



Sustainability Management Plan

699 La Trobe Street

Issue 1 | 23 August 2024

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699 La Trobe Street	
Sustainability Management Plan	

Salta					
Revision	Date				
01	23 August 2024	Description	Issue for Town Planning		
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Introduction

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Strategy Overview

Desire for an exemplar outcome

This report provides an overview of the Sustainability Management Plan for the redevelopment of 699 La Trobe Street by Salta Properties (Docklands) Pty Ltd.

Arup have developed a comprehensive sustainability strategy for this project with Salta, with consideration of other key stakeholders and Fender Katsalidis (FK) as the lead architect. The sustainability strategy considers a holistic approach, using the Green Star tool as a facilitator, with the target to achieve a 5 star Green Star rating. This is driven with the ambition to meet aspects of the emerging mandatory planning requirements for the City of Melbourne including Green Factor.

An overview of the applicable requirements for the development for the City of Melbourne have been outlined and are directly addressed within this report on the basis of the proposed design.

The design of the development is considered to meet and exceed these requirements and is committed to meeting the targets outlined within this report within the final design.

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Policy Requirements



Developer Targets



Sustainability Strategy Responds to All Key Drivers

Project drivers and influences

Primarily includes legal, tenant and organisational level



Site Context

Docklands

The proposed development is located at 699 La Trobe Street in Docklands, in close proximity to the Melbourne CBD. The proposed building will be developed as a Build to Rent (BTR) building.

- Southern Cross Station is a 10 minute (~1km) walk giving residents easy access to public transport
- Trams operate on the Harbour Esplanade connecting occupants into the city.
- The site overlooks the Yarra River, providing residents with aesthetic views.
- It is in close proximity to many restaurants, cafes and bars in the Docklands area including the waterfront.
- Marvel Stadium, a multi-purpose venue catering to major sports and entertainment events, is immediately adjacent.

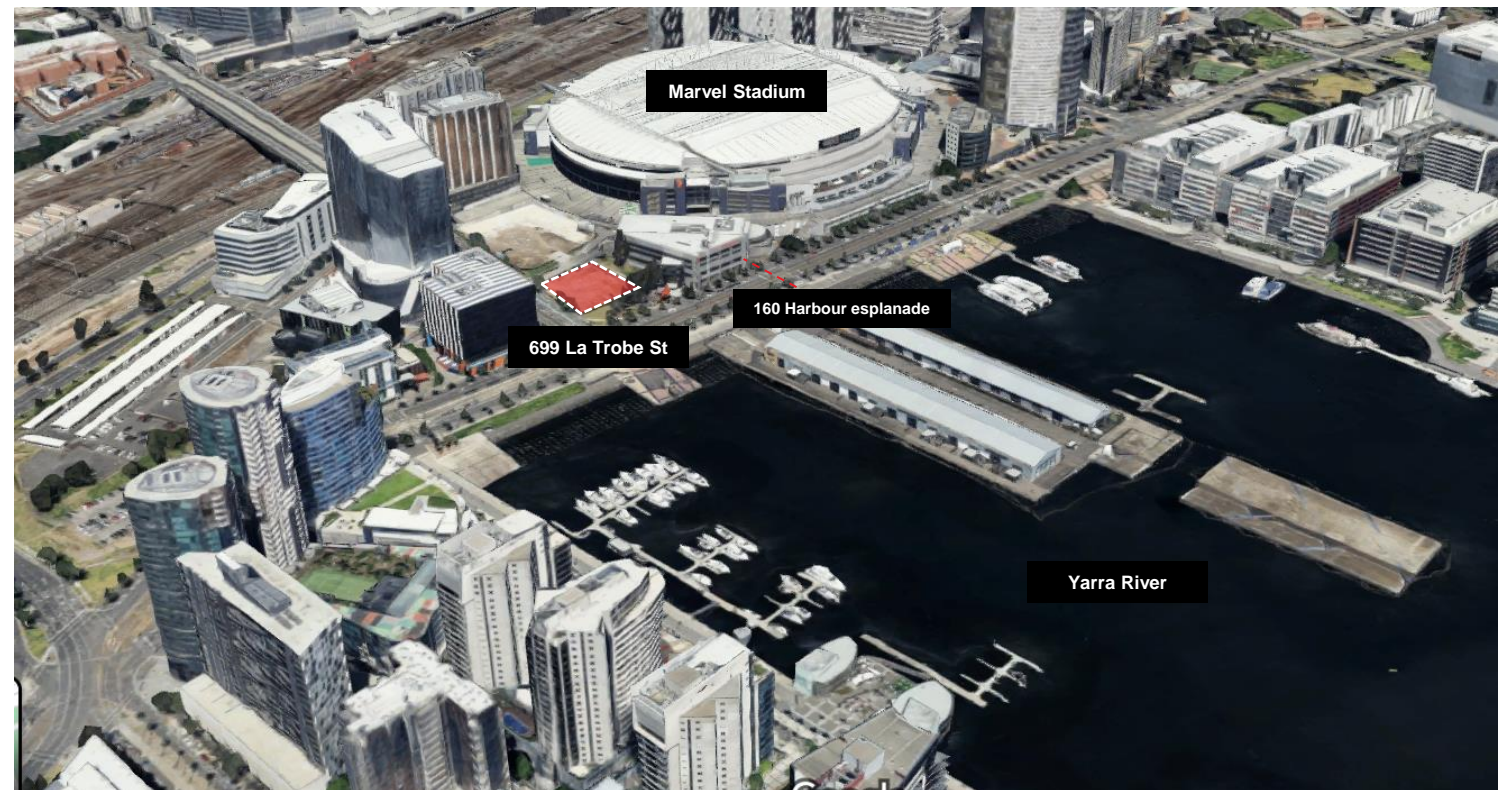
699 La Trobe St context

Close to some of Melbourne's most popular amenities

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Project Overview

Build to Rent Development

The project will provide 560 residential apartments including 1, 2 and 3 bedroom units that can be rented.

The apartments are provided over 37 levels with a 6 level podium to engage with the ground plane and manage wind affects and a single basement level.

The building will feature shared amenity for residents including lounge, co-working space, café, bike workshop and private gardens as well as 114 car parking spaces.

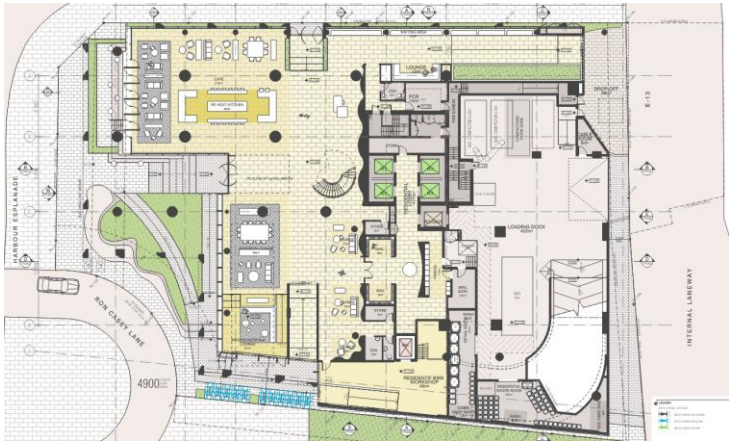
Key sustainable design strategies being implemented include:

- Certified 5 star Green Star Buildings rating
- 7 star NatHERS average target
- Green Factor aligned design with integrated landscaping
- All electric building with heat pumps for hot water
- 20% reduction in upfront carbon through materials
- Bike parking to meet Green Star requirements
- Rainwater harvesting and reuse on-site

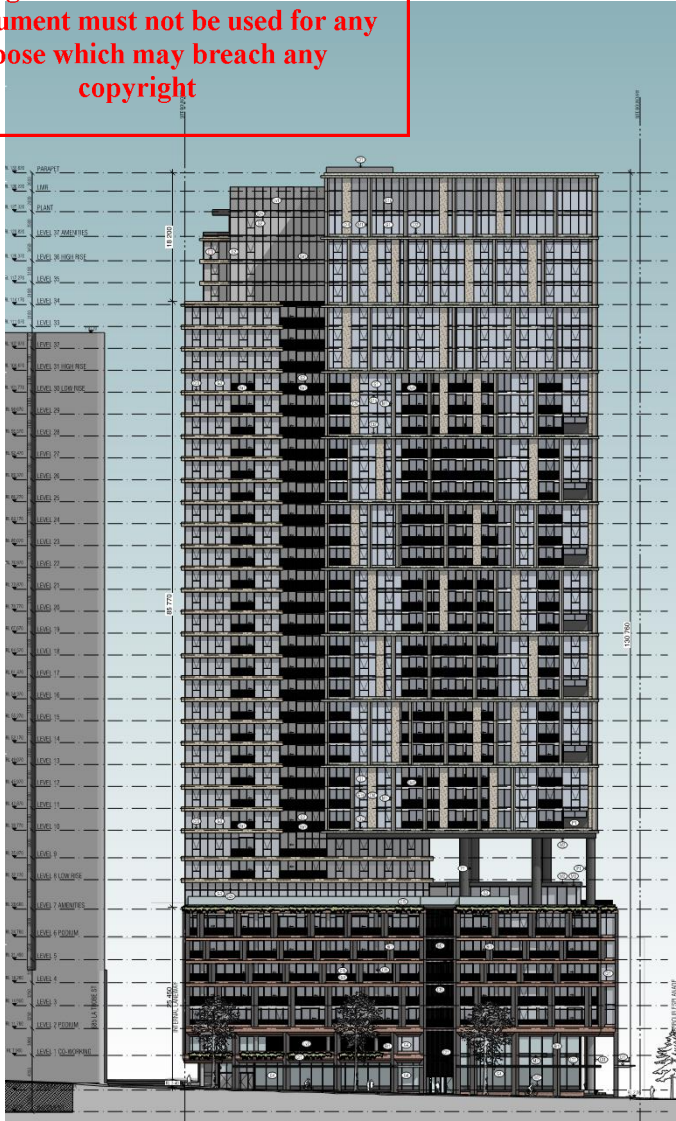
Extracts from FK Planning Documents

Development Summary and Drawings

SUMMARY	
SITE AREA	2 692 m ² *
TOTAL GFA	58 460 m ²
TOTAL APTS	560
TOTAL APTS NSA	36 632 m ²
TOTAL INT. AMENITIES	2 494 m ²
INT.AMENITIES/APT	4.60m ² /apt
TOTAL EXT.AMENITIES	1 319 m ²
EXT.AMENTIES/APT	2.17m ² /apt
TOTAL CAR SPACES	114
CARSPACES/APT	0.20 spaces/apt



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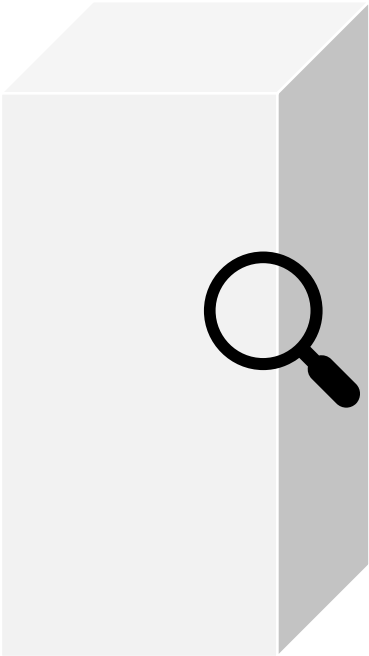


Policy Review

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City of Melbourne Planning Policy

Clause 15.01-2L-01

Clause 15.01-2L-01 Energy and Resource Efficiency of the Melbourne Planning Scheme has several performance measures pertaining to sustainable building design for this type of building (Accommodation, more than 5,000m² of gross floor area).

All are being met and exceeded by the proposed development at 699 La Trobe St to meet current and emerging expectations for sustainability.

The table inset summarises the requirements and the project’s responses.

This is expanded upon in the following pages and documented within this report.

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Performance Measures	699 La Trobe Street Response
Overall – 5 star rating under current version of Green Star rating tool or equivalent	Salta are committed to achieving a certified 5 star Green Star Buildings rating which represents the most up to date version of the Green Star Buildings rating. The design has been established using v1B but is not currently registered.
Energy Efficiency – N/A as considered to be sufficiently covered by the Building Code of Australia	Salta are pursuing Credit Achievement for Credit 22 Energy Use from Green Star Buildings which requires at least a 7 star NatHERS rating to be achieved on average. This exceeds currently applicable NatHERS requirements.
Water Efficiency – 3pointsforWat-1credit under the Green Star – Office rating tool or equivalent.	We propose the Minimum Expectation for Credit 25 Water Use from the current Green Star Buildings as equivalent to the former Multi-Residential rating tool in Green Star when this policy was written. This represents a minimum 10% reduction in potable water consumption compared to a reference building.



C376 Planning Amendment

Consideration Given

We acknowledge that the C376 Planning Scheme Amendment: Sustainable Building Design (C376) was endorsed by Council on the 15th of September 2020 and is anticipated to be adopted in the future.

The sustainability ambitions of the amendment are a significant extension on the previous planning scheme, and more in alignment with the requirements to meet climate emergency targets such as the 2019 Paris Agreement.

We respect the ambition on this policy and have reviewed it against our design as it has evolved in order to present our performance against it for consideration.

We understand it is not yet a policy requirement but has been considered to ensure a future proofed and emerging policy aligned building is developed and delivered for Salta within the City of Melbourne.

The table to the right summarises each of the requirements in the new amendment. Further details on each category are provided on the following pages with regards to our response.

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	Minimum (Mandatory)	Preferred (Discretionary)
Overall Table 1	<ul style="list-style-type: none">Green Star Buildings 5 star certified within 12 months of occupation.	<ul style="list-style-type: none">Green Star Buildings 6 star certified within 12 months of occupation.
Energy Efficiency Table 2	<ul style="list-style-type: none">7.5 star NatHERS average	<ul style="list-style-type: none">NABERS for Apartments 6 star Energy rating in operation
Renewables Table 3	-	<ul style="list-style-type: none">Incorporate on-site renewable energy.Not incorporate connections to gas services or other non-renewable energy.
Waste + Resource Recovery Table 4	<ul style="list-style-type: none">Waste and resource recovery facilities evidenced with suitable plan.	<ul style="list-style-type: none">Minimise landfill from construction waste and maximise resource recovery.
Urban Heat Island Table 5	<ul style="list-style-type: none">75% of more of total site area reduce the impact including landscaping, solar panels, light roofs or shaded areas.	<ul style="list-style-type: none">Consider façade reflectivity, passive heating and cooling strategies and cool external surface strategies such as permeable paving.
Urban Ecology Table 6	<ul style="list-style-type: none">0.55 or more using the City of Melbourne’s Green Factor tool.Support various green cover maintenance and support strategies.	
Integrated Water Management Table 7	<ul style="list-style-type: none">Best Practice CSIRO Guideline Targets for Stormwater Management.Connect to precinct recycled water if available.Minimum supply of rainwater to 10% of demand <u>or</u> to support urban greening.	<ul style="list-style-type: none">Implement alternative water for all non-potable uses on-site where technically achievable.
Table 8	<ul style="list-style-type: none">At least a 4 star NABERS Water rating in operation.	



Overall Sustainability



Mandatory

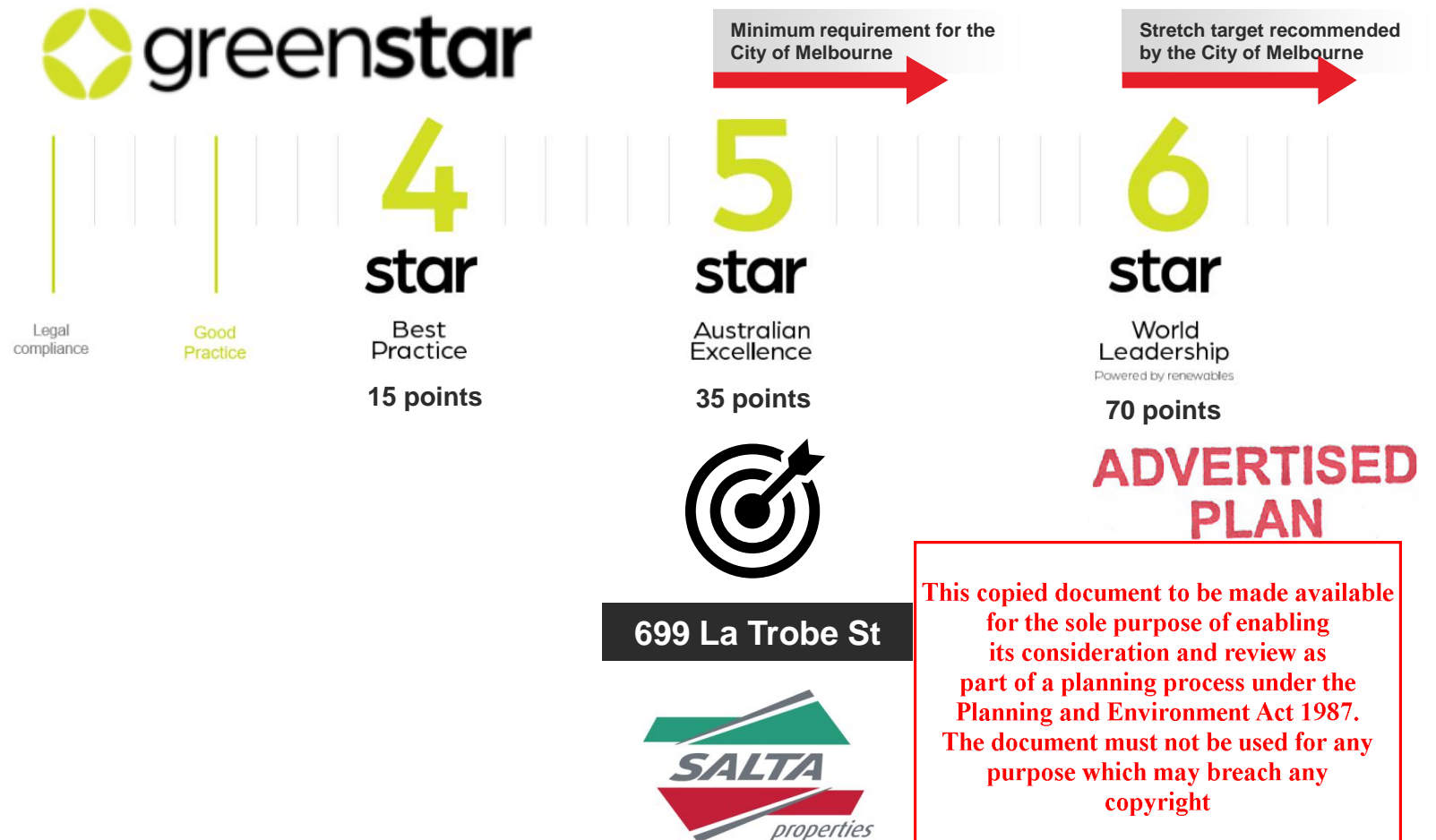
The C376 Planning amendment maintained the minimum requirement to achieve a 5 star Green Star rating but adds the requirement that it is certified by the GBCA and must be achieved within 12 months of occupation.

Green Star is Australia's national and voluntary rating system for the assessment of the sustainable design, construction and operation of buildings, fit-outs and communities.

The Green Star rating tool helps to address the range of environmentally sustainable design practices and supports a single holistic approach to sustainable building design.

Green Star Buildings v1, the most ambitious version of the tool yet. The tool is made up of a number of minimum expectations, core credits and leadership credits.

- ✓ The 699 La Trobe project is targeting a 5 star Green Star Buildings v1 rating with 48 points targeted at this stage based on the design developed to date. A formal certification is committed to which exceeds the current planning policy requirements. It is not appropriate to register the project until planning is approved.





Renewables



Discretionary

Onsite renewables are strongly encouraged where possible. Onsite renewables increase a buildings resilience against black outs or brown outs. They have the additional benefit of reducing stresses on land use for offsite generation farms that can have negative consequences for ecology and biodiversity on the site they are developed.

The requirement also recommends the exclusion of a gas connection or other non-renewable sources. The transition away from fossil fuels is critical if we are to meet climate targets.

These recommendations align well with credit 23 Energy Source found in the Green Star Buildings v1 tool for which 5 star projects must use 100% renewable energy and electricity.

- ✓ The 699 La Trobe project is committed to achieving these requirements with an all electric design, including 62 kW of on-site renewable energy across the available rooftop areas and 100% renewable energy purchase off-site. Refer Appendix A for details.

Waste + Resource Recovery



Mandatory

The project must develop an operational and waste management plan which addresses how waste is separated, stored and accessed, in order to maximise the diversion of waste from landfill.

This requirement aligns with credit 4 Responsible Resource Management which is a minimum requirement for Green Star rated buildings registered with Buildings v1.

- ✓ The 699 La Trobe project is committed to achieving these requirements. Please refer to the separate operational waste management plan by WSP.

Discretionary

It is also strongly recommended that the project diverts construction and demolition waste from landfill through responsible building practices.

As a minimum expectation in the Green Star Buildings v1 tool, all projects must divert at least 80% of construction waste from landfill. If the project achieves 90% diversion then they will be awarded 1 point. 90% is considered to be industry best practice.

- ✓ The 699 La Trobe project is committed to achieving these requirements – minimise landfill from construction waste and maximise resource recovery.

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Mandatory

The project must reduce the urban heat island effect impact by using finishes and materials that reflect heat across 75% of the site area. This aligns with the Green Star credit 19 Heat Resilience.

Cities with dense concentrations of buildings and pavement absorb and retain heat. This can result in higher demand on air conditioning, air pollution, and heat related discomfort.

- ✓ The 699 La Trobe project is committed to achieving these requirements. Please refer to Appendix F which shows the strategy marked up.

Discretionary

Passive heating and cooling strategies are strongly encouraged for the project. By using passive approaches, we reduce the need for mechanical plant that reject heat and further compound the heat island effect.

Further, it is strongly recommended to consider reflective façade finishes and cool surface technologies such as permeable paving.

- ✓ The 699 La Trobe project has featured passive design principles where appropriate including a significant external shading strategy and a high-performance building envelope that is designed beyond the NCC Section J provisions. Please refer to Appendix A for the design allowances.



Urban Ecology



Mandatory

The project must demonstrate a Green Factor score of at least 0.55. The Green Factor tool considers vegetation included on the site and building and rewards more points for native and connected planting, or large trees.

This is complementary to the Green Star credit 36 Biodiversity Enhancement although given the nuances of the Green Factor calculation, achievement of one does not necessarily mean the achievement of the other.

- ✓ The 699 La Trobe project is targeting a Green Factor score of at least 0.55. Please refer to Appendix D for a summary of the landscaping extent and the landscaping drawings as part of the submission for planning.

Discretionary

In addition to increasing ecology, it is also strongly recommended that strategies for maintenance and support of these systems are in place.

- ✓ The 699 La Trobe project is committed to this requirement and will put in place a suitable Biodiversity management plan, particular species mixes and indigenous planting. This will be developed in detailed design.

Integrated Water Management



Mandatory

The project must demonstrate that the CSIRO Best Practice Guideline Targets for Stormwater Management are in place. This relates to the treatment of pollutants and reduction of peak loads. This aligns fully with the Green Star credit 39 Waterway Protection.

Additionally, the project must use minimum 10% rainwater to meet demand. Alternatively the project may demonstrate the support of urban greening using rainwater.

- ✓ The 699 La Trobe project is committed to these requirements. Refer to the separate stormwater report for details and note that the 10% rainwater demand target is not achievable for a site of this type and size so the rainwater will be directed to support urban greening.

Discretionary

Alternative water sources for all non-potable uses are strongly recommended where technically achievable for the project. This may mean utilisation of grey water or blackwater treatment systems which could supply toilets, urinals, irrigation or cooling towers, for instance.

This is complementary to the Green Star credit 25 Water Use credit achievement and exceptional performance level.

- ✗ The project team is of the perspective that water treatment is not appropriate for a development of this type and scale so has not pursued this discretionary requirement of the emerging C376 policy.

Water Performance



Mandatory

The project must achieve the minimum requirement for the Green Star credit 25 Water Use, where the potable water demand of the building must be 10% less than that of a reference building.

- ✓ The 699 La Trobe project has allowed for water efficient fixtures and fittings as well as 40 kL capacity rainwater tanks and stormwater to exceed this requirement with a 35% reduction anticipated. Refer water strategy in Appendix B.

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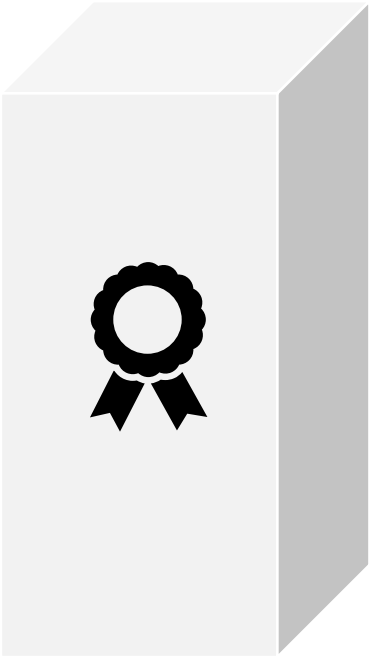


Green Star Pathway

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Strategy Overview

Driven by 5 star Green Star target

The 699 La Trobe St redevelopment is committed to achieving a 5 star Green Star rating for the building, indicating a level of ‘Australian Excellence’.

This requires a minimum of 35 credits in the Green Star Buildings v1 Submission.

This exceeds the current policy requirement for a 5 star benchmarked Green Star rating, whilst meeting the emerging C376 policy requirements and their Mandatory provisions for a certified 5 star Green Star rating.

It should be noted that the specific credits that are targeted may change throughout the course of the project as final design is detailed and construction documentation is provided, however the project is committed to the overall goal of a 5 star Green Star rating.

The Green Star pathway to achieve a 5 star rating is outlined in further detail within the following pages.

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Responsible

Recognises activities that ensure the building is designed, procured, built, and handed over in a responsible manner.



Healthy

Promotes actions and solutions that improve the physical and mental health of occupants.



Resilient

Encourages solutions that address the capacity of the building to bounce back from short-term shocks and long-term stresses



Positive

Encourages a positive contribution to key environmental issues of carbon, water, and the impact of materials.



Places

Supports the creation of safe, enjoyable, integrated, and comfortable places.



People

Encourages solutions that address the social health of the community.



Nature

Encourages active connections between people and nature and rewards creating biodiverse green spaces in cities.



Leadership

Recognises projects that set a strategic direction, build a vision for industry, or enhance the industry's capacity to innovate.



Responsible

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5/17 Green Star points
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Recognises activities that ensure the building is designed, procured, built, and handed over in a responsible manner.

The Responsible category in Green Star encourages implementation of practices that support best practice outcomes throughout the different phases of planning, design, procurement, construction, commissioning and operation of a development.

- | | | | | | |
|----------|--|-------------------------------|----------|--|------------------------------------|
| 1 | Industry Development
Arup as a Green Star Accredited Professional (GSAP) has been contractually engaged to provide advice, support and information related to Green Star principles, structure, timing and processes, at all stages of the project, leading to certification. The project will also track the cost and market the sustainability outcomes with financial information provided to the GBCA to support industry research. | Credit Achievement 1/1 | 6 | Responsible Structure
This credit is not targeted at this stage but will continue to be investigated with the project team as the design develops in case the criteria becomes more achievable as products come to market offering the appropriate specifications. | Not Targeted |
| 2 | Responsible Construction
The project team has committed to set, measure and report on its environmental performance through the implementation of a project specific EMP. The performance shall be reported on quarterly, with methods appropriate for each stakeholder group. The contractor will provide sustainability training to site workers. At least 90% of the waste generated during construction and demolition will be diverted from landfill. | Credit Achievement 1/1 | 7 | Responsible Envelope
This credit is not targeted at this stage but will continue to be investigated with the project team as the design develops in case the criteria becomes more achievable as products come to market offering the appropriate specifications. | Not Targeted |
| 3 | Verification + Handover
The project is committed to achieve various energy, water and indoor environment targets in line with Green Star certification. The project will conduct an airtightness test, be commissioned and tuned as well as deliver comprehensive operations and maintenance documentation at the time of handover. An independent commissioning agent will be engaged to monitor these processes and documentation. | Minimum req. | 8 | Responsible Systems
The project will specify building services materials, including mechanical, transportation, hydraulic, electrical, lighting and security systems materials that meet responsible procurement and sourcing requirements. This includes Best Practice PVC for cables, Declare labels for pipework and conduits, Cradle to Cradle certifications for PV panels etc. This strategy will be defined as the design develops in detail to inform material specifications. | Exceptional Performance 1/2 |
| 4 | Responsible Resource Management
The building will be appropriately designed to facilitate the separation and collection of waste and resource streams, including appropriately sized storage areas and safe and efficient access for occupants and collection contractors. This is consistent with the operational waste management plan prepared. | Minimum req. | 9 | Responsible Finishes
The project will specify internal building finishes that meet responsible sourcing and procurement requirements. Such as FSC certification for timber finishes and third party eco-labels for carpets, ceilings, partitions etc such as GECA, GreenTag and Declare with EPDs. This strategy will be defined as the design develops in detail to inform material specifications. | Exceptional Performance 2/2 |
| 5 | Responsible Procurement
This credit has not been targeted for this development at this stage. | Not Targeted | | | |



Healthy

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8/12 Green Star points

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Promotes actions and solutions that improve the physical and mental health of occupants.

We spend the majority of our time indoors so the quality of the indoor environment is crucial for our health and wellbeing and the Healthy category aims to ensure . Occupant wellbeing may also be supported by having access to nature and natural amenity such as daylight.

10

Clean Air

Minimum Req.

A higher level of fresh air (50% more) is provided to ensure levels of indoor pollutants are maintained at acceptable levels. This can also be considered with 800ppm criteria instead of 100% more outside air than the Australian Standard. Minimum separation distances between supply intake and exhaust are met and internal sources of pollutants are exhausted directly outside. This is allowed for in the design documented to date.

14

Amenity and Comfort

Credit Achievement 2/2

The project will include dedicated spaces that act as relaxation areas. The design presently features an array of internal and external spaces for dedicated amenity areas for occupants to meet this requirement. Please refer to marked up plans in appendix G.

15

Connection to Nature

Not Targeted

This credit is not targeted at this stage but will continue to be investigated with the project team as the design develops in case the criteria becomes of interest to the project. At this stage the extent of nature that must be provided to meet the criteria represents a significantly greater extent than is currently targeted.

11

Light Quality

Minimum Req.

The Minimum Requirements for artificial and daylight quality are met by the proposed design and design allowances for the development including access to daylight and high-quality lighting. A large majority of the apartments proposed also meet the Green Star points criteria for daylight comfortably as shown in Appendix E. The artificial lighting criteria is being investigated as the design develops but is not currently proposed to be met due to the commercial nature of the standards referenced.

12

Acoustic Comfort

Credit Achievement 2/2

The buildings will be designed to meet high levels of acoustic comfort, by using appropriate finishes to reduce reverberation, acoustically insulated partitions to separate spaces and reduce the intrusion of external noise with appropriate envelope. This will be detailed as the design develops and tested upon completion.

13

Exposure to Toxins

Credit Achievement 2/2

95% of paints, adhesives, sealants and carpets will be specified to meet strict VOC content and 95% of engineered wood products must meet thresholds for formaldehyde. This strategy will be defined as the design develops in detail to inform material specifications and tested upon completion.



Resilient

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2/8 Green Star points

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Encourages solutions that address the capacity of the building to bounce back from short-term shocks and long-term stresses.

The Resilient category addresses the need for developments to have defences and mechanisms in place to respond to and mitigate changes in climate, supporting infrastructure and in emergency scenarios.

16

Climate Change Resilience

Credit Achievement 1/1

The project will develop a project-specific climate change risk and adaptation plan for the building. All the high and extreme risks must be addressed with design or operational interventions. A pre-screening check has been undertaken. The detailed strategy will be defined as the design develops in detail which is appropriate given the limited findings from the pre-screening exercise.

20

Grid Resilience

Not Targeted

This credit is not targeted at this stage but will continue to be investigated with the project team as the design develops in case the criteria becomes of interest to the project.

17

Operations Resilience

Not Targeted

The operations resilience strategy is not being pursued on this development at this stage but may be reviewed as the design develops to understand the project opportunities further.

18

Community Resilience

Not Targeted

The community resilience strategy is not being pursued on this development at this stage but may be reviewed as the design develops to understand the project opportunities further.

19

Heat Resilience

Credit Achievement 1/1

Strategies will be implemented to reduce the project's contribution to the urban heat island effect by including light shade finishes, vegetation and shading. The design presently features light coloured roofs and vegetation to meet this requirement. Please refer to marked up plans in appendix F.



Positive

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14/29 Green Star points

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Encourages a positive contribution to key environmental issues of carbon, water, and the impact of materials.

Promotes actions and solutions that improve the physical and mental health of occupants.

21

Upfront Carbon Emissions

Credit Achievement 3/6

The building's upfront carbon emissions are at least 20% less than those of a reference building. This will be tested on the basis of the reference design defined by Green Star. A preliminary analysis has been undertaken and is included in Appendix C with various proposed strategies including structural design optimisation, low carbon concrete and other low carbon products including and ceiling panels using EPDs. It is recognised that this is a mandatory requirement for 5 star Green Star projects from 2023.

25

Water Use

Minimum req.

The building will use at least 10% less potable water compared to a reference building. The design presently features water efficient fixtures and fittings with rainwater harvesting using 40 kL of storage to meet this requirement. Please refer to marked up plans in appendix B. At this stage the project does not include infrastructure for recycled water connection as there are no known plans for this system in this area.

22

Energy Use

Credit Achievement 3/6

The building's energy use will be reduced through adopting at least a 7 star NatHERS average rating. This will be demonstrated by undertaking a dynamic energy simulation of the building using the new Performance Pathway for the NCC J1V5 and the addition of 62 kW of solar photo-voltaic (PV) panels on the roof. Refer Appendix A for details.

26

Life Cycle Impacts

Not Targeted

This credit is not targeted at this stage but will continue to be investigated with the project team as the design develops in case the criteria becomes more achievable.

23

Energy Source

Exceptional Performance 6/6

100% of the building's energy will come from renewable sources, either on-site, or off-site through strategies such as Power Purchase Agreements (PPAs) or Green Power. This means no on-site gas combustion will be featured on the project, even for heating or cooking with all electric systems.

24

Other Carbon Emissions

Credit Achievement 2/4

The project will seek to minimise impacts from refrigerants where possible and ultimately commits to offsetting emissions from refrigerants that remain. It is recognised that this is a mandatory requirement for 5 star Green Star projects from 2023.



Places

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5/9 Green Star points

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Supports the creation of safe, enjoyable, integrated, and comfortable places.

Promotes actions and solutions that improve the physical and mental health of occupants.

27

Movement and Place

Credit Achievement 3/3

The building's design and location prioritises walking, cycling, and transport options that reduce the need for private fossil fuel powered vehicles. The architectural strategy to meet these requirements has been implemented early in the design including 364 bike parks and 114 carparking spaces. 71 bike parks for visitors are also provided. Please refer to marked up plans in appendix G.

28

Enjoyable Places

Not Targeted

The project is committed to including communal or public places that offer a memorable, beautiful and vibrant experience for the community. However the extent of space offered at this stage does not meet the Green Star criteria so the credit is not being pursued at this stage.

29

Contribution to Place

Credit Achievement 2/2

The project will contribute to the liveability of the wider urban context and enhance the public realm. This will be verified through the completion of the FK Urban Context Report as part of the planning documentation.

30

Culture, Heritage, Identity

Not Targeted

This credit is not targeted at this stage but will continue to be investigated with the project team as the design develops in case the criteria becomes more achievable.



People

Encourages solutions that address the social health of the community.

Promotes actions and solutions that improve the physical and mental health of occupants.

31

Inclusive Construction

Credit Achievement 1/1

The contractor once appointed will provide gender inclusive facilities and PPE and will have policies on site to increase awareness and reduce instances of discrimination and bullying. The head contractor will additionally provide high quality staff support including mental and physical health support. This will be a specified requirement.

32

Indigenous Inclusion

Credit Achievement 2/2

The building's design and construction will celebrate Aboriginal and Torres Strait Islander people, culture and heritage by incorporating design features using Indigenous design and planning principles. At this stage this is a commitment and will be developed as the design is detailed in consultation with First Nations people.

33

Procurement and Workforce

Not Targeted

This credit is not targeted at this stage but will continue to be investigated with the project team as the design develops in case the criteria becomes of interest to the project.

34

Design for Inclusion

Credit Achievement 2/3

The building will be designed to be inclusive to a diverse range of people, acknowledging the different needs of people to ensure they enjoy an equal experience.

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5/9 Green Star points

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Nature

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4/14 Green Star points

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Encourages active connections between people and nature and rewards creating biodiverse green spaces in cities.

Promotes actions and solutions that improve the physical and mental health of occupants.

35

Impacts to Nature

Minimum req.

The building's site is not of significant ecological value, light pollution will be minimised and the design and construction conserves existing natural soil, hydrological flows and vegetation elements. As a building on a previously developed and now cleared site, the project will demonstrate a positive impact to biodiversity by providing additional site ecology.

36

Biodiversity Enhancement

Exceptional Performance 4/4

The development provides significant landscaped area including retaining and adding new trees which will be considered with the GBCA to meet habitat location criteria. Landscaping will also meet various species targets and include critically endangered and/or endangered plant species native to the bioregion. Please refer to plans in appendix D and the documentation from Aspect separately.

37

Nature Connectivity

Credit Achievement 2/2

The landscaping will be designed to encourage species connectivity through the site, and to adjacent sites. As the project sits within the green grid strategy (the City of Melbourne Urban Forest strategy) it will contribute to the goals of the strategy through the addition of appropriate natural systems. Please refer to marked up plans in appendix D.

38

Nature Stewardship

Not Targeted

This credit is not targeted at this stage but will continue to be investigated with the project team as the design develops in case the criteria becomes of interest to the project.

39

Waterway Protection

Credit Achievement 2/4

The building demonstrates an annual average flow reduction (ML/yr) of 40% compared to pre-development levels and meets specified pollutants targets. Please refer to the separate civil report that includes stormwater modelling that demonstrate these targets are met combined with the City of Melbourne stormwater requirements.



Leadership + Sector Specific points

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6 Green Star points

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Recognises projects that set a strategic direction, build a vision for industry, or enhance the industry's capacity to innovate.

Promotes actions and solutions that improve the physical and mental health of occupants.

40

Market Transformation

Not Targeted

Further opportunities for Leadership will be explored as the design is developed with the project team. Where opportunities for market transformation are identified these will be presented to the GBCA for consideration as Leadership strategies.

41

Leadership Challenges

Credit Achievement 1 point

The Climate Positive Pathway Leadership challenge has been met through the alignment of the design with the Green Star Climate Positive Pathway credits, gaining an additional point.

Further opportunities for Leadership will be explored as the design is developed with the project team and more Leadership Challenges are published by the Green Building Council of Australia that can be applied to this type of project.

SS

Tenant Energy Source

Exceptional Performance 5/5

The sector specific credit available for residential projects awards 5 points where at least 80% of tenants by GFA use renewable electricity. The embedded network design proposed for 699 La Trobe Street will effectively offer 100% renewable energy to all tenants as part of their rental agreement. We anticipate this will enable all 5 points to be awarded.

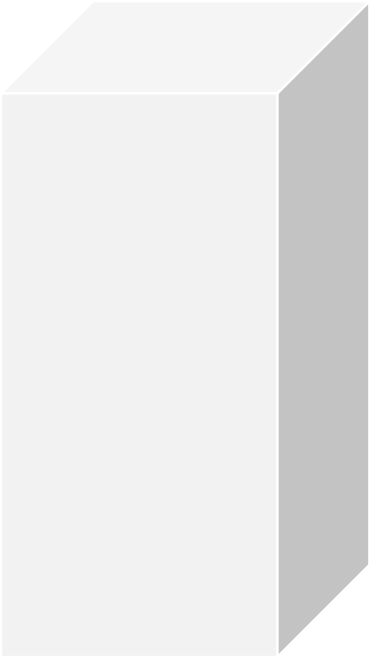


Summary

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Pathway

5 star Green Star target

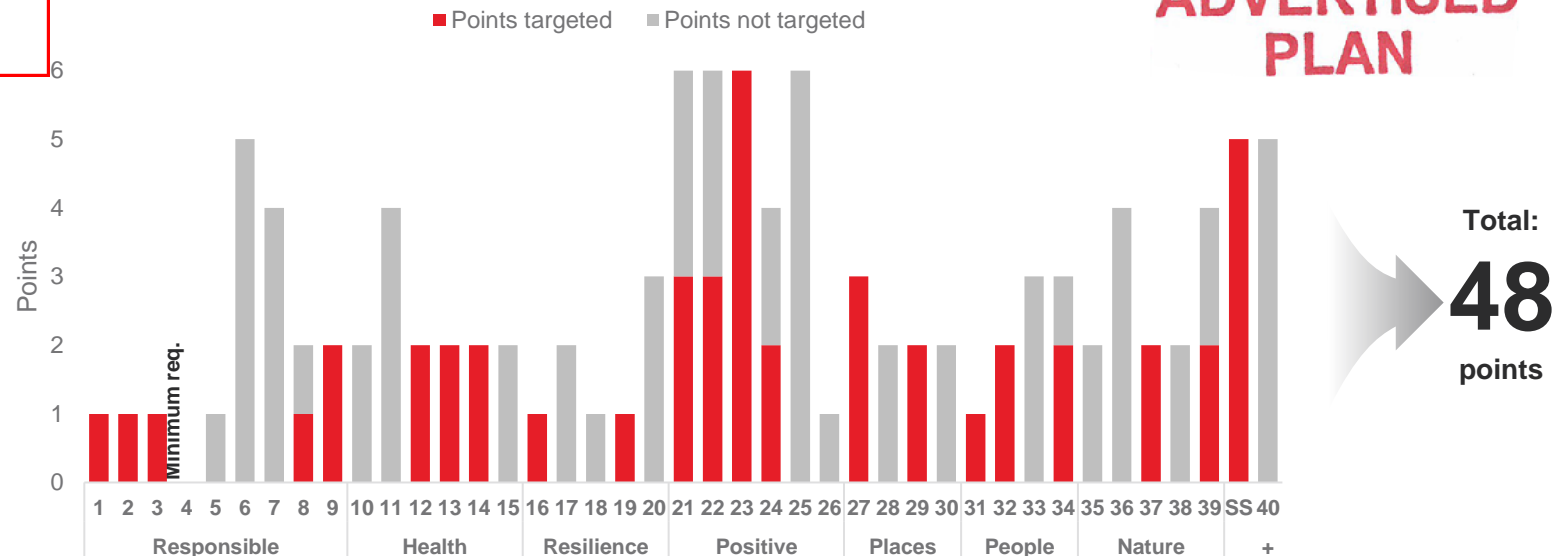
The 699 La Trobe Street development is targeting ~48 points sufficient to achieve a 5 star Green Star rating using the current version of the national Green Star rating tool. This includes an allowance for points to be lost during the detailed design and construction process.

Please refer to the following plans which support the targets within the sustainability strategy and should be referred to:

- ✓ Stormwater Report
- ✓ Operational waste management plan
- ✓ Sustainable Transport Plan

A risk assessment demonstrating the total number of points targeted is sufficient for 5 star at this stage is included on the next page in addition to how the points are achieved for each category.

Green Star Buildings v1 Pathway





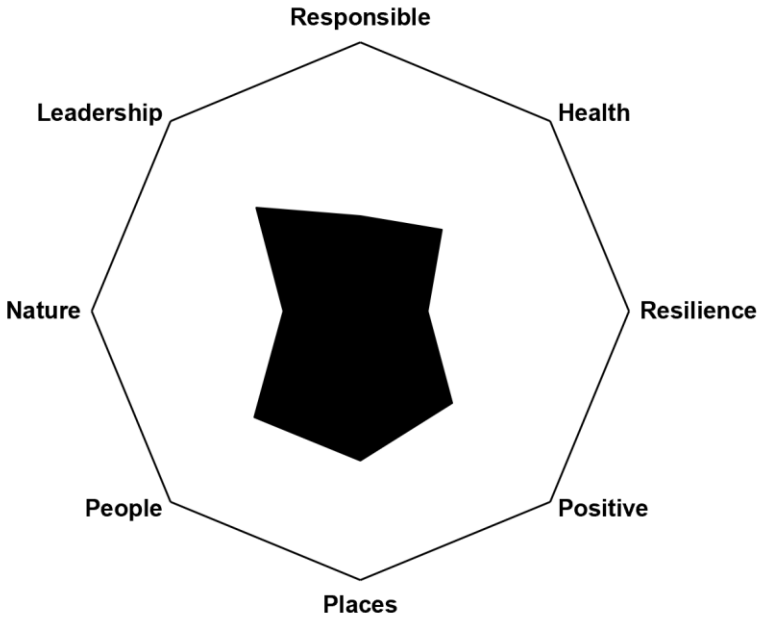
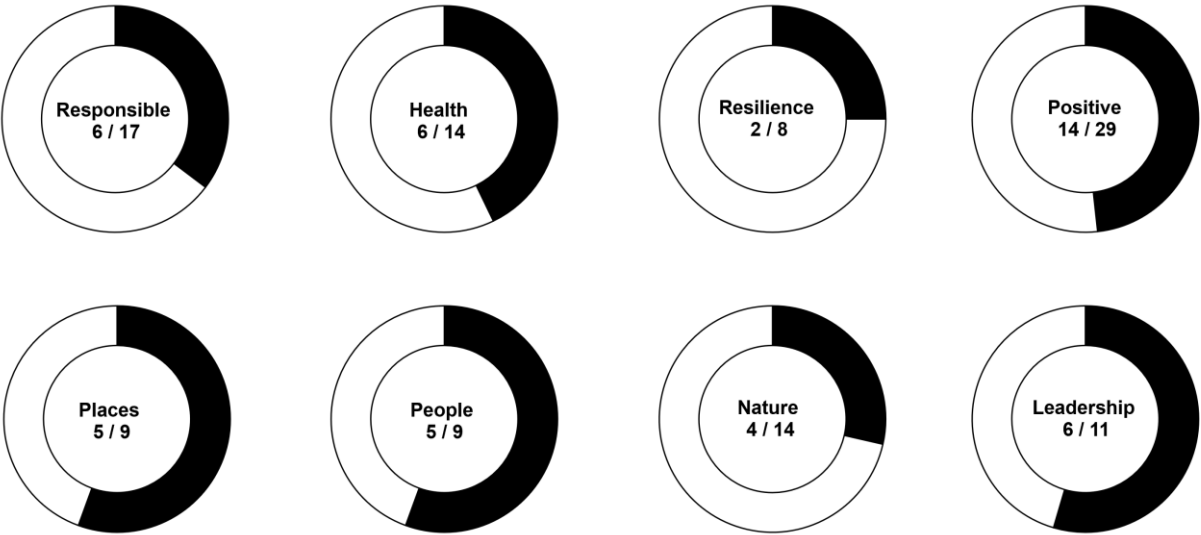
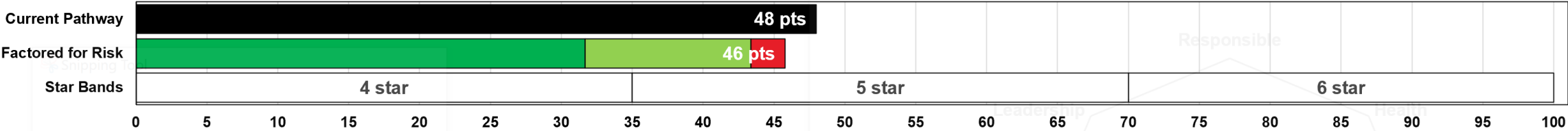
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Risk Assessment and Category Outcomes

Score + Risk Overview





Appendices

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Energy
Appendix A

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Potable Water
Appendix B

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Upfront Carbon
Appendix C

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Green Infrastructure
Appendix D

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Daylight + Views
Appendix E

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Urban Heat Island
Appendix F

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Amenity + Place
Appendix G

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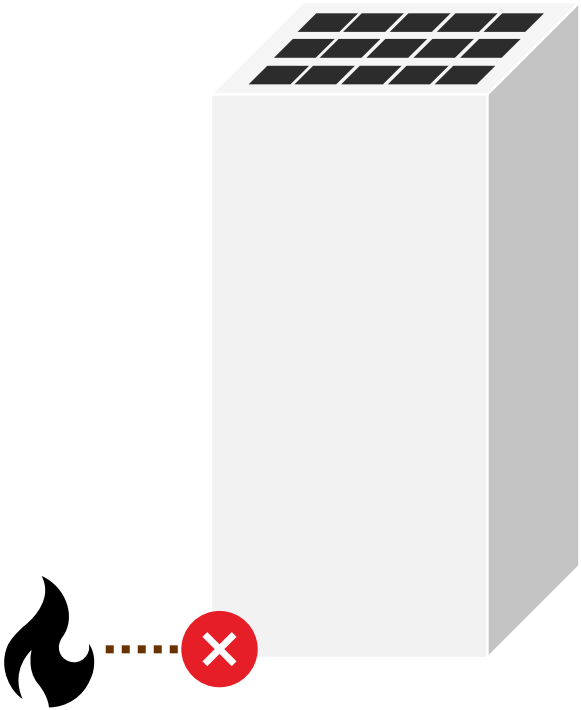
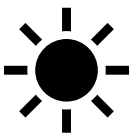
Energy

Appendix A

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Exceeding Section J Compliance

Fabric First Approach

The façade is the first opportunity for the building to achieve the targeted 7 star NatHERS rating.

Preliminary design targets to meet brief:

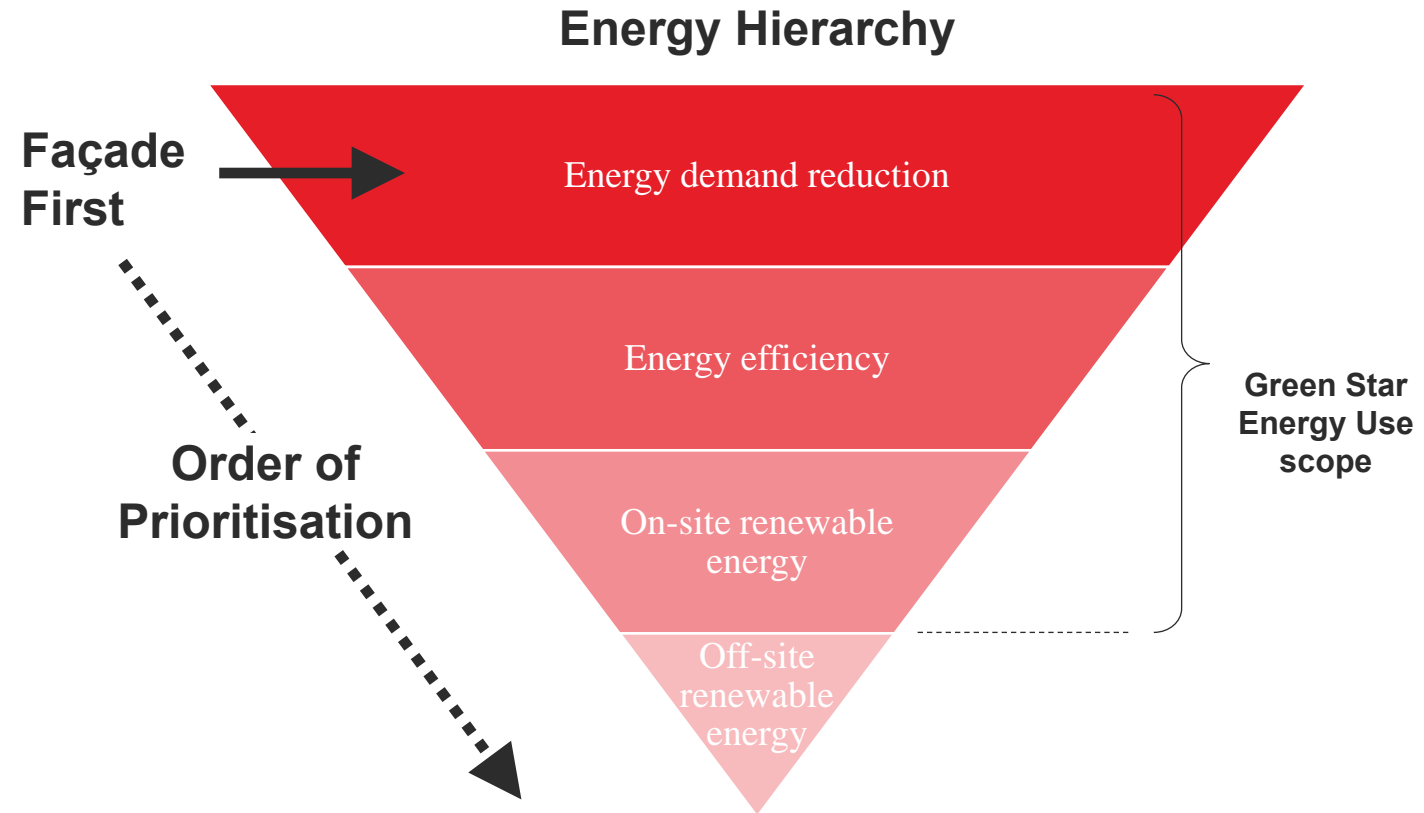
- 30% window wall ratio (to apartments) overall while also designing for maximising daylight access with considerate window placement. This is aligned to the directed preference from Salta for 1800mm wide windows in the bedroom with 200mm sill heights as well as full 3 panel wide glazing systems to the living areas where sliding doors were nominated on the early design documents.
- U2.6 W/m².K windows inc. frame
- SHGC 0.3 (VLT ~60%) with shading
- R2 and R4 m².K/W walls and roofs (inc. thermal bridges)
- 5 m³/m²/hour at 50 Pa air tightness, to be evidenced by a test.

These specifications will evolve as the design is developed to meet the 7 star NatHERS rating or equivalent target for Green Star Credit Achievement.

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Façade Design

Marked up drawings

The town planning documentation developed by FK and the project team has been used to inform the analysis.

The 2 typical floors represented inset reflect the significant majority of the development across the podium and tower levels.

All units on these levels were tested during the concept design stages to evaluate the design and inform the direction of subsequent changes. The numbers indicate the numbers presented against test results for reference.

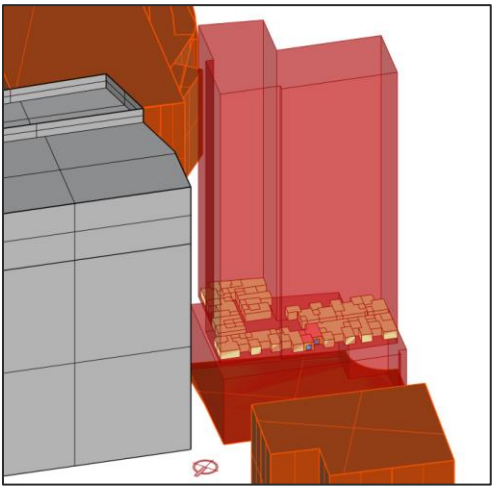
This exercise represents an ongoing design development activity that will be finalised and then submitted to the GBCA for final review.

The plans shown are not the final town planning documentation and represent an indication of the testing undertaken during the design process that have informed the principles adopted by the project.

The project team is committed to continuing this process through the detailed design phase to ensure the prescribed and committed targets are met.

Podium and tower levels

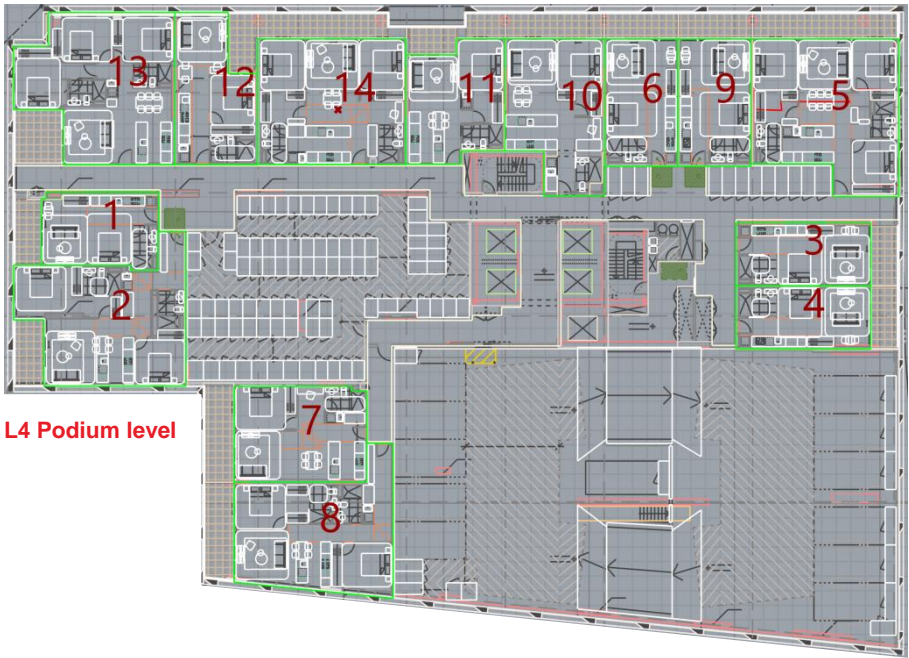
Marked up drawings showing numbers referred to in analysis



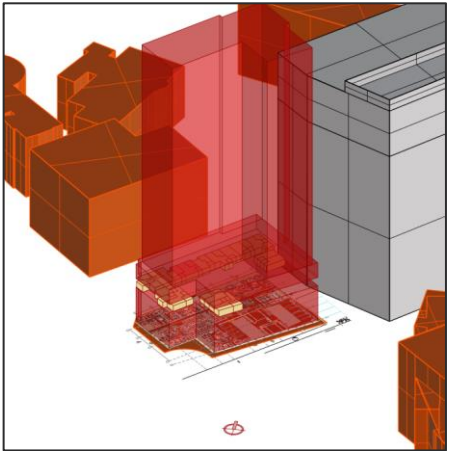
Model view (L10)



L10 tower level



L4 Podium level



Model view (L4)

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NCC 2022 J1V5

Context

The NCC 2022 Section J provisions for Class 2 residential buildings have been updated significantly and have been applied to this development as a voluntary early adopter of this new minimum standard.

The headlines associated with the NCC 2022 pertain to the raising of the NatHERS minimum star rating requirements from 6 to 7 star, however the NCC 2022 also enables a new performance pathway (J1V5) specific for residential compliance to be demonstrated which is considered equivalent to the historical sole-reliance on NatHERS.

The J1V5 requirements are outlined inset and all individual apartments must meet the requirements.

Our process has focused on the more onerous components of these calculations to date for the heating and cooling loads compared to defined limits which are equivalent to the NatHERS star rating targets previously. It is noted that the J1P2(2) limits for cooling do not apply in this climate zone but are being calculated for ADGV compliance.

As the design is developed in detail the calculations will resolve the remaining criteria with comparisons to a reference case for both the heating energy demand and total energy value.

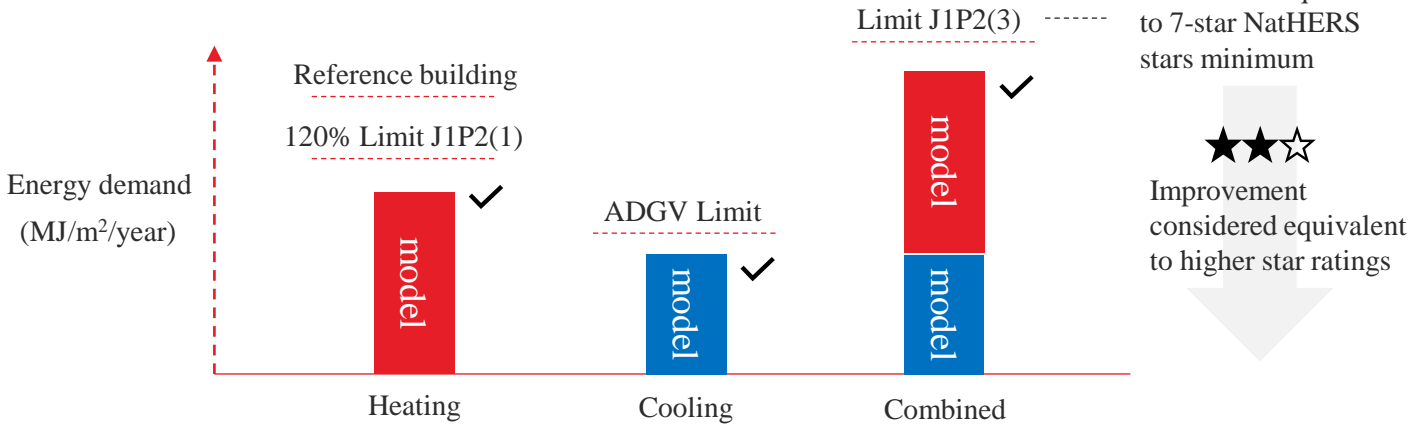
For further information refer to: <https://ncc.abcb.gov.au/editions/ncc-2022/adopted/volume-one/j-energy-efficiency/part-j1-energy-efficiency-performance-requirements>

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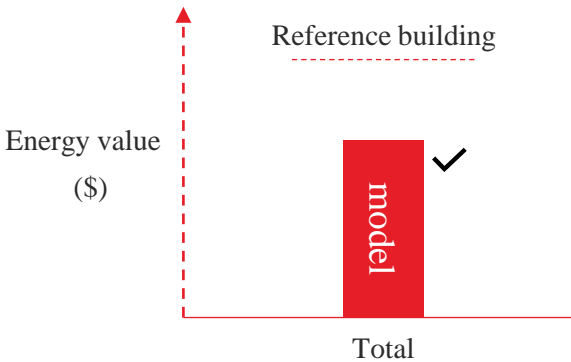
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J1P2 – Building Envelope Checks



J1P3 – Whole of House Check





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Preliminary Results

Heating and cooling load limits

On this basis the following tests have been undertaken using at least EnergyPlus v9.0.1 which complies with ANSI/ASHRAE Standard 140 as per J1V5 (3). We used v22.2.

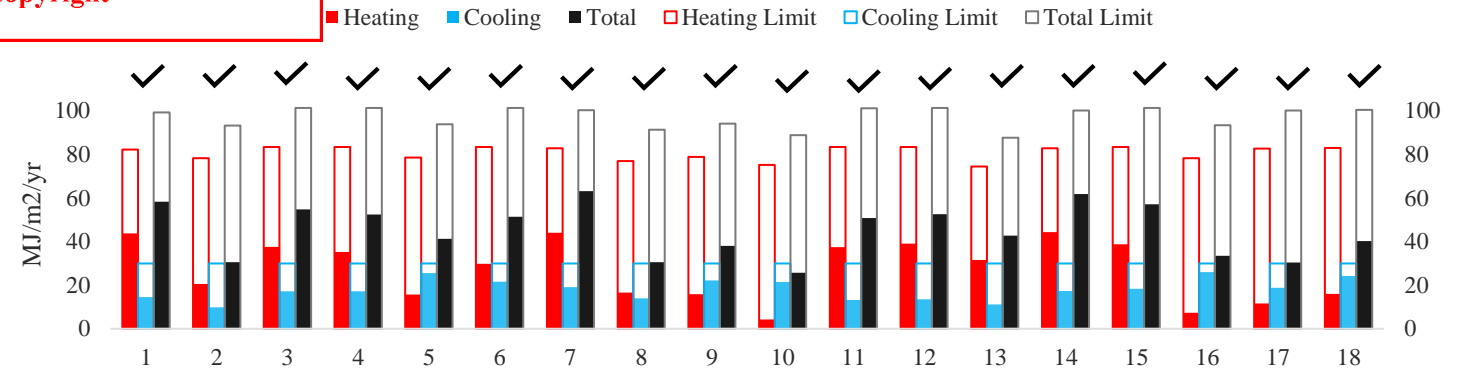
The model was developed in Rhino and Grasshopper using a calculation process that runs the calculations for each unit and compiles the results together. Variations to the design can be tested parametrically through this process for optimisation and updates which we anticipate for detailed design.

The NCC J1V5 modelling parameters and schedules have been applied including internal gains, operable windows, set-points etc and with the proposed building fabric.

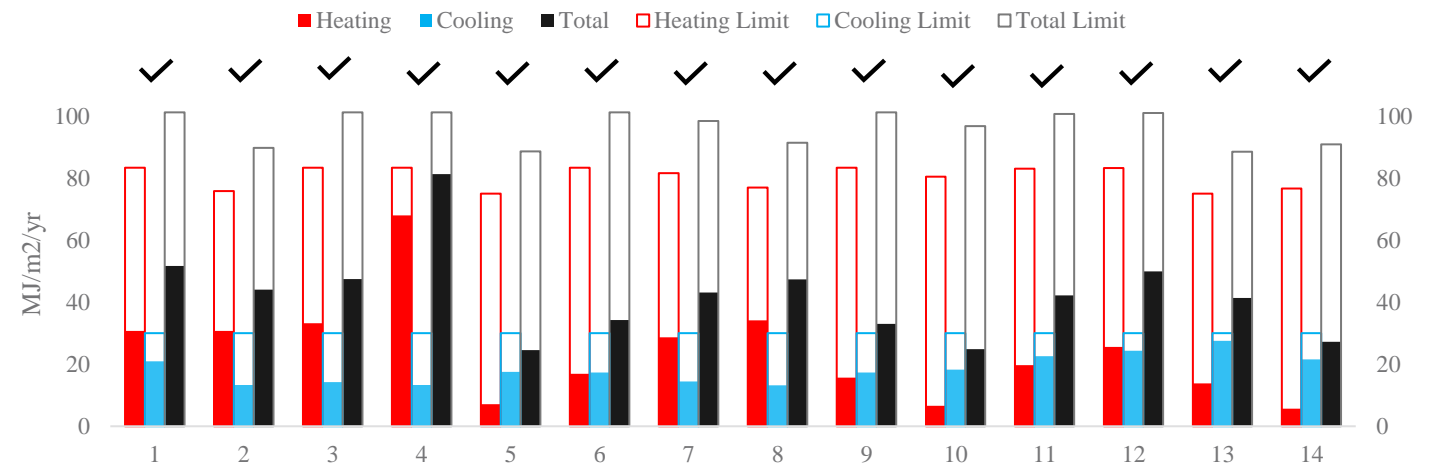
At this stage the results indicate:

- 100% of units tested meet the cooling (ADGV), heating (J1P2(1)) and total load limits defined.
- Tower (L10) Units 5 and 16 are closest to non-compliance with the cooling load limits. As is Unit 13 in the Podium. These will be closely monitored during as the design is developed.
- The average combined heating and cooling demand is consistently lower than the heating and cooling load limits, therefore meeting the performance pathway which is considered equivalent to 7 star NatHERS.

Tower (L10) Apartment Heating and Cooling Loads



Podium (L4) Apartment Heating and Cooling Loads



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High Performance All Electric Design

Energy Efficient

The HVAC, vertical transport and lighting systems must be efficient, meeting and exceeding the NCC.

The design targets to meet the Green Star Minimum Expectation and Credit Achievement criteria are:

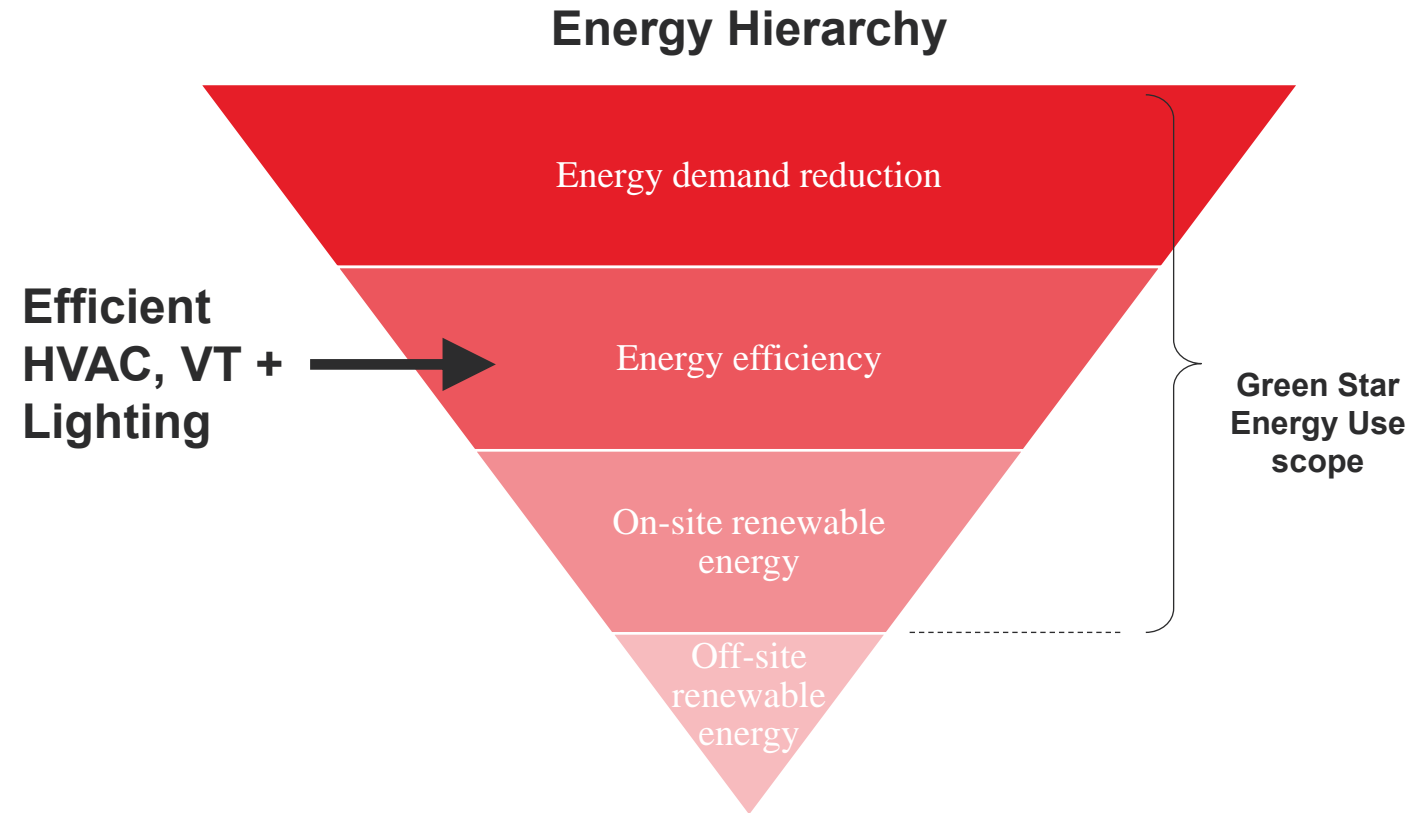
- ✓ Pool cover with a minimum R-value of $0.05 \text{ m}^2\cdot\text{K}/\text{W}$.
- ✓ Taps in the kitchen with flow rates limited to 7.5 litres per minute.
- ✓ Taps for basins with flow rates limited to 6 litres per minute.
- ✓ Showers with flow rates limited at 7.5 litres per minute with hot water pipes insulated with at least $R2.0 \text{ m}^2\cdot\text{K}/\text{W}$ outside the unit and $R0.5 \text{ m}^2\cdot\text{K}/\text{W}$ within the unit as a minimum.
- ✓ Heat source for electric heat pump for hot water with a minimum COP of 3.0 at 20°C ambient and 65°C leaving temperature.
- ✓ Efficient heating and cooling systems with SEER of least 3.5 for cooling and 3.0 for heating.
- ✓ The energy associated with lifts will feature minimum lift energy efficiency class A or B in accordance with ISO 25745-2 and the lift idle and standby energy performance level will be 1 in accordance with ISO 25745-2.

These items have been allowed for and will be specified for detailed design.

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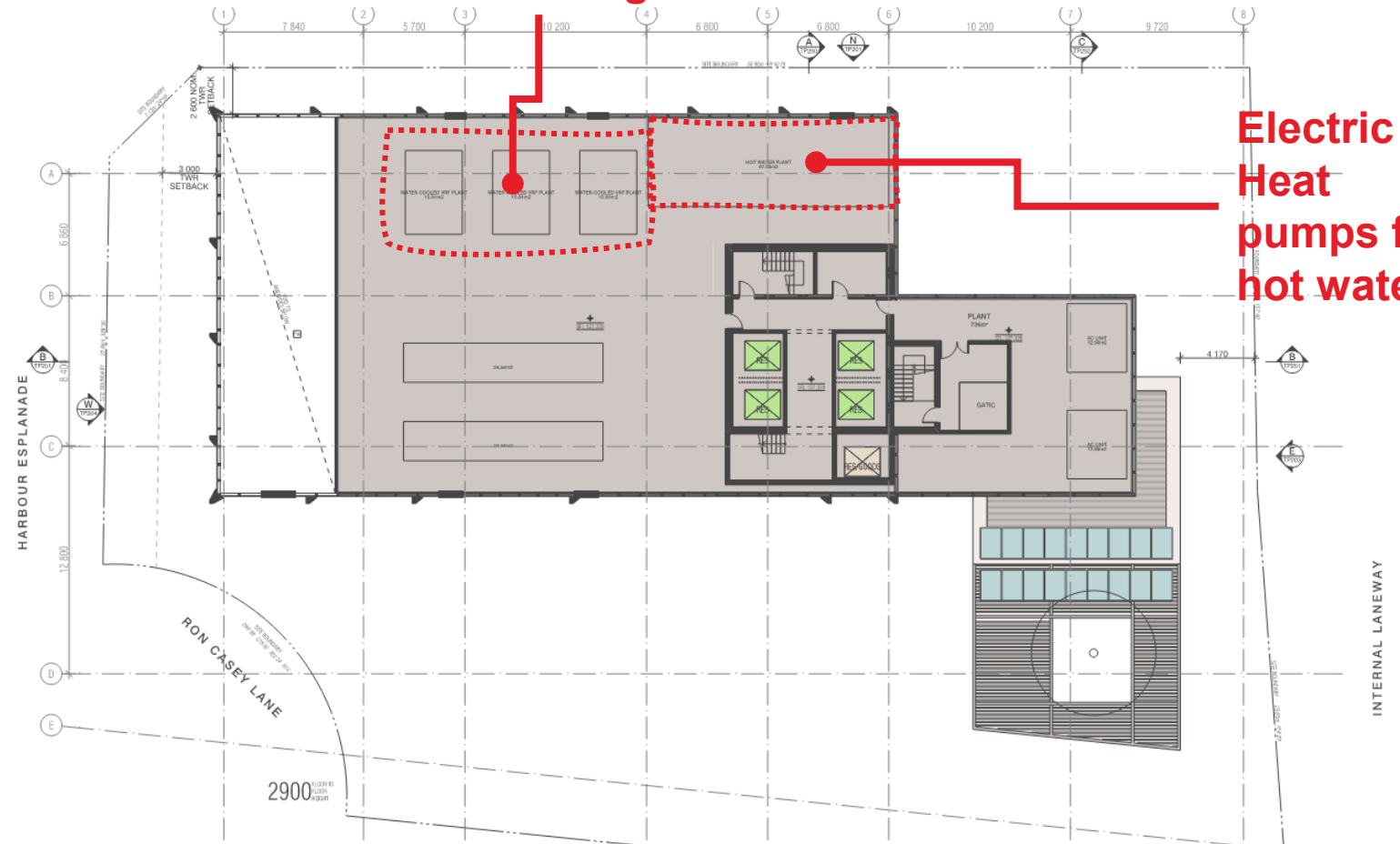
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The town planning documentation developed by FK and the project team shows that this strategy is intended to be implemented with space provision made on the roof for an all electric heating and hot water system using VRF and heat pumps respectively.

Marked up plans showing proposed heat pumps

Electric VRF for heating and cooling

Electric Heat pumps for hot water





Generating Renewable Energy

100% Renewable in Operation

The building will adopt renewable energy on-site and off-site.

At this stage the apartments are estimated to consume approximately 1,635 MWh/year – which results in an embedded network on-site generation target of 81 MWh/year at 5% of this total. Note this is the apartments only, exclusive of common areas and associated energy.

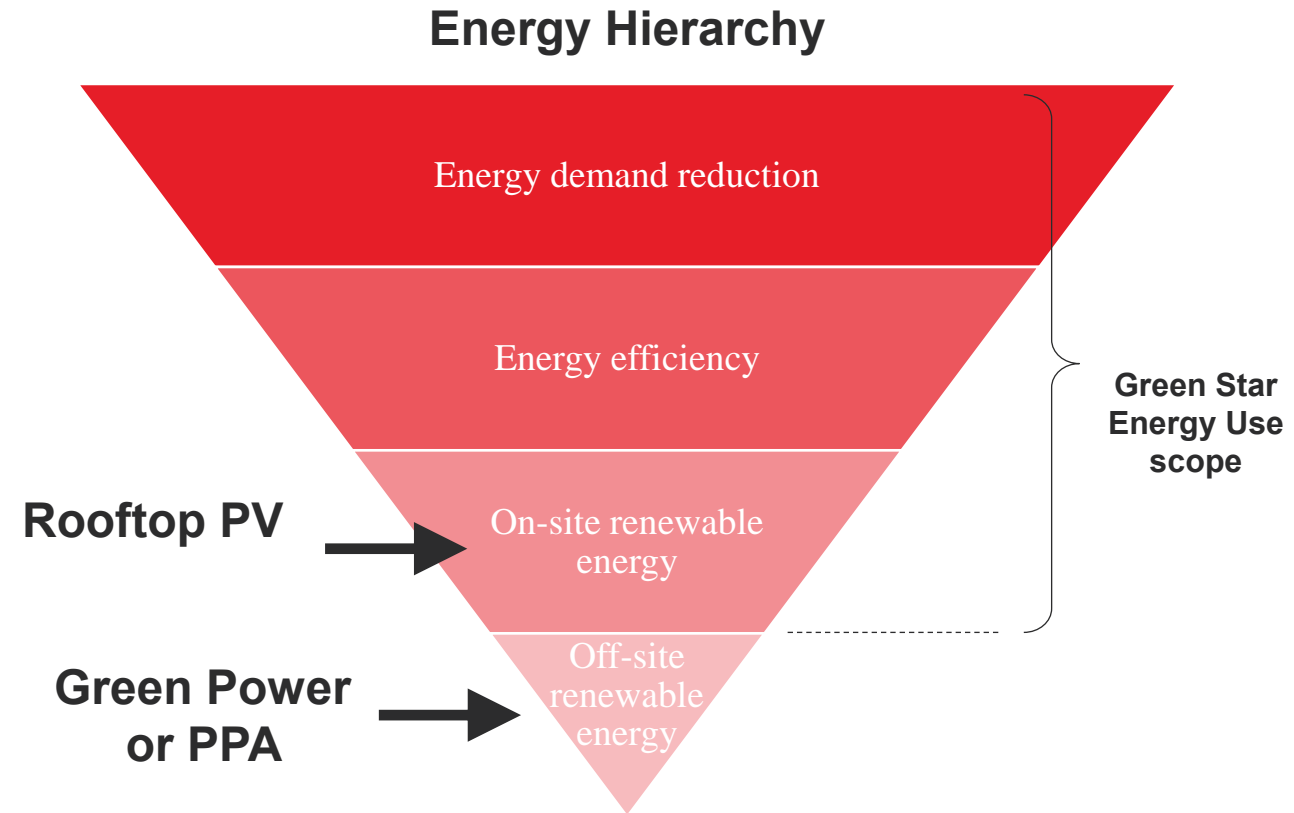
Design targets are therefore:

- 62 kW of PV on the roof
- Off-site renewable energy must be procured.
- Embedded network to be used with PV and off-site renewable energy procurement part of strategy in response to new Victorian government requirements.

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Rooftop Solar

Marked up plans

The town planning documentation developed by FK and the project team shows that this strategy is intended to be implemented with space provision made on the roof for a series of solar PV arrays.

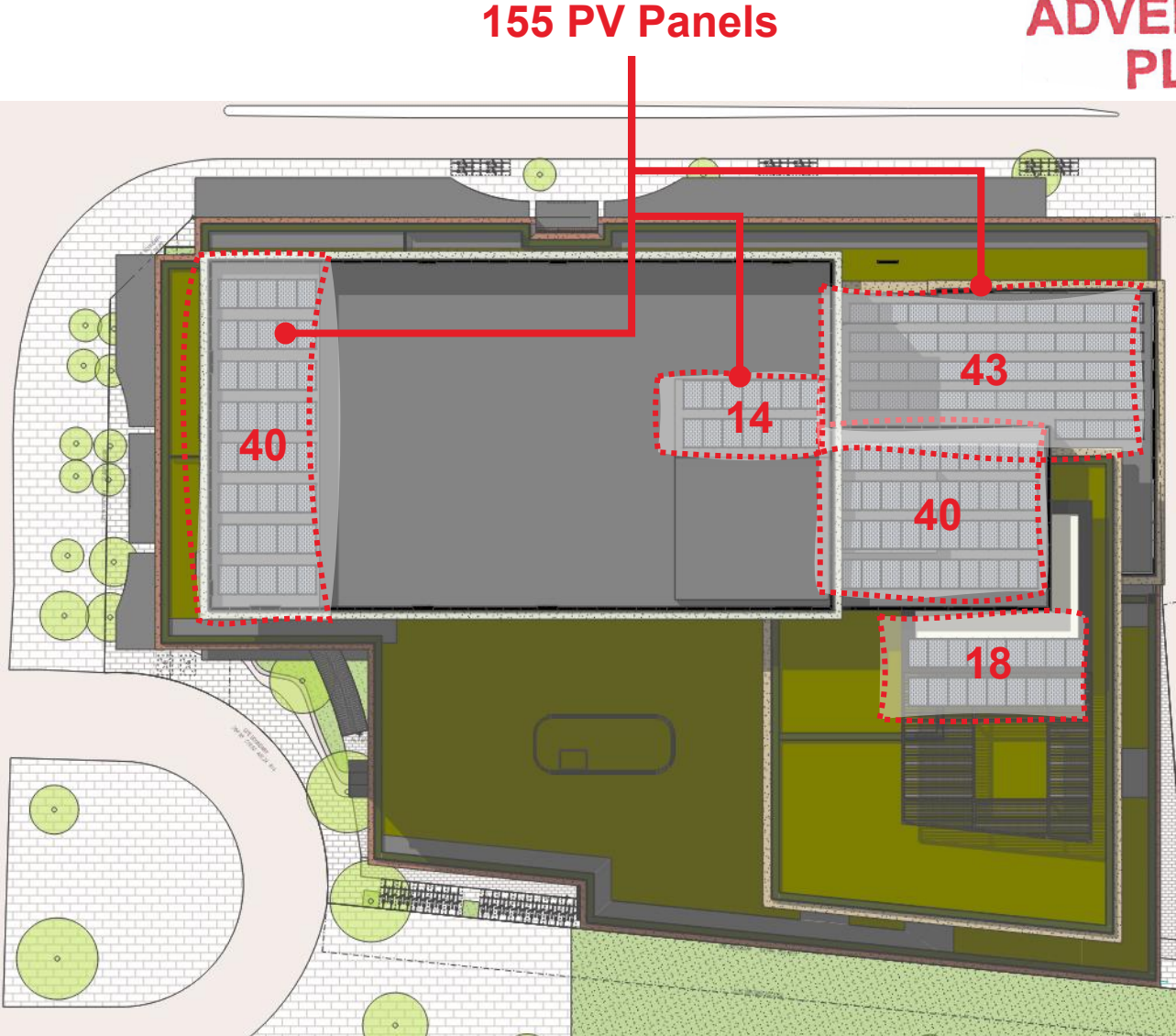
The system will be connected to the building and contribute to the reduction in energy use.

The latest PV panel technology commercially available will be implemented at the time of tender with >400 W panels currently assumed.

The building is all electric and will source the remainder of its energy from renewable sources off-site.

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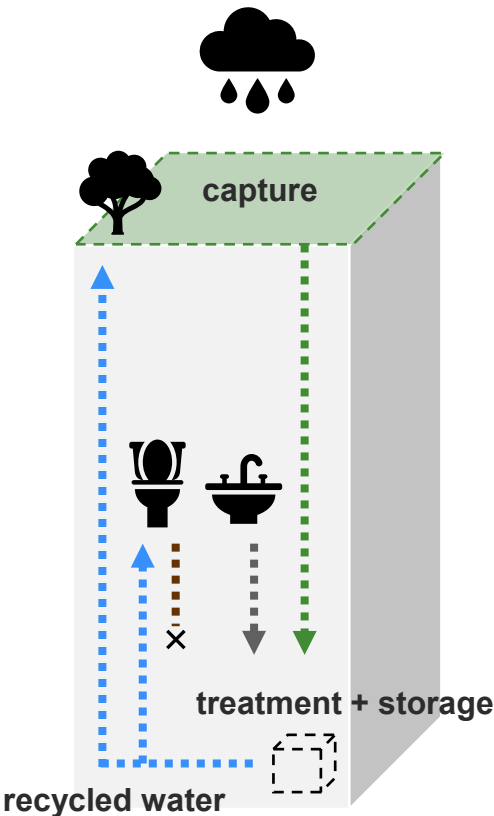
Potable Water

Appendix B

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Criteria

Green Star

The aim of credit 25 Water Use is to ensure that the building has low water use. There are three criteria for this credit:

Minimum Expectation (mandatory)

- 10% reduction in potable water compared to a reference building

Credit Achievement (3 points)

- 40% reduction in potable water compared to a reference building
- Recycled water infrastructure connection if available or planned to be available.

Exceptional Performance (+3 points)

- 75% reduction in potable water compared to a reference building.

For this building's 5 star Green star pathway established to date, the Minimum Expectation is targeted.

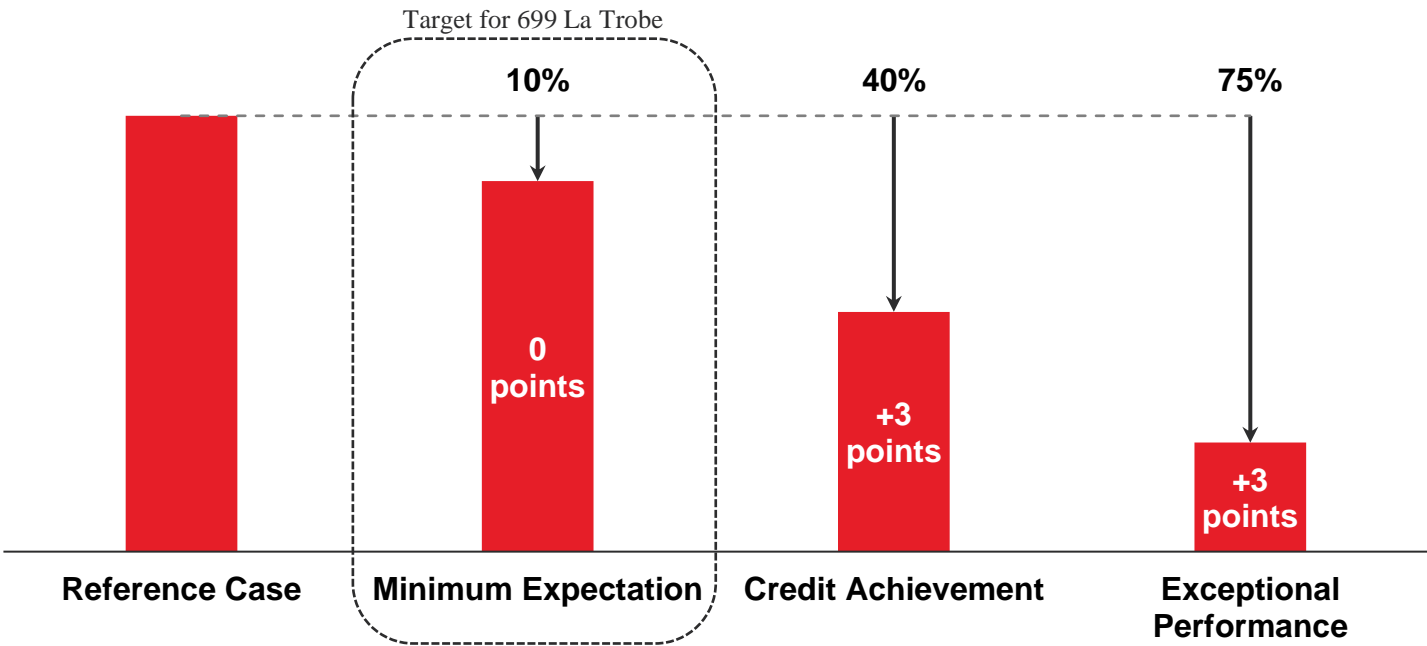
New Green Star Credit Criteria – up to 6 points available

Minimum Expectation targeted

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Green Star Potable Water Reduction Targets



Recycled Water Infrastructure

The building must have infrastructure for recycled water in a district or location where local council or water authorities have planned for installation of recycled water infrastructure



Assumptions

Calculations

At this stage the calculations are preliminary and are based on a series of assumptions to inform the analysis and determine a suitable combination of water efficiency and water reuse to meet the target.

The building type is defined as residential and these assumptions are expected to be refined as the design develops.

This assessment has been undertaken with the Green Star Design and As-built Potable Water calculator with the understanding that this same method will be adopted for the Green Star Buildings rating. At this stage, there is no Green Star Buildings Water calculator that is available from the Green Building Council of Australia.

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Occupancy

Residents	1270
Apartment Net Area	36,632 m ²
Amenity Area	2,494 m ²

Washdown

Hose flowrate	12 L/min
Number of hoses	2
Average daily use	30 mins

Landscape Irrigation

Landscaped area	~1,060 m ²
% of zone undercover	15%
Crop coefficient	0.4 (low water req.)
Irrigation	Subsurface drip irrigation (90% efficiency)

Fire systems

% of water captured per test	80%
Testing frequency	annually
Volume discharged per test	1,000 L

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Fixtures + fittings (WELS ratings)

Taps	6 star (<4.5 L/min)
Toilets	4 star (<3.5 L/flush avg)
Showers	3 star (<7.5 L/min)
Washing Machines	5 star (<7.2 L/kg), 3 cycles/wk/unit
Dishwashers	4 star (<1.4 L/cycle)

Rainwater collection

Rainwater collection area (m ²)	1,300 m ²
Rainwater tank size	40 kL
Roof	Flat without gravel
End uses connected to	Toilets, urinals, irrigation
Point potential evaporation data	Melbourne (BOM)
Connected to	~25% of toilets and irrigation

Pool

Surface Area	130m ²
Depth	1.2m
Exhaust air	15L/s/m ² as per AS1668.2
Pool hall temperature	28
Water top-up	109,944L X 5 times/year



Results

Key statistics

The water consumption for the whole development has been estimated on the basis of the assumptions and operation anticipated for the building, based on estimated occupancy.

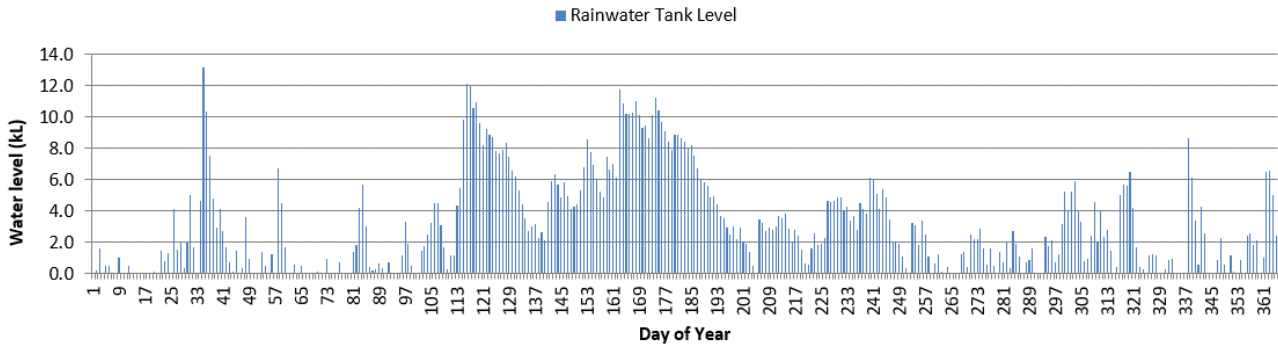
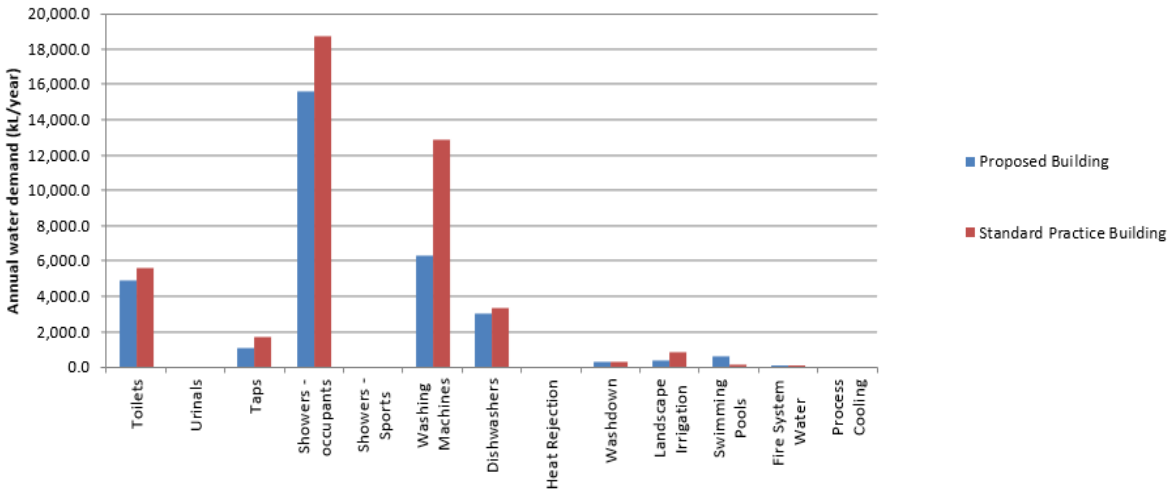
The showers represent the largest water demand, followed by washing machines, toilets and then dishwashers.

The rainwater system capacity is shown to be emptied regularly with the tank struggling to maintain a water level greater than ~13 kL throughout the year, demonstrating there is no benefit in an increased rainwater tank size for the purposes of Green Star or increasing the number of connections for the water recycling system.

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Total potable water demand:
~31,826 kL/year

Reduction in potable water
~27%



Marked up Plans

The town planning documentation developed by FK and the project team shows that this strategy is intended to be implemented with space provision made in the basement for rainwater storage.

The rainwater will be collected from the rooftops for reuse in the toilets within the amenity areas and for irrigation.

This strategy is effective in minimising treatment of water whilst maximising the extent of reuse from the limited amount of rainwater available.

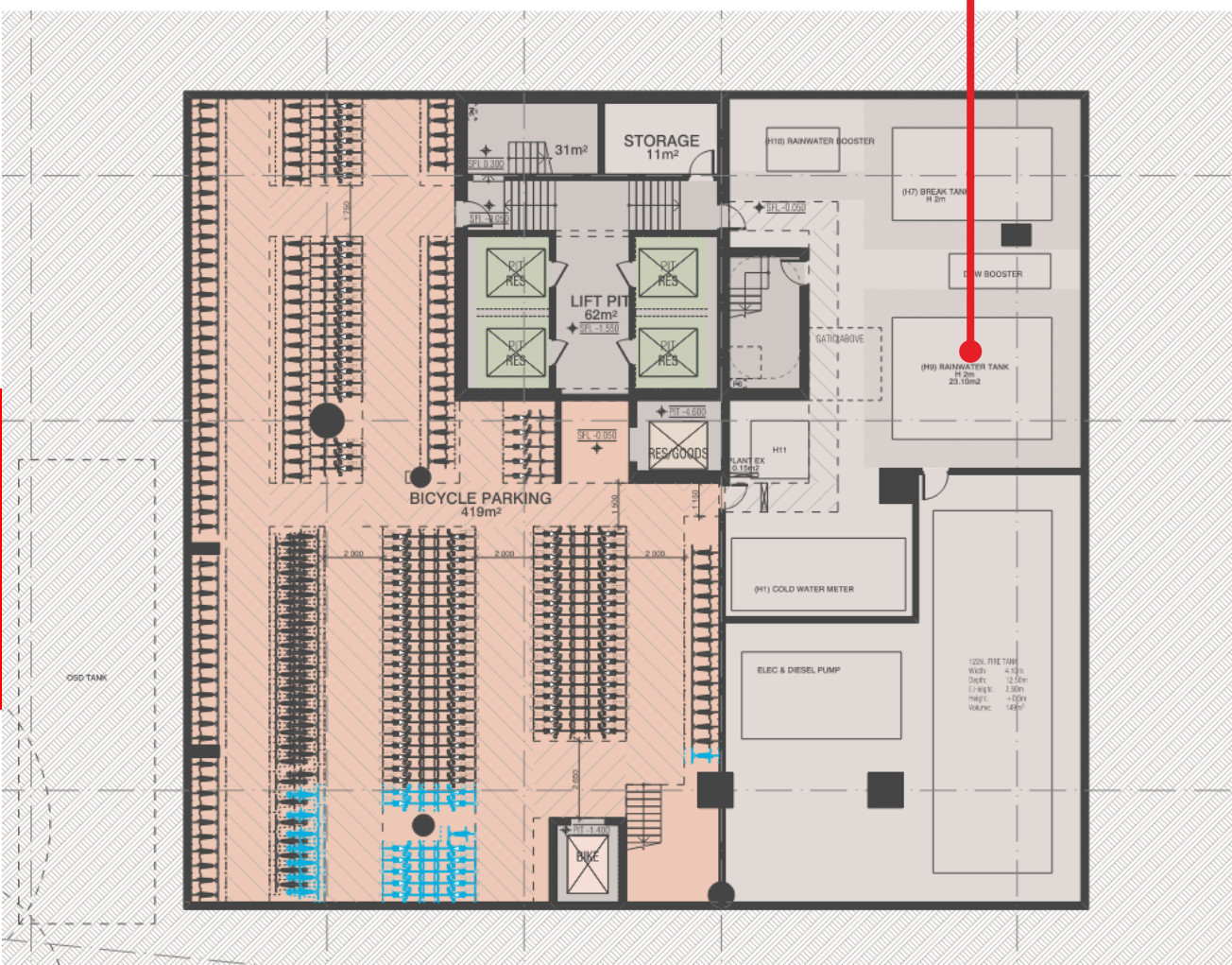
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Basement 1 Level

Marked up showing rainwater storage

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Rainwater storage





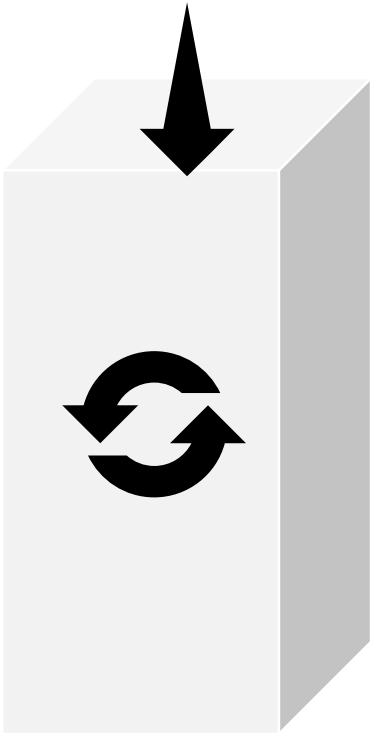
Upfront Carbon

Appendix C

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Upfront Carbon Reduction

Reduced Upfront Impact

A preliminary reference design will be established on the basis of the town planning documentation and will be optimised to show a 20% reduction in upfront carbon by the completion of the project.

The following materials are anticipated to be specified and procured with emerging best practice 3rd party certifications.

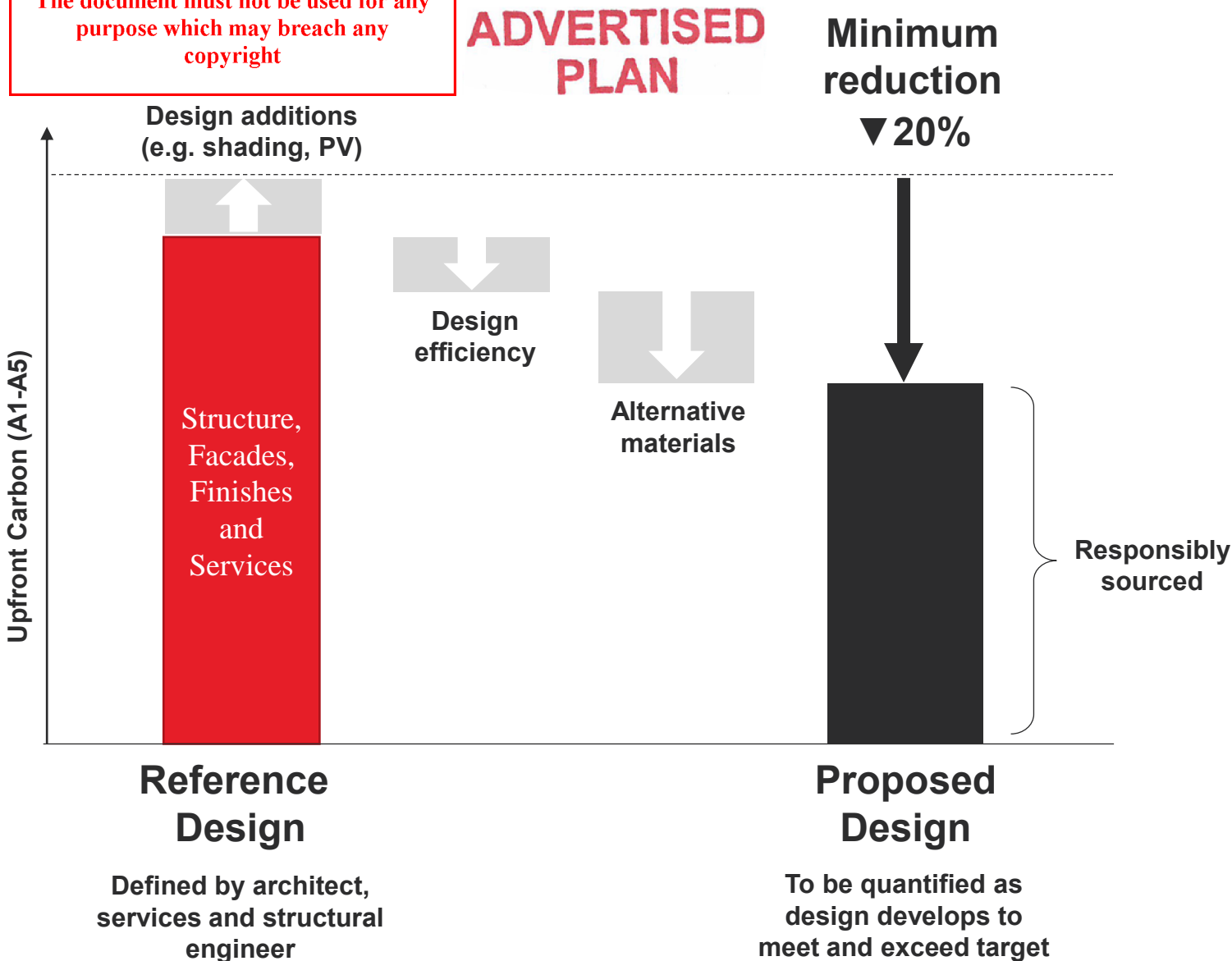
The strategy is anticipated to achieve at least a 20% reduction and will explore in detailed design the following initiatives:

- Structural optimisation with refinement of extents and sizes of columns, slabs, reinforcing rates etc.
- Materiality of shade systems and façade elements.
- Low carbon materials with preference to be given to materials with high extents of recycled materials.
- Carbon neutral certified products including carpets and ceiling panels.
- Low carbon and minimal refrigerant use.

At this stage the project is committed to this target which is effectively required for all 5 star Green Star developments which register from 2023.

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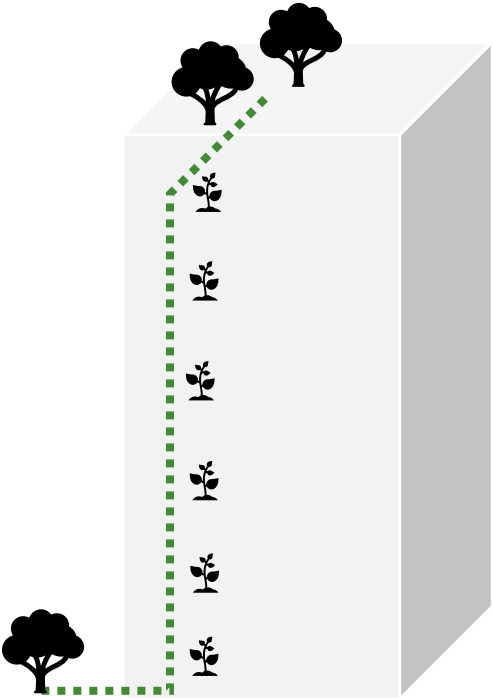
Green Infrastructure

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Connected green
spaces + large trees



Green Infrastructure

Plans

The town planning documentation developed by FK, Oculus and the project team shows that a green infrastructure strategy is intended to be implemented with space provision made within the external terraces and the ground floor.

The design will continue to be developed but the extent is anticipated to be sufficient to meet the Green Factor with a score of greater than 0.55 anticipated subject to final species selections, soil depths etc.

The extent is also anticipated to meet the Green Star requirements at this stage.

Key features:

- Numerous trees retained on the ground level
- The ground floor planting is accessible to the public.
- A large extent of planting is effectively visible as can be seen from areas on the inside and outside as at the perimeter of the building
- Various green cover maintenance and support strategies will also be developed by the project as the design is detailed including ecologist support and irrigation etc.

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Ground Floor



Level 7



Level 40



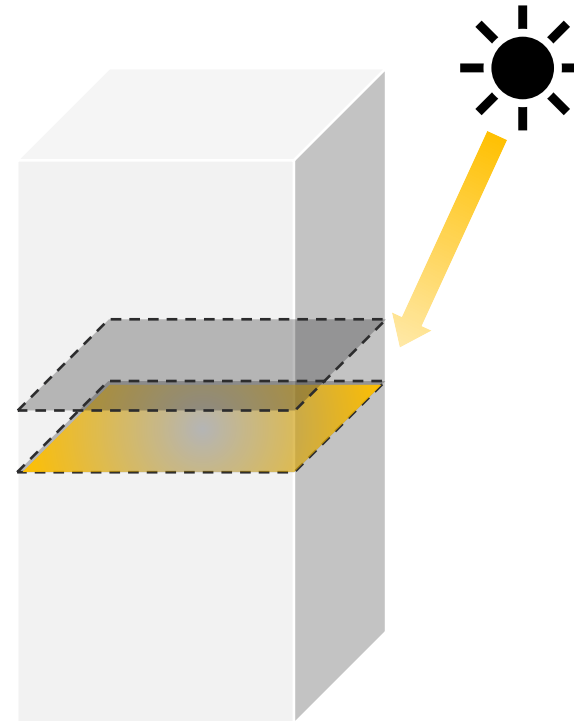
Daylight + Views

Appendix E

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Daylight

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Preliminary Analysis

We have undertaken preliminary daylight analysis to inform the design of the project with the example shown inset a work in progress floor plan from the architects which we analysed to provide design feedback.

The focus for Green Star is on spaces that are continually occupied for more than 2 hours which in this context is specifically the bedrooms and living areas with studies excluded with the intent that the design anticipates these areas to be feature limited use with the dedicated co-working space downstairs for longer work.

The inset image highlights how the daylight penetration effectively aligns with the significant majority of the living and bedroom spaces which are focused on the perimeter.

It is noted that this layout is not aligned with the final drawings for town planning but was used to inform the design process and is being shared to demonstrate the work undertaken to inform the daylight strategy only.

It was found that the Credit Achievement for Green Star is unlikely to be achieved for this development due to the adjacency of existing buildings and the onerous nature of the criteria.

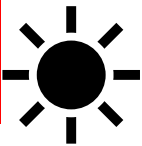




Urban Heat Island

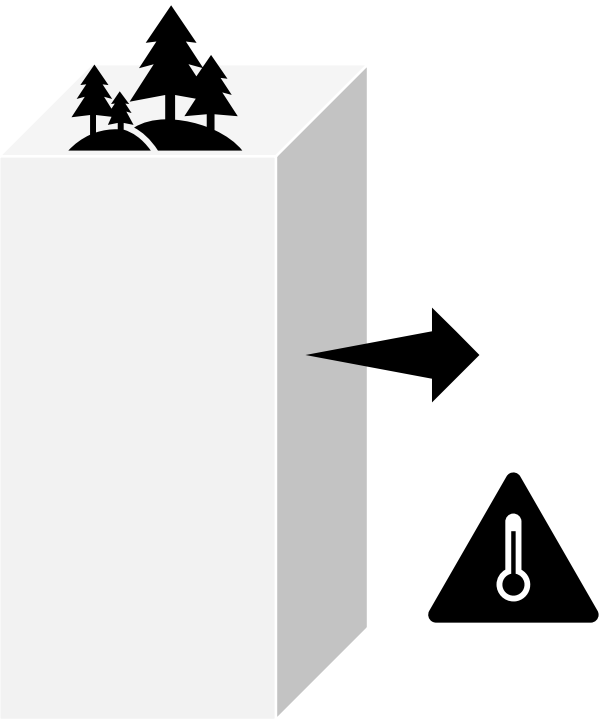
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Urban Heat Island

75% site coverage with vegetation and light finishes

Cities, being made up vastly of masses of steel and concrete, absorb heat throughout the day. This can lead to what is known as the heat island effect, which can significantly increase the temperature of an urban environment, effecting the performance of buildings, the comfort of users of the city and effect any vegetation or urban wildlife.

To mitigate the effects of heat island, the project will use light coloured and reflective finishes for hardscaped surfaces across the roof as well as vegetation to the lower roof areas to meet and exceed the 75% requirement.

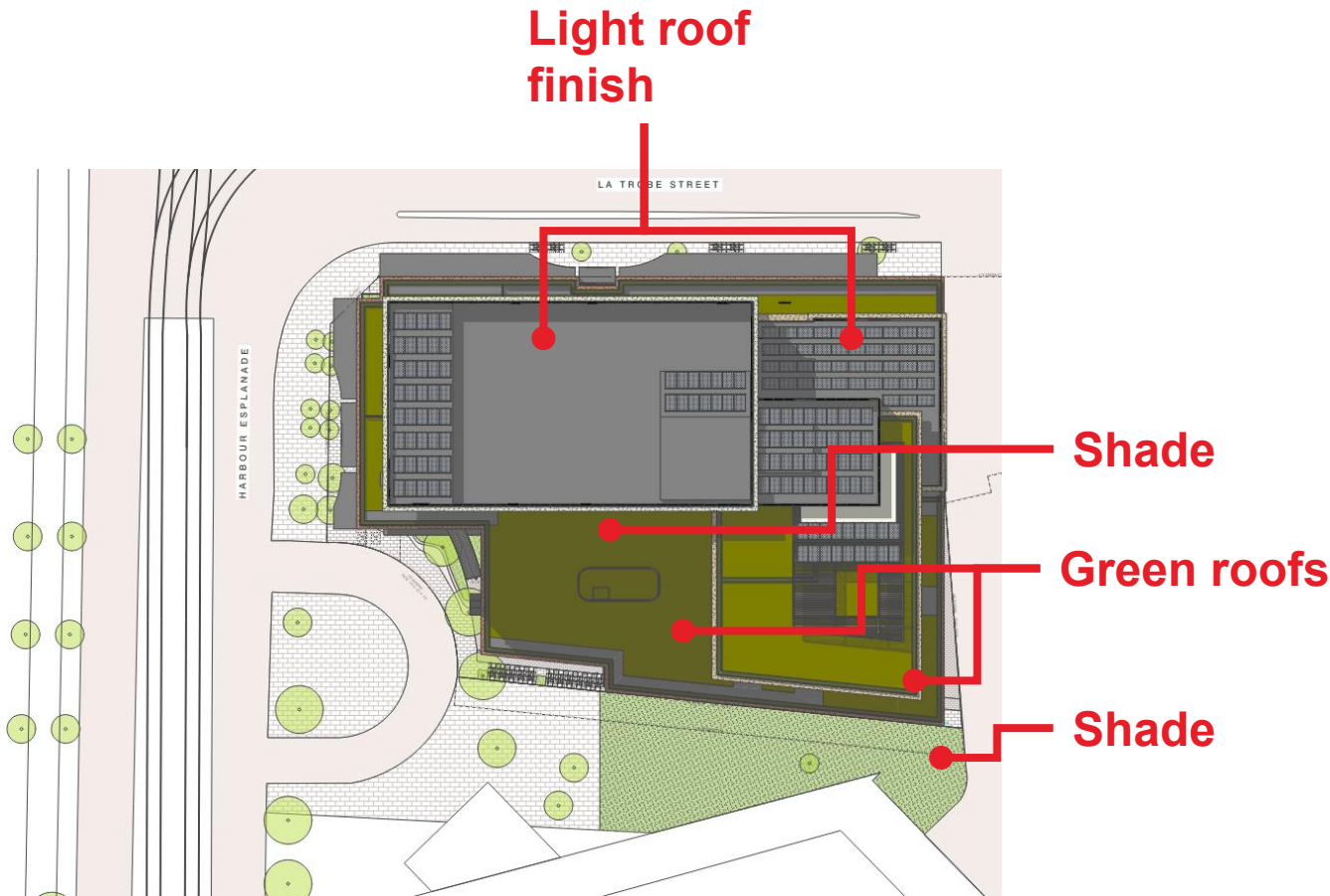
A Colourbond Surfmist coloured roof is anticipated on the metal deck roof with light grey coloured concrete where exposed to meet the Green Star criteria.

It is understood PV panel areas are excluded from this assessment whilst shade cast from the tower can also be incorporated in the analysis. This exercise will be finalised as the design is developed and then submitted to the GBCA as part of the Green Star submission.

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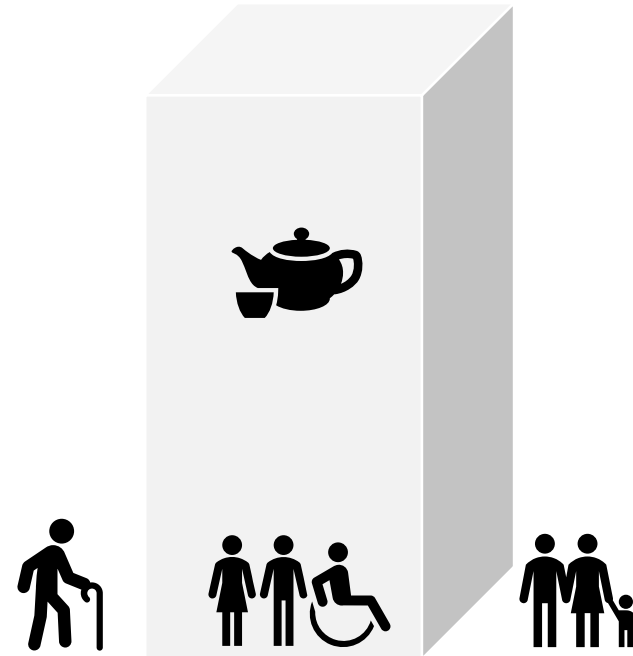
Amenity + Place

Appendix G

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Amenity

Marked up plans

An amenity area of at least 1m² per 10 occupants is also rewarded in Green Star for residents within the building with daylight and universal access which amounts to 127m². This is based on an assumed occupancy of 1 per studio, 2 per 1 bed, 3 per 2 bed and 4 per 3 bed.

There is significant internal amenity provided as marked up inset amounting to ~ 2,494m² exceeding the criteria comfortably this includes business lounge, lounge, bike workshop, co-working, gym, indoor garden, pool, spa, sauna, bar, music room and private dining areas.

This will be refined and evidenced as the design is developed.

Examples of amenities

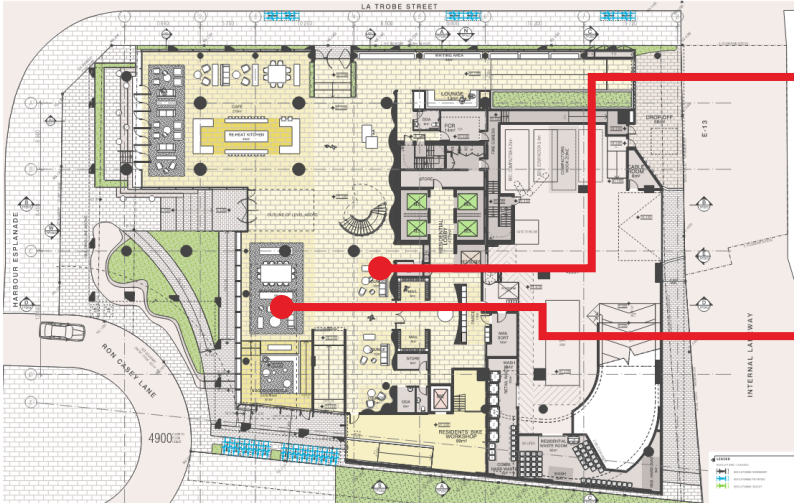
Shown on ground floor and in podium

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RESIDENTIAL AMENITIES - INTERNAL	
	AREA
GROUND FLOOR	
LOUNGE	55
RESIDENTS' BIKE _WORKSHOP	99
WAITING AREA	24
	178 m ²
LEVEL 1 CO-WORKING	
CO-WORKING	483
	483 m ²
LEVEL 7 AMENITIES	
CENTRAL CHANGE	49
GROUP FIT	132
GYM	60
GYM CARDIO	124
INDOOR _GARDEN	54
PLUNGE RINSE	34
POOL DECK	313
POOL LOUNGE	133
SPA & SAUNA	49
WEIGHTS	102
	1 050 m ²
LEVEL 37 AMENITIES	
BAR	110
CORRIDOR	75
DAY-NIGHT	136
GARDEN LOUNGE	78
LOBBY	21
LOUNGE	24
MUSIC ROOM	61
PET OWNERS _LOUNGE	14
PRIVATE DINING ROOM 1	46
PRIVATE DINING ROOM 2	54
WINTER GARDEN/_CONSERVAT...	163
	783 m ²
	2 494 m ²

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Lounge

Business lounge



Co-working



Site Transport

The provision of carparking, bike parking and electric vehicle chargers must enable a 40% reduction in greenhouse gas emissions, 90% increase in active mode transport and 20% reduction in vehicle kilometres travelled.

On the basis of the proposed extent of bike parks, showers, carparks etc the following sustainable transport outcomes are forecast:

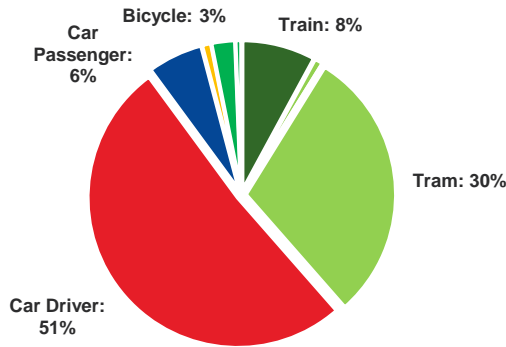
- ✓ 41% reduction in greenhouse gas emissions
- ✓ 803% increase in active mode transport
- ✓ 91% reduction in vehicle kilometres travelled

Assumptions:

- 1270 regular occupants (residents)

This has been aligned with the provisions in the design and will ultimately be supported by a transport report for Green Star certification purposes.

Current Transport Profile for Docklands



Proposed parking



364 bike parks

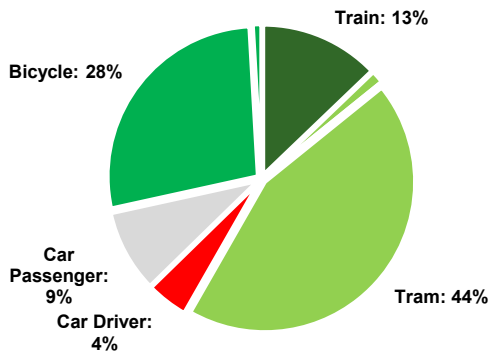


71 visitor bike parks



114 carparks

Proposed Transport Profile for 699 La Trobe



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Sustainable Transport

Marked Up Plans

The town planning documentation developed by FK and the project team shows that this strategy is intended to be implemented with space provision made in the basement for secure bike parking for residents as well as some of the visitor bike parking.

Provision for bikes of different types and sizes has been made with provision for tools and access via a lift.

The balance of the visitor bike parking is provided on the ground floor in the public realm.

BICYCLE PARKING NUMBERS		
LEVEL	PARKING TYPE	QTY
BASEMENT		
	LOWER DECK	118
	ON-GRADE	5
	UPPER DECK	118
	VERT. STAGGERED	47
	VERTICAL	113
		401
GROUND FLOOR		
	ON-GRADE	34
		34
		435

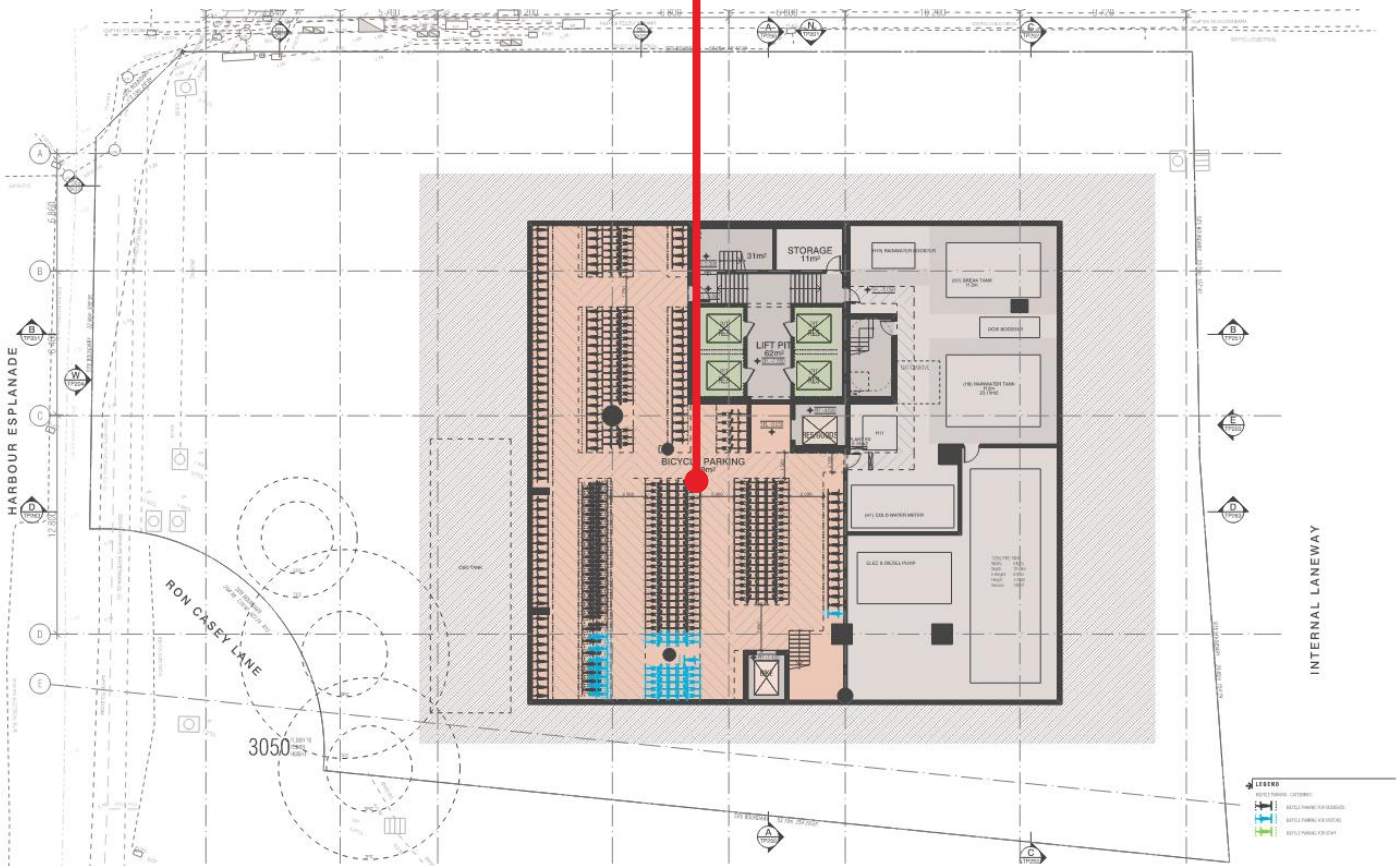
Basement 1 Level

Marked up showing bike parking

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bike parks



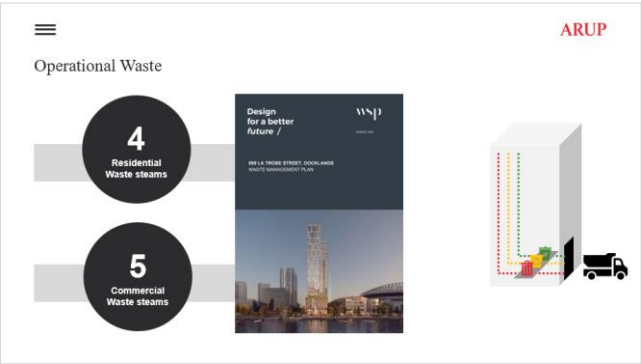


Supporting Reports

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Operational Waste

4

Residential
Waste steams

5

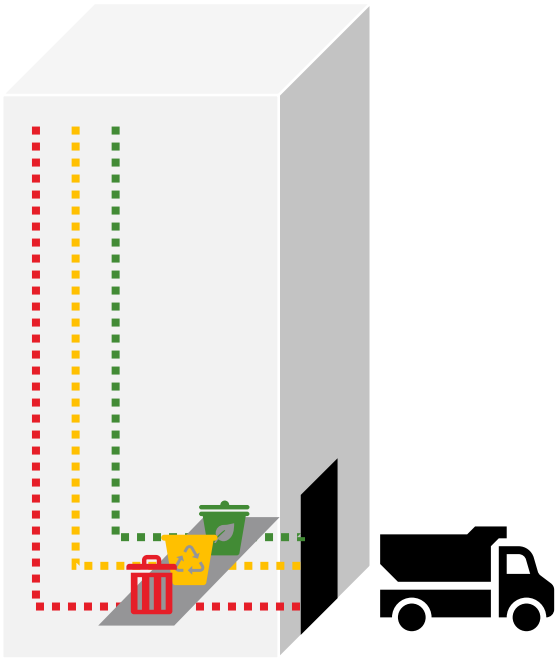
Commercial
Waste steams



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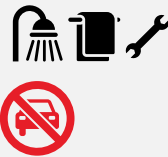
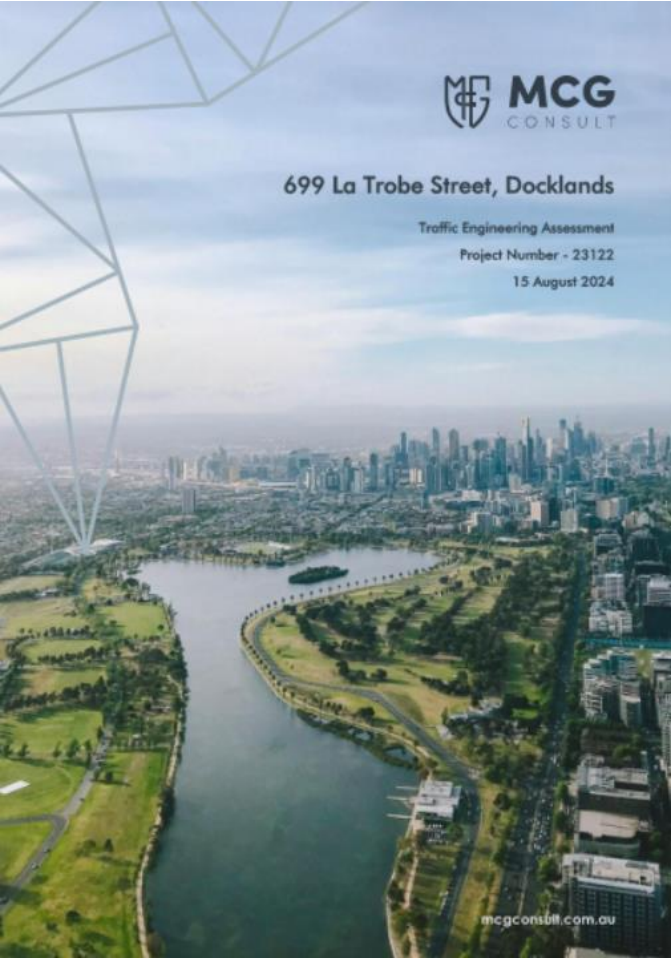
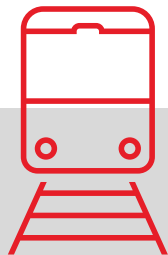
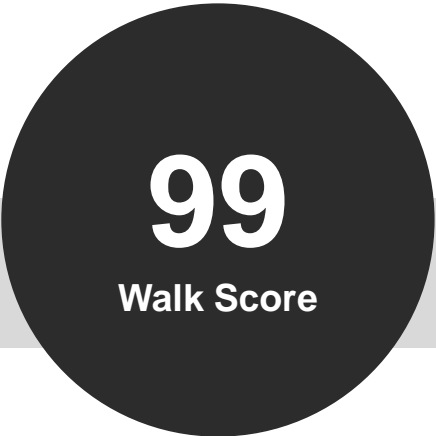


Transport

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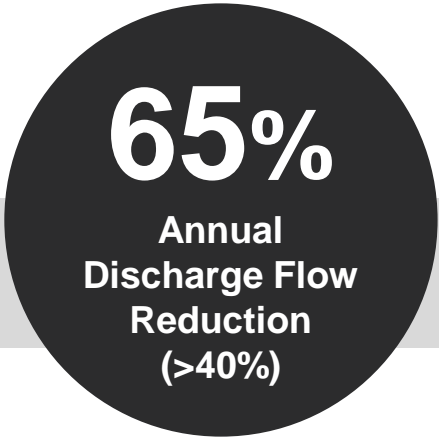


Stormwater

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Stormwater Management Report

Project Name	699 LaTrobe St, Docklands
Project Number:	23122
Date:	20-08-2024
Prepared by:	Dore McGrenaghan
Ref:	23122-CI-RPT-002

