warming. Buildings also generate waste during construction and operation and can have poor indoor environment quality that harms occupants' health.

A green building minimises the environmental impact and is healthy and comfortable. The Green Building Council of Australia defines a green building as one that incorporates design, construction and operational practices that significantly reduce or eliminate the negative impact of development on the environment and occupants with strategies for addressing:

1. Energy efficiency
2. Greenhouse gas emission abatement
3. Water conservation
4. Waste avoidance, reuse and recycling
5. Pollution prevention – noise, water, air, soil and light
6. Enhanced biodiversity
7. Reduced natural resource consumption
8. Productive and healthier environments and
9. Flexible and adaptable spaces

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1.3 THE GREEN STAR – DESIGN & AS BUILT RATING TOOL

Green Star is a comprehensive, national, voluntary environmental rating system administered by the Green Building Council of Australia1 that evaluates the environmental design and construction of buildings. With more than 26 million square meters of Green Star-certified space around Australia, and a further 538 registered projects, Green Star has transformed Australia's property and construction market.

The first tool released by the Green Building Council of Australia was Green Star Office Design v1.1 in 2003. It was superseded by the release of Green Star Office Design and As-Built version 2, itself subsequently superseded by Green Star Office version 3, and other tools for other building types were also released in 2006 to 2009.

Green Star - Design & As Built, released as v1 in November 2014, is the latest Green Star scheme which provides a united Design and As Built rating and is applicable to all building types (except Class 1, 7a & 10), including mixed-use residential buildings. The scheme was most recently revised to v1.2 in July 2017, incorporating a number of credit upgrades, which is currently mandatory for all new project registrations.

Green Star – Design & As Built covers the following nine categories to assess the environmental impact that is a direct consequence of a project site selection, design, construction and maintenance:

- Management;
- Indoor Environment Quality;
- Energy;
- Transport;
- Water;
- Materials;
- Land Use & Ecology;
- Emissions; and
- Innovation.

Green Star – Design & As Built certification is subject to meeting four (4) eligibility criteria: Spatial Differentiation, Space Use, Conditional Requirements, and Timing of Certification. If one or more of the eligibility criteria are not achieved, the project cannot be certified.

Each category is divided into credits, each of which addresses an initiative that improves or has the potential to improve environmental performance. Points are awarded in each credit for actions that demonstrate that the project has met the overall objectives of Green Star.

The following Green Star certified ratings are available:

- 4 Star Green Star Certified Rating (45-59 points), signifies 'Best Practice' in environmentally sustainable design and/or construction;
- 5 Star Green Star Certified Rating (60-74 points), signifies 'Australian Excellence' in environmentally sustainable design and/or construction;
- 6 Star Green Star Certified Rating (75 points and above), signifies 'World Leadership' in environmentally sustainable design and/or construction.

The project is targeting a 5 Star Green Star certified rating, demonstrating 'Australian Excellence'. Green Star certification is subject to meeting the prescribed eligibility criteria and assessment of the design by the Green Building Council of Australia.

The Green Star Design Review rating is recommended to be assessed by the Green Building Council of Australia independent assessor on the basis of the For-Construction documentation, in order to ensure the rating reflects the final design. The Green Star As-Built rating is assessed on the basis of As-Built documentation together with Commissioning data.

Green Star certification is awarded by the Green Building Council of Australia on the basis of a Green Star Assessment undertaken by two Independent third party Assessors. The project team has identified initiatives

[1] http://www.gbca.org.au/

and design strategies that are believed to comply with the environmental rating requirements. Compliance with the environmental rating requirements is formally awarded by the GBCA independent third party assessor.

This Sustainability Report provides the list of initiatives originally targeted for the development, and nominates those design features that are required to be incorporated to demonstrate the design is articulated to target the nominated 5 Star Green Star rating, but it acknowledges that, should the GBCA independent third party assessor disagree with the project approach to compliance with the credit requirement, the Sustainability Report interpretation of the initiative would take precedence in so far as the interpretation was done “in good faith” and the design complies with the interpretation.

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2. DEVELOPMENT DESCRIPTION

2.1 PROPOSED DEVELOPMENT

The proposed development will consist of predominately residential apartments (98 units) and short-stay accommodation (15 units), as well as retail and commercial tenancies on Ground and Level 1.

The composition of the proposed development is presented below:

Levels	Use
B3	Car Parking
B2	Car Parking
B1	Car Parking
Ground	1 x Retail tenancy, 1 x Retail (Food & Beverage), Commercial Office Space, Commercial End-of-Trip (EOT) Facilities, Refuse Facility and Loading Bay
1	Co-working Space, Car Parking
2	Short-Stay Accommodation
3 - 14	Residential Apartments
15	Recreation Area including Pool, Deck, Lounge, Gym and Spa
16 – 19	Residential Apartments
20	Rooftop Garden and Mechanical Plant

The subject site (ref: Nearmap) is presented below

2.2 PROPOSED SUSTAINABLE DESIGN APPROACH

A primary aim of the development is to create a mixed-use development with practical and cost-effective sustainable design and construction features. Significant work has been undertaken to date to firmly establish best practice ESD design into the proposed development. The development will achieve a 5-star Green Star Design & As Built v1.2 rating. The residential component will exceed the minimum average NatHERS Rating of 6 Stars. The car park, office, co-working, retail, short stay and common areas will meet the requirements of BCA Section J Energy Efficiency.

Social benefits will be maximised by the proposed design. High indoor environment quality initiatives would optimise occupant health, wellbeing and satisfaction. Ample communal and recreation facilities including landscaped terraces will enhance interconnectedness and support active lifestyles. In doing so, the building will maximise environmental performance and generate significant resident benefits over its lifecycle.

This ESD performance would be achieved by the holistic integration of ESD elements throughout the building and site design. Wherever possible the ESD elements would be integrated into the building function to achieve the desired level of ESD performance.

Key innovative aspects of the sustainable design would include the following:

- High-performance façades incorporating spectrally selective glazing, integral shading elements and thermally insulated constructions to minimise solar gains in summer and heat loss in winter, thereby passively providing excellent indoor thermal comfort and energy efficiency.
- High indoor environmental quality and comfort achieved through climate-responsive passive design approach, naturally ventilated dwellings, kitchen and toilet mechanical ventilation extract systems, low off-gassing materials and finishes, acoustical apartment constructions, and appropriate lighting levels.
- Performance-optimised air conditioning systems including high efficiency Variable Refrigerant Flow systems incorporating heat-reclaim technology via zoned fan coil units.
- Carbon monoxide sensors controlling efficient variable speed carpark mechanical ventilation systems to optimise carpark air quality while minimising associated energy consumption.
- High efficiency electrical systems incorporating low energy LED lighting and control systems, regenerative lift drives with sophisticated controls, and power factor correction to minimise demand on energy infrastructure. Occupant sensor controls in common spaces to save energy by switching off air conditioning and lighting when unoccupied. Individual apartment energy metering systems as well as energy efficient appliances will be provided.
- Centralised gas –fired hot water plant inclusive of a solar pre-heat system. Natural gas has inherent lower greenhouse gas emissions compared to electricity. The use of a central hot water system servicing all the apartments also saves energy, equipment and space compared to individual hot water systems.
- Water conservation features including air-cooled heat rejection, high WELS rated fixtures and fittings and fire test water recovery and reuse. Swimming pool water efficiency would be maximised by use of water efficient pool filtration technology and pool covers to reduce evaporation loss. Individual apartment water metering systems as well as water efficient appliances will be provided.
- Extensive common space and sustainable transport initiatives including communal waste recycling, indoor and outdoor recreation facilities, landscaped terraces, spaces for fuel efficient vehicles, bicycle end of trip and storage facilities to encourage the use of bicycles and design for improved pedestrian access to nearby public transport and local amenities.
- Sustainable construction management practices including extended building commissioning and tuning, provision of a detailed building users guide, ISO 14001 accredited environmental management and a high proportion of recycling of construction waste, independent commissioning agent, and services and maintainability reviews.
- Sustainable material selection and minimised emissions in selection and design of all building components, including by water sensitive urban design.

It is anticipated that the extent of ESD integration proposed in this project will firmly establish Applecross Residential Tower at the forefront of the Perth sustainable multi-unit residential sector.

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3. SUSTAINABLE DEVELOPMENT INITIATIVES

3.1 INTRODUCTION

This section of the report examines the sustainability benefits of the new development proposal.

The report addresses the sustainability of the buildings with respect to:

- Nationwide House Energy Rating Scheme (NatHERS) ratings of apartments.
- BCA Section J Energy Efficiency compliance of carpark, retail, office, co-working, short stay and common areas.
- Green Star – Design & As Built v1.2 certification of the development.

3.2 SUSTAINABILITY RATINGS

The project is targeting to achieve the following minimum ratings:

- An average NatHERS rating across all of the residential apartments of 6 stars with no individual apartment having a rating less than 5 stars.
- A Green Star - Design & As Built v1.2 rating of 5 stars.

3.3 BUILT FORM

The built form of the tower has a large impact on the ability of the development being able to achieve its targeted sustainability ratings. That being the case the following passive design initiatives are being targeted to assist in achieving the sustainability ratings:

- Optimise window area for thermal performance, daylight and views
- Provide high performance facades with insulated low-e double glazing units.
- Thermally insulate envelope walls, floors and ceilings;
- Maximise access to natural ventilation paths within the apartments to the extent possible;
- Ensure sufficient window opening sizes for natural ventilation;
- Ensure sufficient sealing of building envelope;
- Providing balconies and terraces integrating shading with occupant amenity.

3.4 ENERGY AND WATER EFFICIENCY STRATEGIES

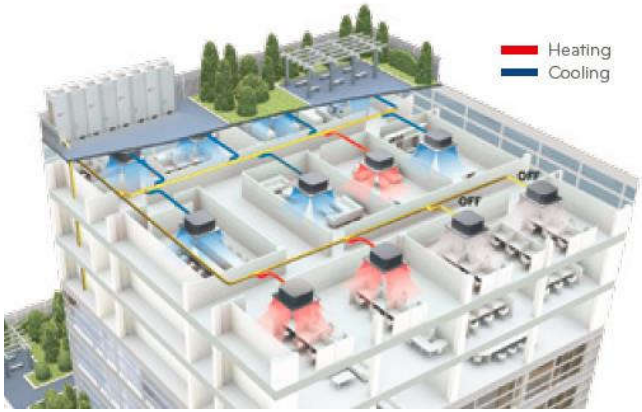
To complement the passive design initiatives incorporated into the built form the following efficiency measures will be implemented in the residential and hotel components of the development to minimise the utility consumption and therefore greenhouse gas emissions. The non-residential development areas will be designed to meet, and in many cases exceed, the minimum requirements of BCA Section J Energy Efficiency.

3.4.1 Mechanical Services

The air conditioning systems will be designed to respond to the environmental performance of the building's façade in order to maximize thermal comfort and reduce energy costs.

The following energy initiatives will be targeted:

- High efficiency air conditioning systems employing inverter-driven Variable Refrigerant Flow and heat reclaim technologies effectively transferring heat and coolth around the building as needed.



- Variable speed fans controlled so that they always operate at the minimum possible speed to satisfy the load.
- Unoccupied common areas are controlled to significantly reduce air conditioning to these areas.
- Major fans to have efficiencies greater than 69%.
- High efficiency motors used throughout.
- Low duct velocities are employed to reduce fan energy.
- Building Management System for central Mechanical Services Plant incorporated to optimize building control.

3.4.2 Electrical Services

The following energy initiatives will be adopted:

- Façade glazing system with a high visible light transmittance (VLT) providing good daylight penetration and minimising requirement for artificial lighting.
- Energy efficient fluorescent and LED lamps will be used for the lighting systems.

- Lighting in common areas will be activated by movement sensors in the access corridors.
- High power factor will be provided to reduce the kVA electrical demand of the building on the external electricity distributor's network.

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3.4.3 Hydraulic Services

The energy used for the hydraulic services is high in a residential building. Domestic hot water will be provided by efficient, low CO_2 emission, solar-boosted, gas powered central plant meeting a minimum 5-star rating.

Energy efficient fittings and fixtures will reduce the pumping power otherwise required.

Variable speed booster/circulating pumps will further reduce energy consumption.

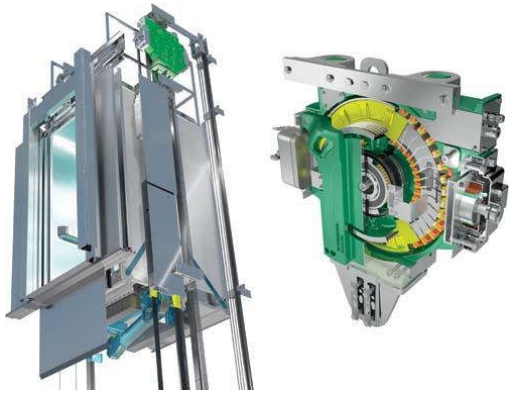
The following features have been incorporated to significantly reduce potable water consumption:

- Minimum 3 star WELS rated tapware for showers.
- Minimum 6 star WELS ratings for other sanitary ware.
- Minimum 5 star WELS clothes washing machines.
- Minimum 6 star WELS dishwashers.
- Fire test water storage/reuse.

3.4.4 Lift Services

The lifts are not large energy consumers. Nevertheless, the following features are incorporated:

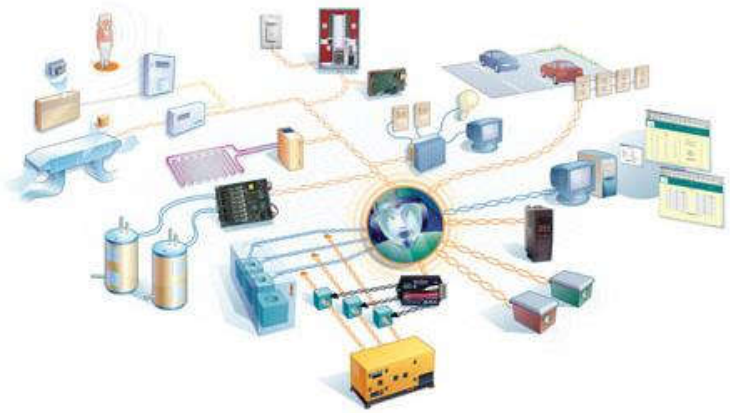
- High efficiency drives with a power factor greater than 0.9.
- Sophisticated control system to optimize the movement of the lifts.
- Re-generative electrical control which reduces energy usage.



3.4.5 Control Systems

The following control facilities are incorporated in the design to assist the building managers optimise the operation of the various building services systems and therefore avoid energy and water wastage.

- Building Management and Control System (BMCS) incorporated to optimize building control.
- Energy and water meters connected to an Energy Metering and Monitoring Systems (EMMS) to meter and monitor major and minor energy and water uses.
- Facility for offsite monitoring of the building performance via the internet.



3.5 GREEN STAR INITIATIVES

In order to quantify these fundamental principles of ESD, the Green Star – Design & As Built Version 1.2 rating system (as promulgated by the Green Building Council of Australia) has been adopted as a means of benchmarking the Ecological Sustainability of the proposed development.

Appended is a preliminary Green Star Matrix identifying the particular credits that are targeted.

In this section, the design initiatives that are proposed to be adopted (and identified in the Credit Summary Sheet) are summarised according to the following nine categories adopted in the rating tool:

- Management;
- Indoor Environment Quality;
- Energy;
- Transport;
- Water;
- Materials;
- Land Use and Ecology;
- Emissions; and
- Innovation

3.5.1 Management

The development is committed to the appropriate management and implementation of the projects, including:

- The involvement of Green Star Accredited Professionals throughout the design and documentation process.
- Setting of environmental performance targets nominated under Owner Project Requirements as 5 Star Green Star certification.
- Thorough commissioning and tuning of all building services and building envelope to obtain optimum performance and energy savings throughout their operational life, to be overseen by an Independent Commissioning Agent.

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- Preparation of "Service and Maintainability Report' with coverage of commissionability, controllability, maintainability, operability and safety, led by the Independent Commissioning Agent.
- Implementation of a Climate Adaptation Plan to AS 5334:2013 for resilience to the impacts of a changing climate.
- Providing comprehensive facilities management information in the form of operations and maintenance manuals and building log book and that facilitates understanding of a building's systems, operation and maintenance requirements, and environmental targets to enable the optimised performance.
- Building owner and tenants/strata management to commit to performance targets and measure and report on a min of 2 indicators out of energy, water, indoor environment and waste.
- Building owner and tenants to commit to best practice 'make good' clauses in the lease in accordance with RICS Greening Make Good.
- A simple Building Users' Guide, which includes information relevant for the building residents and management, will be developed and made available to the building owner and residents.
- Energy and water meters connected to an Energy Metering and Monitoring Systems (EMMS) to meter and monitor major and minor energy and water uses down to individual apartment level.
- Energy metering integrity by validation and monitoring of accuracy of Energy Metering and Monitoring System (EMMS) to ensure that data captured is valid and notifying the building manager in the case of any out-of-range readings.
- Construction environmental management accredited to ISO14001, including high quality staff support practices to promote positive mental and physical health and enhance site workers knowledge of sustainable practices.
- In order to encourage and facilitate the recycling of waste material generated on site and therefore reduce the volume of waste going to land fill, dedicated facilities and storage areas shall be provided for the separation, collection and recycling of waste.

3.5.2 Indoor Environment Quality

In order to ensure that the indoor environment quality throughout the schools is maintained to a high standard, a number of initiatives shall be adopted, including:

- Design ventilation systems to comply with ASHRAE 62.1 separation distances between pollution sources and outdoor air intakes, design for ease of maintenance and cleaning, and ensure clean ductwork at handover via Construction Indoor Air Quality Plan.

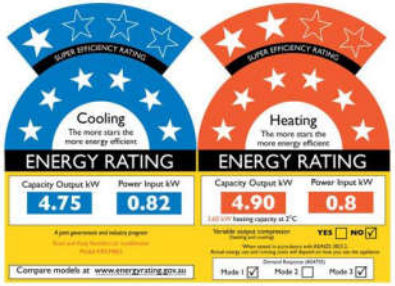
- Provide improved access to natural ventilation for all apartments.
- Limit source pollution or exhaust directly to the outside, nominated pollutants include: printing equipment, cooking equipment and vehicle exhaust.
- Internal noise levels cannot exceed 5 dB(A) for airconditioned or 10 dB(A) for natural ventilation above the "satisfactory" sound levels provided in Table 1 of AS/NZS 2107:2000, to be verified by acoustic testing prior to completion.
- Bounding apartment construction to habitable areas to result in an airborne noise isolation standard of Rw + Ctr ≥ 55.

- Floor construction above habitable rooms of adjacent dwellings (i.e. floor cover) to result in an impact isolation standard of Ln,w+Cl ≤ 55.
- Rw30 apartment doors and acoustic testing prior to completion.
- Lighting systems to have electronic ballasts with minimum CRI of 80.
- Retail and commercial lighting levels to AS1680.2 and compliance with luminaire selection system per section 8.3.4 of AS1680, to ensure well-lit spaces that provide a high degree of comfort to users.
- Residential lighting design includes or permits good maintained illuminance with no exposed light sources for all resi rooms with rated colour variation not exceeding 3 MacAdam Ellipses (decorative fittings exempt), to ensure well-lit spaces that provide a high degree of comfort to apartment occupants.
- Retail and commercial occupants have ability to control lighting in their immediate environment.
- Residential areas are provided with appropriate task lighting for kitchen, bathroom and service areas, and sufficient power outlets for future task lighting.
- The use of building materials and architectural finishes with low Volatile Organic Compound (VOC) content or emissions to minimise the detrimental impact on occupant health from internal air pollutants.
- The use of low emission formaldehyde composite wood products for the reason described above.
- Ensure high levels of residential thermal comfort by providing improved apartment envelope thermal constructions.

3.5.3 Energy

In order to minimise energy consumption and the associated CO2 emissions, the following strategies shall be implemented:

- Improved energy efficiency in design leading to significantly reduced predicted building energy consumption and greenhouse gas generation below BCA Section J and NatHERS compliant reference building, with at least 40% reduction estimated.
- All areas within the building, excluding the dwelling units, includes automated controls to minimise air conditioning and lighting energy use when unoccupied.
- All installed air-conditioning equipment and appliances are within one star of the best available energy star rating (www.energyrating.gov.au).



3.5.4 Transport

In order to reduce dependence on high polluting transport systems and encourage active transport, the following strategies shall be implemented:

- Provision of full cyclist end of trip facilities and cycle storage areas with appropriate accessibility.
- Good public transport access afforded by the site's proximity to public transport routes.

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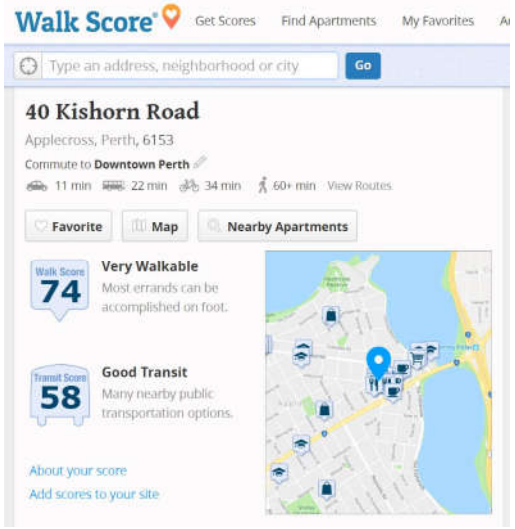
- Pedestrian routes giving very good access to public amenities within walking distance of the development.



3.5.5 Water

In order to minimise potable water consumption, the following initiatives shall be implemented:

- Fixtures shall be selected for their water efficiency, including high WELS rated tap ware and low capacity toilets.
- Air-conditioning heat rejection plant shall be air-cooled to avoid the use of water for this purpose.
- 80% of the routine fire protection system test water and maintenance drain-downs to be stored for reuse on-site and each floor fitted with a sprinkler system has isolation valves or shut-off points for floor-by-floor testing.
- Where landscape irrigation systems are provided they shall be automatically controlled via a system, of timers and sensors to minimise water consumption.

3.5.6 Materials

In order to maximise the reuse of materials, the following initiatives shall be considered:

- At least 20% Portland cement replacement, 50% reclaimed water content and 25% alternative aggregates in all concrete to the extent possible.
- The use of structural steel sourced from responsible steel maker and a high proportion of reinforcing steel made using energy reducing processes and assembled using off site optimal fabrication techniques to the extent possible.
- At least 90% of the total cost of PVC in permanent formwork, pipes, flooring, blinds, cables on the project is replaced by a non-PVC product or is best practice PVC compliant.
- At least 95% of new timber used in the construction of the building shall be PEFC or FSC certified.

- A target of 9% of the project construction value in specified materials (including concrete, steel, flooring, joinery and internal walls used in the project) to have a reduced environmental impact as determined by the Sustainable Products Calculator.

- Attention to the management of waste throughout the construction process including the reuse and recycling of waste materials.

3.5.7 Land Use and Ecology

Where existing site conditions permit:

- Every effort will be made to ensure that the ecological value of the site is improved through appropriate landscaping.
- The project is on a previously developed site, thereby preserving green, undeveloped spaces.

3.5.8 Emissions

In order to minimise emissions from the various sites, the following initiatives shall be incorporated:

- The use of refrigerants in air-conditioning systems and thermal insulants which have zero ozone depletion potential.
- Stormwater drainage detention and treatment system to manage a post-development peak 1.5 year Average Recurrence Interval (ARI) event such that discharge from the site does not exceed the pre-development peak 1.5 year ARI event discharge and all stormwater discharged from site meets the minimum Pollution Reduction Targets.
- The implementation of external lighting designs that reduce light pollution by ensuring that no light beam is directed beyond the site boundaries or upwards into the night sky.
- The use of air-cooled heat rejection systems in lieu of evaporative heat rejection systems that might otherwise present the risk of Legionella.

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3.5.9 Innovations

The following innovations are proposed to be considered beyond minimum Green Star requirements to further distinguish the developments leading environmental aspirations:

- Improved stormwater pollution reduction targets recognised as an innovation by GBCA to reward projects that reduce pollutants entering public sewer infrastructure.
- Commissioning and Tuning supplementary or tenancy systems review recognised as an innovation by GBCA to encourage and recognise commissioning, handover and tuning initiatives that ensure all building services operate to their full potential.
- Ultra low VOC paints with 50% of internally applied paints having no more than 5g/L TVOC content recognised as an innovation by GBCA to reward projects that safeguard occupant health through the reduction in internal air pollutant levels.

- Local Procurement recognised as an innovation by GBCA to reward projects that demonstrate that a significant percentage of the products and materials were produced in Australia and/or that services and skilled labour employed come from the local area surrounding the site.
- Financial Transparency recognised as an innovation by GBCA to reward projects that agree on a disclosure template that comprehensively itemises design, construction, documentation and project costs, and that partake in yearly GBCA report using anonymised data.
- Marketing excellence recognised as an innovation by GBCA to reward projects that research and provide information on the benefits of sustainability in a public and prominent way (e.g. on hoarding and within sales office).
- Design for active living by developing solutions the encourage health and social interaction and inform occupants of gym, pool and external recreation areas and associated health benefits.

APPENDIX A – GREEN STAR ANALYSIS

The following matrix details the targeted minimum ESD performance characteristics subject to further refinement during the building's design and construction stages

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PROJECT: FORBES & KISHORN ROAD, APPLECROSS **Project Number:** 18236

Rev: **Development Application Issue** **Date:** 24-Aug-18

Credit	Aim of the Credit	Code	Criteria	Points Available	5 Star Points Targeted	To Be Confirmed	Remarks
Management							
Green Star Accredited Professional	To recognise the appointment and active involvement of a Green Star Accredited Professional in order to ensure that the rating tool is applied effectively and as intended.	1.1	Accredited Professional	1	1		GSAP contractually engaged since early design stages. GSAP must deliver workshop and hold follow up meetings. Floth staff are Green Star Accredited Professionals.
Commissioning and Tuning	To encourage and recognise commissioning, handover and tuning initiatives that ensure all building services operate to their full potential.	2.0	Environmental PerformanceTargets	Credit Condition	Complies		Targets to be nominated under Design Intent / Owner Project Requirements
		2.1	Services and Maintainability Review	1	1		"Service and Maintainability Report' with coverage of commissionability, controllability, maintainability, operability and safety. (expected from ICA where appointed)
		2.2	Building Commissioning	1	1		Includes 'Commissioning Plan' (expected from ICA where appointed). Commissioning Plan includes Air Permeability Performance Testing.
		2.3	Building Systems Tuning	1	1		Includes 'Building Tuning Plan' (expected from ICA where appointed)
		2.4	Independent Commissioning Agent	1	1		Appoint ICA or FM to advise, monitor, and verify commissioning from design to tuning phases.
Adaptation and Resilience	To encourage and recognise projects that are resilient to the impacts of a changing climate and natural disasters.	3.1	Implementation of a Climate Adaptation Plan	2	2		Adaptation Plan' to AS 5334:2013 required and incorporated into design.
Building Information	To recognise the development and provision of building information that facilitates understanding of a building's systems, operation and maintenance requirements, and environmental targets to enable the optimised performance.	4.0	Building Information	1	1		Comprehensive operations and maintenance information is developed and made available and relevant and current building user information is developed and made available.
Commitment to Performance	To recognise practices that encourage building owners, building occupants and facilities management teams to set targets and monitor environmental performance in a collaborative way.	5.1	Environmental Building Reporting	1	1		Building owner & tenants/strata management to commit to performance targets and measure and report on a min of 2 indicators: energy, water, indoor environment and waste. Innovation point claimable for all 4. Compliant building owner and tenants/strata management commitments required.
		5.2	End of Life Waste Performance	1	1		Building owner & tenants to commit to best practice 'make good' clauses in the lease in accordance with RICS Greening Make Good. Residential Strata Management to commit to extending life of finishes for at least 10 years. Compliant building owner and tenants/strata management commitments required.
Metering and Monitoring	To recognise the implementation of effective energy and water metering and monitoring systems.	6.0	Metering	Credit Condition	Complies		Water and Energy metering and monitoring system to be in place. Common uses for energy includes anything greater than 5% of the total energy or 100kW. Also meters for anything greater than 10% of the water use.
		6.1	Monitoring Systems	1	1		
Responsible Construction Practices	To reward responsible construction practices that manage environmental impacts, enhance staff health and wellbeing and improve sustainability knowledge onsite.	7.0	Environmental Management Plan	Credit Condition	Complies		Create and implement a Construction Environmental Management Plan. Regular inspections must take place during construction.
		7.1	Formalised Environmental Management System	1	1		The system must be certified against one of the following standards: AS/NZS ISO 14001, BS 7750 or European Community's EMAS, or if a project is less than 10M auditor verification is adequate
		7.2	High Quality Staff Support	1	1		High quality staff support practices are in place to promote positive mental and physical health and site workers knowledge of sustainable practices are enhanced.
Operational Waste	To recognise projects that implement waste management plans that facilitate the re-use, upcycling, or conversion of waste into energy and stewardship of items to reduce the quantity of outgoing waste	8.1	Waste in Operations	1	1		Two options: Waste Management Plan by Qualified Auditor OR prescriptive approach inc separation of waste streams, dedicated area, access to area. 85sqm bin rooms area indicated would meet requirements subject to identification of appropriate recycling waste bin provision.
Total				**14**	**14**	**0**	
Indoor Environment Quality							
Quality of Indoor Air	To recognise projects that provide high air quality to occupants.	9.1	Ventilation System Attributes	1	1		Design to comply with ASHRAE 62.1 separation distances btw pollution sources & outdoor air intakes, design for ease of maintenance & cleaning, clean ductwork. Achievable subject to compliant final mechanical design and Construction Indoor Air Quality Plan.
		9.2	Provision of Outside Air	2	1	0.6	1 /2 points for 50%/100% O/A improvement on AS1668.2:2012 for airconditoning or 2 points for natural ventilation (NV) to AS1668.2:2012. Expected to be achieved by NV for all apartments, GBCA approved TQ required to recognise partial points
		9.3	Exhaust or Elimination of Pollutants	1	1		Limit source pollution or exhaust directly to the outside, nominated pollutants include: printing equipment, cooking equipment, vehicle exhaust.
Acoustic Comfort	To reward projects that provide appropriate and comfortable acoustic conditions for occupants.	10.1	Internal Noise Levels	1	1		Internal noise levels cannot exceed 5 dB(A) for airconditioned or 10 dB(A) for natural ventilation above the "satisfactory" sound levels provided in Table 1 of AS/NZS 2107:2000. May not be achieved in all apartments due to natural ventilation. Acoustic testing prior to completion.
		10.2	Reverberation	1		1	Reverberation time below max. recommended in Table 1 of AS/NZS 2108, or 50% of combined floor and ceiling area with NRC of at least 0.5. Additional acoustic treatments required foir retail, not applicable to residential.
		10.3	Enclosed Spaces	1	1		Residential - Rw55 discontinuous intertenancy and corridor walls, Ln,w+CI floors < 55, Rw30 apartment doors and acoustic testing prior to completion. Significant additional acoustic treatments and additoional commissioning testing required.

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PROJECT: FORBES & KISHORN ROAD, APPLECROSS **Project Number:** 18236

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Credit	Aim of the Credit	Code	Criteria	Points Available	5 Star Points Targeted	To Be Confirmed	Remarks
Lighting Comfort	To encourage and recognise well-lit spaces that provide a high degree of comfort to users.	11.0	Minimum Lighting Comfort	Credit Condition	Complies		Electronic ballasts, Minimum CRI of 80
		11.1	General Illuminance and Glare Reduction	1	1		Retail & Commercial - Lighting levels to AS1680.2 & compliance with luminaire selection system per section 8.3.4 of AS1680 Residential - lighting design includes or permits good maintained illuminance with no exposed light sources for all resi rooms with rated colour variation not exceeding 3 MacAdam Ellipses (decorative fittings exempt). Care required in lighting design and specification
		11.2	Surface Illuminance	1			Retail & Commercial - Compliant surface illuminance values calculated per AS/NZS 1680 Appendix B. Luminaires with direct/indirect lighting components required to achieve. Residential - At least one wall in each living space, kitchen and bedrooms are provided with at least one specific wall-washing or a wall mounted fitting. Care required in lighting design and specification
		11.3	Localised control	1	1		Retail & Commercial - Occupants have ability to control lighting in their immediate environment. Achievable by DALI and tenant fitout guide. Residential - appropriate task lighting for kitchen, bathroom and service areas, and sufficient power outlets for future task lighting.
Visual Comfort	To recognise the delivery of well-lit spaces that provide high levels of visual comfort to building occupants.	12.0	Glare Reduction	Credit Condition			Requires shading or blinds to all facades as part of base building. Probable cost of blinds high, proposed to be excluded from base building for provision by tenant fitout.
		12.1	Daylight	2			2% DF for 40% of NLA for 1 point or 60% for 2 points. 1 point claimable if shading or blinds to all facades provided as part of base building - refer above
		12.2	Views	1			1 point for 60% of NLA within 8 metres of vision glazing. 1 point claimable if shading or blinds to all facades provided as part of base building - refer above.
Reduced Exposure to Pollutants	To recognise projects that safeguard occupant health through the reduction in internal air pollutant levels.	13.1	Paints, adhesives, sealants and carpets	1	1		Adhere to VOC limits for paints, adhesives, sealants and carpets.
		13.2	Engineered wood products	1	1		All engineered wood products meet low formaldehyde limits.
Thermal Comfort	To encourage and recognise projects that achieve high levels of thermal comfort.	14.1	Thermal Comfort	1	1		Retail & Commercial - Thermal comfort modelling verifies PMV within +/-1. Residential - average 7 star NatHERS.
		14.2	Advanced Thermal Comfort	1			Retail & Commercial - Thermal comfort modelling verifies PMV within +/-0.5 Residential - average 8 star NatHERS
Total				**17**	**10**	**1.6**	
Energy							
Greenhouse Gas Emissions	To encourage the reduction of greenhouse gas (GHG) emissions associated with the use of energy in building operations.	15.B or E	Conditional Requirement	Credit Condition	Complies		The minimum number of points to be achieved in this credit for a 5 Star target rating is 3 points, the minimum number of points for 6 Star target is 6 points.
		15.B or E	GHG emissions reduction	20	6	2	GHG emissions reductions achieved based on Section J DTS reference, can include 10 year Green Power commitment for a maximum of 50% of the points. Improved 7+ star NatHERS average required, with high eff'y HVAC, lighting and DHW design indicated points by NatHERS Pathway calculator achievable. Higher points possible via Modelled Performance Pathway and with ~30kWp PV system..
Peak Electricity Demand Reduction	To encourage the reduction of peak demand load on the electricity network infrastructure.	16.1-A	Deemed to Satisfy Pathway	1			15% peak energy demand reduction for 1 point limit
		16.1-B	Reference Building Pathway	2		2	20%/30% for 1/2 points. Based on Modelled Performance Pathway
Total				**22**	**6**	**4**	
Transport							
Sustainable Transport	To reward projects that implement design and operational measures that reduce the carbon emissions arising from occupant travel to and from the project, when compared to a benchmark building. This also promotes the health and fitness of commuters, and the increased liveability of the location.	17-A.1	Modelled Pathway	10			The points are determined by the transportation calculator.
		17-B.1	Access by Public Transport	3	3		Points are determined by the Public Transport calculator. This project achieves 3 points due to its location.
		17-B.2	Reduced Car Parking Provision	1		1	The number of carparks required is determined by the accessibility rating of the project and peak occupancy. Subject to maximum building occupancy to be determined by Certifier.
		17-B.3	Low Emission Vehicle Infrastructure	1		1	15% fuel eff. car (min 10% small car, up to 5% m/c), carshare or 5% elec car parks. Based on 177 carparks, requires min. 18 small fuel efficient vehicle parks and 9 m/c parks which may result in spatial saving, subject to client acceptance.
		17-B.4	Active Transport Facilities	1	1		Cycle facilities: residents rate varies subject to dwelling number and for visitors is 5% of dwellings. 7.5% Retail and commercial staff cycle parks, changeroom, showers and lockers required + 5% visitors. Requires 80 residential cycle parks, 8 Retail/Commercial Staff cycle parks, 11 Visitors cycle parks, 4 Staff Showers,15 Staff lockers with changing amenities with appropriate drying space. Architecure required to comply to achieve credit.
		17-B.5	Walkable Neighbourhood	1	1		8 amenities within 400m or Walkscore of at least 70. This project achieves a walkscore of 74 due to its location.
Total				**10**	**5**	**2**	

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Credit	Aim of the Credit	Code	Criteria	Points Available	5 Star Points Targeted	To Be Confirmed	Remarks
Water							
Potable Water	To encourage building design that minimises potable water consumption in operations.	18-A.1	Potable Water - Modelled Pathway	12			Points to be verified based on a percent reduction via potable water calculator using WC (4 Star WELS), Urinal (6 Star WELS), Showers (6 lpm), Taps (2lpm), rainwater & condensate harvesting. Detailed water analysis required to confirm points.
		18-B.1	Sanitary Fixture Efficiency	1	1		Min. WELS efficiency of taps is 6 Star, urinals is 6 Star, Toilet is 5 Star, Showers is 3 Star, Clothes washing machines is 5 Star and Dishwashers is 6 Star
		18-B.2	Rainwater Reuse	1		1	Requires 10L/m2 rainwater tank. Inclusion and acceptance of <120kL rainwater tank appropriate to development subject to GBCA TQ approval.
		18-B.3	Heat Rejection	2	2		Requires no potable water use for cooling towers
		18-B.4	Landscape Irrigation	1	1		Drip irrigation with moisture sensor or no potable water use in irrigation
		18-B.5	Fire System Test Water	1	1		No water is expelled for fire water testing, or fire system includes storage and reuse of 80% of routine fire protection test water and annual maintenance draindowns. Sprinkler systems include isolation valves or shut-off points for floor-by-floor testing.
Total				**12**	**5**	**1**	
Materials							
Life Cycle Impacts	Life Cycle Assessment Model	19.A.1	Comparative Life Cycle Assessment	6			130%+ cumulative Lifecycle Analysis impact reduction required. Note: max of 7 points are available for option 19.A.
		19.A.2	Additional Reporting	4			Requires using the LCA to inform design by: additional life cycle impact reporting, material selection improvent, construction process improvements and/or LCA design review.
		19.B.1	Concrete	3	1	1	20%/40%reduction in Portland Cement content in concrete compared to reference for 1/2 points, 50% reclaimed mix water for 0.5 point, 25% manufactured sand fine aggregate or 40% crushed slag coarse aggregate for 0.5 points.
		19.B.2	Steel	1	1		5% reduction in reinforcing steel compared to reference structural design. Sructural design to comply.
		19.B.3	Building Reuse	4			Façade reuse OR structure reuse
Responsible Building Materials	To reward projects that include materials that are responsibly sourced or have a sustainable supply chain.	20.1	Responsible Steel Maker and Fabricator	1	1		Certified steel contractor required
		20.2	Timber	1	1		At least 95% of timber is certified or from a reused source
		20.3	Cables, pipes, floors and blinds	1	1		All permanent formwork, pipes, flooring, blinds, cables meet Best Practice PVC or do not contain PVC and have an Environmental Product Declaration.
Sustainable Products	To encourage sustainability and transparency in product specification.	21.1	Sustainable Products	3	3		1/2/3 points for 3/6/9% sustainable products based on manufacturer documentation. Higher points found to be cost neutral with care in final building product selections.
Construction and Demolition Waste	To reward projects that reduce construction waste going to landfill by reusing or recycling building materials	22.1	Reduction of Construction and Demolition Waste	1		1	1 point for 90% diversion OR less than 10 kg/m2 of GFA. Waste contractor must have a Compliance Verification Summary or provide a comlpiant Disclosure Statement. Waste contractor to waste tracking and reporting to comply. Subject to Waste Contractor performance.
Total				**14**	**8**	**2**	
Land Use & Ecology							
Ecological Value	To reward projects that improve the ecological value of their site.	23.0	Endangered, Threatened or Vulnerable Species	-	Complies		There may be no critically endangered or vulnerable species, or ecological communities present on the site at the time of purchase.
		23.1	Ecological Value	3			1%/10%/20% improvement for 1 /2/3points. This is determined using the Ecological Value calculator. Points subject to detailed comparison of pre- and post-development planting
Sustainable Sites	To reward projects that choose to develop sites that have limited ecological value, re-use previously developed land and remediate contaminate land.	24.0	Conditional Requirement	-	Complies		The project site does not contain a wetland, old growth forest or any "Matters of National Significance"
		24.1	Reuse of Land	1	1		75% of the site was previously developed
		24.2	Contamination and Hazardous Materials	1	1		hazardous materials audit and stabilsation of removal in accordance with best practice guidelines of any asbestos, lead paints, PCB found in existing structures on site. Best practice remediation of site contamination present at time of purchase
Heat Island Effect	To encourage and recognise projects that reduce the contribution of the project site to the heat island effect.	25.0	Heat Island Effect Reduction	1			At least 75% of total project site area comprises building or landscaping elements that reduce impact of heat island effect. Requires >82% solar reflectance for a flat roof or green roof. eg. Colorbond "Coolmax - Whitehaven" with a SRI of 95 or Tremco Alucobond trafficable concrete roof membrane. PV area is excluded from the roof SRI calculations.
Total				**6**	**2**	**0**	
Emissions							
Stormwater	To reward projects that minimise peak stormwater flows and reduce pollutants entering public sewer infrastructure.	26.1	Reduced Peak Discharge	1	1		Design the site so that there is increase in peak discharge based on climate change scenarios or Council flood levels guidance, typically achieved by complying with Council requirements.
		26.2	Reduced Pollution Targets	1	1		Additional points available for improved pollution reduction for TSS, Gross Pollutants, Total Nitrogen, Total Phosphorus, Total Petroleum Hydrocarbons, Free Oils. Innovation points available for improvement, typically achieved by complying with Council requirements.

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Credit	Aim of the Credit	Code	Criteria	Points Available	5 Star Points Targeted	To Be Confirmed	Remarks
Light Pollution	To reward projects that minimise light pollution.	27.0	Light Pollution to Neighbouring Properties	-	Complies		Outdoor lighting to comply with AS 4282:1997 Control of Obtrusive Effects of Outdoor Lighting
		27.1	Light Pollution to Night Sky	1	1		Upward Light Output Ratio (ULOR) no more than 5% or no more than 0.5Lux to site boundary and 0.1Lux to 4.5m into night sky. Care in external lighting and signage design to achieve.
Microbial Control	To recognise projects that implement systems to minimise the impacts associated with harmful microbes in building systems.	28.0	Legionella Impacts from Cooling Systems	1	1		No evaporative heat rejection or Constant water movement, no water stored btw 20-50deg.C & no aerosol spray (drift eliminators not acceptable). OR Legionella Plan and risk management.
Refrigerant Impacts	To encourage operational practices that minimise the environmental impacts of refrigeration equipment.	29.1	Refrigerant Impacts	1			Assessed by refrigerant impact calculator which limits global warming potential and ozone depletion potential.
Total				**5**	**4**	**0**	
Innovation							
Innovative Technology or Process	The project meets the aims of an existing credit using a technology or process that is considered innovative in Australia or the world.	30.A	Innovative Technology or Process				Examples of Potential Credits **(proposed innovations):** *Individual Comfort - 1 pt for providing individual comfort control in all primary spaces. *Onsite Renewable Energy - up to 2 pts for a min 10% renewable energy system. *Building Integrated Photovoltaics - 1 pt for BIPV for a min of 15% *Heat rejection - 1 pt where for reducing potable water in heat rejection system *Passive Design - 1 pt for projects that use passive water treatment systems
Market Transformation	The project has undertaken a sustainability initiative that substantially contributes to the broader market transformation towards sustainable development in Australia or in the world.	30.B	Market Transformation				Examples of Potential Credits **(proposed innovations)** : *BSRIA Soft Landings Framework for building commissioning and tuning *Sustainable sourcing of concrete aggregates
Improving on Green Star Benchmarks	The project has achieved full points in a Green Star credit and demonstrates a substantial improvement on the benchmark required to achieve full points.	30.C	Improving on Green Star Benchmarks		3		Examples of Potential Credits (proposed innovations): ***Stormwater Pollution Targets - improved to B for 1 point or C for 2 points** ***Commissioning and Tuning - Supplementary or tenancy systems review** *Commitment to Performance - all 4 indicators *Visual Comfort - Daylight to 80% area ***Indoor Pollutants - Ultra Low VOC paints** *Greenhouse Gas Emissions - Reference Building Pathway + 5% export *Sustainable Transport - No new car parks onsite *Potable Water - <10% Discharge to sewer
Innovation Challenge	Where the project addresses an sustainability issue not included within any of the Credits in the existing Green Star rating tools.	30.D	Innovation Challenge	10	3	1	Examples of Potential Credits **(proposed innovations):** * Carbon Neutral Buildings * Community Benefits *** Local Procurement: Demonstrate that a significant percentage of the products and materials were produced in Australia (for 1 point) and/or that services and skilled labour employed come from the local area surrounding the site (for 1 point).** * Integrating Healthy Environments * Culture, Heritage & Identity: adaptive re-use and uptake of heritage listed site features, celebrating the heritage value of the asset with signage/app. *** Marketing Excellence: Perform market research and provide information on the benefits of sustainability in a public and prominent way (eg. on hoarding and within leasing office)** * Reconcilitaion Action Plan * Market Intelligence: Occupant Satisfaction Survey *** Financial Transparency: Agree on a disclosure template that comprehensively itemises design, construction, documentation and project costs. Agree to partake in yearly GBCA report using anonymised data.** * High Performance Site Office: Demonstrate that a site shed(s) that complies with at least 75% of the requirements in the HPSO Checklist has been used for majority of siteworks. * Affordable Housing
Global Sustainability	Project teams may adopt an approved credit from a Global Green Building Rating tool that addresses a sustainability issue that is currently outside the scope of this Green Star rating tools.	30.E	Global Sustainability			1	Examples Potential Credits **(proposed innovations)**: *Beauty and Spirit (Living Building Challenge 3.1) *Inspiration and Education (Living Building Challenge 3.1) *LEED Integrative Design Process *Green Star Performance: Green Cleaning *Green Star Performance: Procurement and Purchasing
Total				**10**	**6**	**2**	
TOTAL				**110**	**60**	**12.6**	Minimum required for 5 Star is 60 points, achievable with buffer from credits to be confirmed