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270 Clayton Road, Clayton

SUSTAINABILITY MANAGEMENT PLAN

DOCUMENT PROPERTIES

DOCUMENT FOR:	Fridcorp Pty Ltd Attn: Campbell Armstrong
DOCUMENT BY:	WRAP Engineering Pty Ltd 195 Swan Street Richmond, Victoria 3121
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DESCRIPTION:	Sustainability Management Plan
PROJECT NAME:	270 Clayton Road
PROJECT SITE:	270 Clayton Road Clayton, Victoria
PROJECT NUMBER:	20204

DOCUMENT AMENDMENTS

REVISION	DETAILS	AUTHOR/S	DATE	ISSUED BY
01	Draft issue for review	Jason Ung	28/04/2020	Damon Cuming
02	Town Planning issue	Jason Ung	07/07/2020	Jason Ung
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1 INTRODUCTION

This Sustainability Management Plan (SMP) has been prepared to assist the design, construction and operation of the proposed mixed-used development at 270 Clayton Road, Clayton, to achieve a range of best-practice sustainable development objectives.

WRAP Engineering have assessed the proposed plans and provided input to the design team.

This SMP captures initiatives necessary to ensure that the development meets the sustainability requirements of the Monash Planning Scheme, in particular the ESD requirements of the following Planning Clauses:

- 22.13 “Environmentally Sustainable Development Policy”.

1.1 SITE DESCRIPTION

The site at 270 Clayton Road has an area of approximately 1380m² and is located approximately 18km South East of the Melbourne CBD.

The site is currently occupied by a two-storey building which will be demolished prior to construction of the proposed development.



Figure 1: Aerial view of the site at 270 Clayton Road, showing the approximate site boundary. (Source: Nearmap, Mark-up: WRAP Engineering)

1.2 DEVELOPMENT SUMMARY

The proposed development will consist of the following:

- Basements 4-1: Carparking, services zones
- Ground Floor: Retail, lobby, bike store & EOT, services zones
- Levels 1-4: Commercial office
- Level 5-9: Serviced apartments
- Level 10: Conference centre, health club, communal terrace
- Roof: Rooftop plant space

1.3 COUNCIL PLANNING REQUIREMENTS

The Monash Planning Scheme expects new developments to be designed, built and maintained at a level that reflects best practice sustainable development outcomes. The ESD response will need to ensure that the design meets sustainability targets in the areas of energy reduction, water use reduction, stormwater management, indoor environment quality, materials selection, transportation, waste management and urban ecology.

The council's Planning Scheme also encourages the use of relevant ESD tools to assess the proposed development. For this project, the following tools will be used:

- Green Star – a holistic sustainability assessment tool; and
- Melbourne Water STORM – a stormwater assessment tool.

This SMP incorporates initiatives to ensure that the council's ESD requirements are satisfied by addressing the Green Star categories, demonstrating that council's objectives will be achieved, and using relevant and appropriate ESD assessment tools.

1.4 REFERENCE DOCUMENTATION

This SMP should be read in conjunction with the other relevant documentation included within the development's town planning submission to council. These documents may include the following:

- Architectural documentation
- Landscape plans
- Waste Management Plan
- Traffic engineer's report, transport plan, green travel plan or similar.

2 ESD ASSESSMENT

The following sections outline the ESD assessment which has been completed for the project. The assessment is presented within the Green Star categories, and for each item the following information is provided:

1. A short description of the ESD initiative and/or the project's design response;
2. The nominated party responsible for implementation of the initiative; and
3. The stage of the project at which implementation could be demonstrated.

Within this assessment, the level of detail that has been provided is generally in proportion to what is appropriate or practicable at this early stage of design. This is described or explained within each item, with future commitments included as appropriate.

Based on the current Green Star benchmarking assessment, the project is currently on target to achieve the equivalent to 47 Green Star points, with a further 9.5 points TBC. A 4 Star Green Star rating is equivalent to 45 points or above.

2.1 CONSTRUCTION AND BUILDING MANAGEMENT

2.1.1 OBJECTIVES:

- *To encourage a holistic and integrated design and construction process and ongoing high performance.*
- *To ensure waste avoidance, reuse and recycling during the operation stages of development.*

2.1.2 DEVELOPMENT RESPONSE

ESD INITIATIVE	RESPONSIBILITY & IMPLEMENTATION	PROJECT STAGE
Green Star Professional WRAP Engineering are engaged for the project to provide advice, support and information related to Green Star and sustainable design.	Developer	Initiation
Environmental Targets The building owner will set environmental targets for water and energy, and monitor the performance of the building against those targets.	Developer	Operation
Services & Maintainability Review The project team will complete a services & maintainability review prior to construction.	Developer	Contract Documentation
Building Tuning The building owner will implement a building tuning process for at least the first 12 months after occupation.	Developer	Occupation
Building Information Prior to occupancy, a package of building information will be developed and handed over to the building manager. This will include as-built drawings, operations and maintenance manuals, and supplier and warranty details.	Contractor	Construction

ESD INITIATIVE	RESPONSIBILITY & IMPLEMENTATION	PROJECT STAGE
<p>Building User Guide</p> <p>Prior to occupancy, a Building User Guide (BUG) will be developed for use by the residents. The BUG will use non-technical language help facilitate more sustainable behaviour by building occupants and more efficient use of the building systems.</p>	Developer	Construction
<p>Environmental Building Performance</p> <p>The building owner will commit to set targets and measure results for the environmental performance of the building.</p>	Developer	Operation
<p>End-of-Life Waste Performance</p> <p>The building owner will commit to reduce demolition waste at the end of life of interior fit-outs and base-building areas.</p>	Developer	Operation
<p>Energy Metering – Electricity and Gas</p> <p>All dwellings will be provided with individual authority meters, and all major base-building systems will be individually sub-metered to allow for effective building tuning.</p>	Services Engineer	Contract Documentation
<p>Water Metering</p> <p>All dwellings will be provided with individual authority meters, and all major base-building systems will be individually sub-metered to allow for effective building tuning.</p>	Services Engineer	Contract Documentation
<p>Monitoring Systems</p> <p>A monitoring system will be implemented to automatically capture and process the data produced by the energy and water meters.</p>	Services Engineer	Contract Documentation
<p>Construction Environmental Management</p> <p>The contractor will prepare and implement a Best Practice project-specific EMP at the start of construction. The EMP will be developed in accordance with the NSW Environmental Management Systems Guidelines or equivalent.</p>	Contractor	Construction
<p>Contractor Environmental Management</p> <p>The contractor engaged for the construction will hold ISO14001 certification.</p>	Contractor	Construction
<p>Contractor Staff Support</p> <p>The contractor will promote positive mental and physical health outcomes of site activities and culture of site workers, and enhance site workers’ knowledge on sustainable practices through education programs.</p>	Contractor	Construction
<p>Operational Waste</p> <p>A dedicated storage area will be provided for the separation and collection of recyclable waste, located in a convenient location. Recycling facilities will be separated from general waste, but will be located next to each other.</p> <p>Provisions will be made for the inclusion of both waste and recycling receptacles within the development to help encourage occupants to separate their waste at the earliest point of disposal.</p>	Architect	Contract Documentation

2.2 INDOOR ENVIRONMENT QUALITY

2.2.1 OBJECTIVES

- To achieve a healthy indoor environment quality for the wellbeing of building occupants.
- To provide a naturally comfortable indoor environment will lower the need for building services, such as artificial lighting, mechanical ventilation and cooling and heating devices.

2.2.2 DEVELOPMENT RESPONSE

ESD INITIATIVE	RESPONSIBILITY & IMPLEMENTATION	PROJECT STAGE
Volatile Organic Compounds All paints, adhesives and sealants and carpets will not exceed the limits outlined in Appendix A.	Architect Services Engineer	Contract Documentation
Formaldehyde All engineered wood products will have 'low' formaldehyde emissions, certified as E0 or better, or will not exceed the limits outlined in Appendix A.	Architect	Contract Documentation
Ventilation System The mechanical ventilation system will be designed to mitigate the entry of outdoor pollutants, provide easy access for maintenance, and will be cleaned prior to occupation.	Services Engineer Contractor	Construction
External Views All habitable rooms have high-quality external views to the private terraces and surrounding properties and gardens. A Green Star views assessment has been completed for the project, refer to Appendix B. The preliminary assessment shows that the project is on track to achieve high quality views to at least 60% of the lettable floor areas.	Architect	Design Development
Ventilation System Ventilation design will be in accordance with BCA 2019, part F4.	Services Engineer	Contract Documentation
Thermal Comfort The development will include low-e double glazing throughout, and it will be mechanically air-conditioned throughout all primary and secondary space.	Architect ESD Consultant	Contract Documentation
Artificial Lighting The lighting design within the building will include task-based lighting over sinks and benches; AND The lighting design throughout the development will ensure that the minimum illuminance levels and uniformity are in accordance with the requirements of AS1680.	Services Engineer	Contract Documentation

ESD INITIATIVE	RESPONSIBILITY & IMPLEMENTATION	PROJECT STAGE
<p>Localised Lighting Control</p> <p>Building occupants will have the ability to control the lighting in their immediate environment:</p> <ul style="list-style-type: none"> - Tenanted areas to be provided with individually addressable light fittings and a digital control system, for configuration by the tenant fit-out design. - Base-building primary and secondary spaces to be provided with locally dimmable lighting and motion sensors. 	Services Engineer	Contract Documentation

2.3 ENERGY EFFICIENCY

2.3.1 OBJECTIVES:

- *To ensure the efficient use of energy.*
- *To reduce total operating greenhouse emissions.*
- *To reduce energy peak demand.*
- *To reduce associated energy costs.*

2.3.2 DEVELOPMENT RESPONSE

ESD INITIATIVE	RESPONSIBILITY & IMPLEMENTATION	PROJECT STAGE
<p>Building Envelope</p> <p>All building elements forming part of the building's thermal envelope will exceed the deemed-to-satisfy requirements of NCC 2019 Section J by at least 10%, and all roofs will have a solar absorptance of at least 0.05 less than the maximum allowable value under Part J1.3.</p>	Architect	Contract Documentation
<p>Heating and Cooling Systems</p> <p>The project will implement energy efficient heating and cooling systems compliant with the requirements of NCC section J 2019.</p>	Services Engineer	Contract Documentation
<p>Domestic Hot Water</p> <p>The project will implement energy efficient domestic hot water system(s), utilising 6 Star gas instantaneous boilers.</p>	Services Engineer	Contract Documentation
<p>Solar PV</p> <p>A solar PV array of at least 10 kW will be provided.</p>	Architect Services Engineer	Contract Documentation
<p>Artificial Lighting</p> <p>- The lighting design throughout the development will be at least 10% more energy efficient than the BCA 2019 requirements.</p>	Services Engineer	Contract Documentation
<p>Car Park Ventilation</p> <p>The project will achieve energy reductions in the car park ventilation system by using carbon monoxide sensors.</p>	Services Engineer	Contract Documentation

ESD INITIATIVE	RESPONSIBILITY & IMPLEMENTATION	PROJECT STAGE
Energy Efficient Appliances Where domestic appliances are installed or provided by the developer, they will be within one star of the best available and comparable type of appliance, as per the Equipment Energy Efficiency (E3) program. This may include dishwashers, refrigerators, washing machines and/or clothes dryers.	Architect	Contract Documentation

2.4 TRANSPORT

2.4.1 OBJECTIVES:

- *To minimise car dependency.*
- *To ensure that the built environment is designed to promote the use of public transport, walking and cycling.*

2.4.2 DEVELOPMENT RESPONSE

ESD INITIATIVE	RESPONSIBILITY & IMPLEMENTATION	PROJECT STAGE
Active Transport Facilities The development will include the following facilities to support active transport: <ul style="list-style-type: none"> - At least 48 secure bicycle parking spaces for the development; - Change facilities, including at least 8 showers and 58 lockers; and - At least 10 publicly accessible bicycle parking spaces for use by visitors. 	Architect	Contract Documentation
Access to Public Transport The development is located in Clayton, with good access to Clayton train station and buses. It scores a Transit Score of 64 out of 100.	n/a	
Walking Access to Amenities The development is a “Walker’s Paradise”, achieving a Walk Score of 90 out of 100.	n/a	
Electric Vehicle Charging The development will support the use of electric vehicles by providing electric vehicle charging points to at least 5% of all car parking spaces.	Architect Services Engineer	Contract Documentation
Share Vehicles The development will support vehicle sharing initiative by providing building occupants with following – <ul style="list-style-type: none"> - Access to Electrical car share; - Access to 2 no. shared E-bikes; & - Access to shared bikes (Service Apartments). 	Developer	Operations

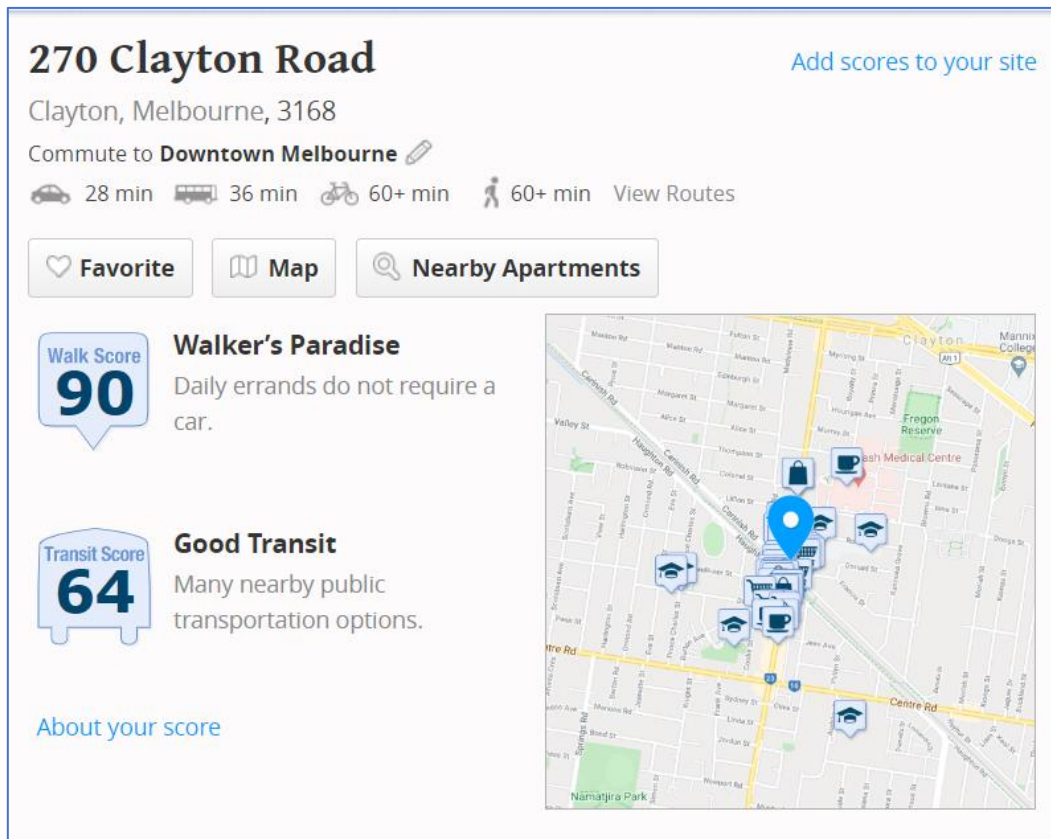


Figure 2: Walk Score and Transit Score for the site location

2.5 WATER EFFICIENCY

2.5.1 OBJECTIVES:

- To ensure the efficient use of water.
- To reduce total operating potable water use.
- To encourage the collection and reuse of stormwater.
- To encourage the appropriate use of alternative water sources (e.g. grey water).
- To minimise associated water costs.

2.5.2 DEVELOPMENT RESPONSE

ESD INITIATIVE	RESPONSIBILITY & IMPLEMENTATION	PROJECT STAGE
<p>Water Fixtures and Fittings</p> <p>The following Water Efficiency Labelling Scheme (WELS) star ratings will be specified:</p> <ul style="list-style-type: none"> - Toilets: 4 Star; - Urinals: 5 Star; - Taps (bathroom and kitchen): 5 Star; and - Showerheads: 3 Star (>6.0 but ≤7.5 L/min). 	Architect	Contract Documentation

ESD INITIATIVE	RESPONSIBILITY & IMPLEMENTATION	PROJECT STAGE
<p>Water Efficient Appliances</p> <p>Where domestic appliances are installed or provided by the developer, they will be within one star of the best available and comparable type of appliance, as per the WELS program. This may include dishwashers or washing machines.</p>	Architect	Contract Documentation
<p>Rainwater Collection and Reuse</p> <p>Rainwater harvesting for non-potable uses will be implemented as a water saving initiative. The details of this system for this development are as follows:</p> <ul style="list-style-type: none"> - Rainwater tank size: 30 kL - Rainwater tank location: Basement - Roof catchment area: Approximately 728 m² - Rainwater usage: <ul style="list-style-type: none"> - Toilet flushing to end-of-trip facilities and all commercial level amenities; - Irrigation to common area gardens; and - Bin room washdown supply. <p>Refer to Appendix C for details.</p>	Architect Services Engineer	Contract Documentation
<p>Landscape Irrigation</p> <p>Common area landscaping will be supplied from the rainwater system and will use generally use water-efficient drip irrigation where appropriate.</p>	Services Engineer Landscape	Contract Documentation
<p>Waterless HVAC</p> <p>All HVAC systems will use air-cooled heat rejection systems.</p>	Services Engineer	Contract Documentation
<p>Fire System Test Water</p> <p>The fire water test system will not expel water for testing, or the fire systems will include temporary storage for 80% of the routine fire protection system test water and maintenance drain-downs for reuse on site.</p>	Services Engineer	Contract Documentation

2.6 BUILDING MATERIALS

2.6.1 OBJECTIVES:

- *To minimise the environmental impacts materials used by encouraging the use of materials with a favourable lifecycle assessment based on the following factors:*
 - *Fate of material*
 - *Recycling/Reuse*
 - *Embodied energy*
 - *Biodiversity*
 - *Human health*
 - *Environmental toxicity*
 - *Environmental responsibility.*
- *To ensure waste avoidance, reuse and recycling during the construction stages of development.*

2.6.2 DEVELOPMENT RESPONSE

ESD INITIATIVE	RESPONSIBILITY & IMPLEMENTATION	PROJECT STAGE
PVC At least 90% of all flooring, pipes, cables and blinds used in the project will be GBCA approved Best Practice PVC or PVC-alternative materials.	Contractor	Construction
Timber At least 95% of timber used in the project will be reused or will be from FSC or PEFC certified forests.	Contractor	Construction
Recycled Content All bulk thermal insulation used in the project will contain a minimum of 50% post-consumer recycled material.	Contractor	Construction
Steel - At least 95% of all structural steel used in the project will be sourced from a Responsible Steel Maker; and - At least 60% of reinforcing steel used in the project will be produced using energy-reducing processed in its manufacture.	Contractor	Construction
Concrete - At least 50% of concrete mix water will be reclaimed; and - Concrete aggregate to be substituted with crushed slag or other alternative materials as follows: - At least 40% of coarse aggregate; or - At least 25% of fine aggregate (sand).	Contractor	Construction
Construction Waste Management The contractor will prepare a construction waste management plan for the project and will divert at least 90% of all demolition and construction waste from landfill.	Contractor	Construction

2.7 URBAN ECOLOGY

2.7.1 OBJECTIVES:

- *To protect and enhance biodiversity.*
- *To provide sustainable landscaping.*
- *To protect and manage all remnant indigenous plant communities.*
- *To encourage the planting of indigenous vegetation.*
- *To minimise the urban heat island effect.*
- *To remediate contaminated and hazardous sites and existing buildings.*

2.7.2 DEVELOPMENT RESPONSE

ESD INITIATIVE	RESPONSIBILITY & IMPLEMENTATION	PROJECT STAGE
Urban Heat Island Effect The project will minimise the urban heat island effect through the implementation of high-SRI roofing materials (> 81) and soft landscaping.	Architect Landscape	Contract Documentation

ESD INITIATIVE	RESPONSIBILITY & IMPLEMENTATION	PROJECT STAGE
Contamination and Hazardous Materials The project will assess the existing site for contamination and any existing buildings will be assessed for asbestos, lead and PCB's. Any contamination or hazardous materials will be safely remediated and cleared in accordance with relevant standards.	Contractor	Construction

2.8 EMISSIONS & STORMWATER MANAGEMENT

2.8.1 OBJECTIVES:

- *To reduce the impact of stormwater run-off.*
- *To improve the water quality of stormwater run-off.*
- *To achieve best practice stormwater quality outcomes.*
- *To incorporate water sensitive urban design principles.*
- *To reduce impacts to wildlife due to light pollution.*
- *To reduce risk of harmful microbes in HVAC systems.*
- *To reduce ozone layer depletion.*

2.8.2 DEVELOPMENT RESPONSE

ESD INITIATIVE	RESPONSIBILITY & IMPLEMENTATION	PROJECT STAGE
Stormwater Pollution Reduction The project will achieve a Best Practice stormwater pollution reduction outcome by achieving a STORM score of at least 100%. Refer to Appendix C for details.	Architect Services Engineer	Contract Documentation
Stormwater Discharge Post-development peak discharge will not exceed the pre-development peak discharge rate.	Civil Engineer	Contract Documentation
Light Pollution The lighting design will minimise light pollution to neighbours and the night sky through compliance with AS4282 and ensuring that no external light fittings have an upward light output ratio greater than 5%.	Services Engineer	Contract Documentation
Microbial Control All HVAC systems will use air-cooled heat rejection systems.	Services Engineer	Contract Documentation
Insulation All insulants will have zero ozone depletion potential (ODP).	Contractor	Construction
Refrigerants All HVAC refrigerants used in the development will be selected to have an Ozone Depletion Potential (ODP) of zero.	Services Engineer	Contract Documentation

2.9 INNOVATION

2.9.1 OBJECTIVES:

- *To encourage innovative technology, design and processes in all development, which positively influence the sustainability of buildings.*

2.9.2 DEVELOPMENT RESPONSE

ESD INITIATIVE	RESPONSIBILITY & IMPLEMENTATION	PROJECT STAGE
Ultra-Low VOC Paints At least 50% of all paints used in the base-building works will be Ultra-Low VOC (<5 g/L).	Architect	Contract Documentation
Financial Transparency Disclosure of itemised design, construction, documentation and project cost for the project development.	Developer	Construction

3 GREEN STAR ASSESSMENT

A summary of the Green Star results is presented below.

Green Star - Design & As Built v1.3

Project:	270 Clayton Road, Clayton	Core Points Available	Total Score: Targeted	Total Score: Targeted + TBC
Targeted Rating:	4 Stars (Benchmark)	100	47.0	56.5
Date:	10/07/2020			

CATEGORY / CREDIT	CODE	CREDIT CRITERIA	POINTS AVAILABLE	POINTS TARGETED	POINTS TBC	RESPONSIBILITY	NOTES
Management			14				
Green Star Accredited Professional	1.1	Accredited Professional	1	1		ESD	
Commissioning and Tuning	2.0	Environmental Performance Targets	-	Complies		CLIENT ESD SERVICES	
	2.1	Services and Maintainability Review	1	1		CLIENT	
	2.2	Building Commissioning	1			CONTRACTOR SERVICES	Credit not targeted
	2.3	Building Systems Tuning	1	1			
	2.4	Independent Commissioning Agent	1			CLIENT	Credit not targeted
Adaptation and Resilience	3.1	Implementation of a Climate Adaptation Plan	2			CLIENT	Credit not targeted
Building Information	4.1	Building Information	1	1		CLIENT	
Commitment to Performance	5.1	Environmental Building Performance	1	1		CLIENT	
	5.2	End of Life Waste Performance	1	1			
Metering and Monitoring	6.0	Metering	-	Complies		SERVICES	
	6.1	Monitoring Systems	1	1			
Responsible Construction Practices	7.0	Environmental Management Plan	-	Complies		CONTRACTOR	
	7.1	Environmental Management System	1	1			
	7.2	High Quality Staff Support	1	1			
Operational Waste	8B	Prescriptive Pathway: Facilities	1	1		ARCHITECT WASTE	
Total			14	10	0		

Green Star - Design & As Built v1.3



Project:	270 Clayton Road, Clayton	Core Points Available	Total Score: Targeted	Total Score: Targeted + TBC
Targeted Rating:	4 Stars (Benchmark)	100	47.0	56.5
Date:	10/07/2020			

CATEGORY / CREDIT	CODE	CREDIT CRITERIA	POINTS AVAILABLE	POINTS TARGETED	POINTS TBC	RESPONSIBILITY	NOTES
Indoor Environment Quality			17				
Indoor Air Quality	9.1	Ventilation System Attributes	1	1		SERVICES	
	9.2	Provision of Outdoor Air <input checked="" type="checkbox"/>	2		1		To be reviewed by mechanical engineer during design development.
	9.3	Exhaust or Elimination of Pollutants <input checked="" type="checkbox"/>	1	1			
Acoustic Comfort	10.1	Internal Noise Levels	1		1	ACOUSTIC	To be reviewed by acoustic consultant during design development.
	10.2	Reverberation	1		1		To be reviewed by acoustic consultant during design development.
	10.3	Acoustic Separation	1		1		To be reviewed by acoustic consultant during design development.
Lighting Comfort	11.0	Minimum Lighting Comfort	-	Complies		SERVICES	
	11.1 General Illuminance and Glare Reduction	11.1.1 General Illuminance <input checked="" type="checkbox"/>	1	1			
		11.1.2 Glare Reduction <input checked="" type="checkbox"/>					
	11.2	Surface Illuminance <input type="checkbox"/>	1				Credit not targeted
	11.3	Localised Lighting Control <input type="checkbox"/>	1	1			
Visual Comfort	12.0	Glare Reduction <input checked="" type="checkbox"/>	-	Complies		ESD ARCHITECT	
	12.1	Daylight <input type="checkbox"/>	2				Credit not targeted
	12.2	Views <input type="checkbox"/>	1	1			
Indoor Pollutants	13.1 Paints, Adhesives, Sealants and Carpets	13.1.1 Paints, Adhesives and Sealants <input checked="" type="checkbox"/>	1	1		ARCHITECT CONTRACTOR	
		13.1.2 Carpets <input checked="" type="checkbox"/>					
	13.2	Engineered Wood Products <input checked="" type="checkbox"/>	1	1			
Thermal Comfort	14.1	Thermal Comfort <input checked="" type="checkbox"/>	1	1		ARCHITECT SERVICES	
	14.2	Advanced Thermal Comfort <input checked="" type="checkbox"/>	1				Credit not targeted
Total			17	8	4		

Green Star - Design & As Built v1.3

Project:	270 Clayton Road, Clayton	Core Points Available	Total Score: Targeted	Total Score: Targeted + TBC
Targeted Rating:	4 Stars (Benchmark)	100	47.0	56.5
Date:	10/07/2020			

CATEGORY / CREDIT	CODE	CREDIT CRITERIA	POINTS AVAILABLE	POINTS TARGETED	POINTS TBC	RESPONSIBILITY	NOTES
Energy			22				
Greenhouse Gas Emissions	15A.0	Conditional Requirement: Prescriptive Pathway	-	Complies		-	
	15A.1	Building Envelope	1	1		ARCHITECT	
	15A.2	Wall-Glazing Construction and Retail Display Glazing	1				Credit not targeted
	15A.3	Lighting	1	1			
	15A.4	Ventilation and Air Conditioning	1	1		SERVICES	
	15A.5	Domestic Hot Water	1				Credit not targeted
	15A.6	Transition Plan	1			CLIENT	Credit not targeted
	15A.7	Fuel Switching	1				Credit not targeted
	15A.8	On-Site Storage	1			SERVICES	Credit not targeted
	15A.9	Vertical Transportation	1	1			Likely achievable. Requires confirmation from lift manufacturers.
	15A.10	Off-Site Renewables	5			CLIENT	Credit not targeted
Peak Electricity Demand Reduction	16A	Prescriptive Pathway: On-Site Energy Generation <input type="checkbox"/>	1			SERVICES	Credit unlikely to be achieved
Total			11	4	0		

Transport			10				
Sustainable Transport	17B.1	Access by Public Transport	3	1		-	Score estimated based on Transit Score of 64/100. Site is located 200m from Clayton train station.
	17B.2	Reduced Car Parking Provision	1	0.5		-	Development likely to achieve 0.5 points.
	17B.3	Low Emission Vehicle Infrastructure	1	1		SERVICES	Requires at least 5% of car parks to have EV charging.
	17B.4	Active Transport Facilities	1	1		ARCHITECT	
	17B.5	Walkable Neighbourhoods	1	1		-	Walk Score of 90/100, walker's paradise.
Total			7	4.5	0		

Water			12				
Potable Water	18B.1	Sanitary Fixture Efficiency	1	1		ARCHITECT	
	18B.2	Rainwater Reuse	1			SERVICES	Credit not targeted
	18B.3	Heat Rejection	2	2			
	18B.4	Landscape Irrigation	1	1		LANDSCAPE	
	18B.5	Fire Protection System Test Water	1	1		SERVICES	TBC pending fire protection requirements.
Total			6	5	0		

Green Star - Design & As Built v1.3



Project:	270 Clayton Road, Clayton	Core Points Available	Total Score: Targeted	Total Score: Targeted + TBC
Targeted Rating:	4 Stars (Benchmark)	100	47.0	56.5
Date:	10/07/2020			

CATEGORY / CREDIT	CODE	CREDIT CRITERIA	POINTS AVAILABLE	POINTS TARGETED	POINTS TBC	RESPONSIBILITY	NOTES	
Materials			14					
Life Cycle Impacts	19B.1 Concrete	19B.1.1 Portland Cement Reduction <input type="checkbox"/>	2			STRUCTURAL CONTRACTOR	Credit not targeted	
		19B.1.2 Water Reduction	0.5	0.5				
		19B.1.3 Aggregates Reduction	0.5	0.5				
	19B.2 Steel	B. Reduced Use of Steel Reinforcement	1			STRUCTURAL	Credit not targeted	
	19B.3	Building Reuse		2			-	Credit not targeted
				2				Credit not targeted
19B.4	Structural Timber		-			-	Credit not targeted	
			3				Credit not targeted	
Responsible Building Materials	20.1	Structural and Reinforcing Steel	-	Complies		CONTRACTOR		
			1	1				
	20.2	Timber <input checked="" type="checkbox"/>	1	1		ARCHITECT CONTRACTOR		
	20.3	Permanent Formwork, Pipes, Flooring, Blinds and Cables	1	1		ARCHITECT CONTRACTOR		
Sustainable Products	21.1	Product Transparency and Sustainability <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	3	2	1	ARCHITECT CONTRACTOR	At least 2 points easily achievable based on EPDs and product certifications.	
Construction and Demolition Waste	22.0	Reporting Accuracy	-	Complies		CONTRACTOR		
	22B	Percentage Benchmark	1	1				
Total			12	7	1			

Land Use & Ecology			6				
Ecological Value	23.0	Endangered, Threatened or Vulnerable Species	-	Complies		-	
	23.1	Ecological Value	3	0.5	0.5	LANDSCAPE	To be reviewed with landscape during DD.
Sustainable Sites	24.0	Conditional Requirement	-	Complies		-	
	24.1	Reuse of Land	1	1		-	
	24.2	Contamination and Hazardous Materials <input type="checkbox"/> <input checked="" type="checkbox"/>	1	1		CLIENT CONTRACTOR	
Heat Island Effect	25.1	Heat Island Effect Reduction	1		1	ARCHITECT LANDSCAPE	Roofing will be high-SRI. Requirements for hardscaping and other surfaces to be reviewed during Design Development.
Total			6	2.5	1.5		

Green Star - Design & As Built v1.3



Project:	270 Clayton Road, Clayton	Core Points Available	Total Score: Targeted	Total Score: Targeted + TBC
Targeted Rating:	4 Stars (Benchmark)	100	47.0	56.5
Date:	10/07/2020			

CATEGORY / CREDIT	CODE	CREDIT CRITERIA	POINTS AVAILABLE	POINTS TARGETED	POINTS TBC	RESPONSIBILITY	NOTES
Emissions			5				
Stormwater	26.1	Stormwater Peak Discharge	1	1		CIVIL	
	26.2	Stormwater Pollution Targets	1	1			100% STORM score is considered equivalent to this credit.
Light Pollution	27.0	Light Pollution to Neighbouring Bodies	-	Complies		SERVICES	
	27.1	Light Pollution to Night Sky	1	1			
Microbial Control	28	Legionella Impacts from Cooling Systems	1	1		SERVICES	
Refrigerant Impacts	29.1	Refrigerants Impacts	1			SERVICES	Credit not targeted
Total			5	4	0		

Innovation			10				
Innovative Technology or Process	30A	Innovative Technology or Process	10				
Market Transformation	30B	Market Transformation					
Improving on Green Star Benchmarks	30C	Improving on Green Star Benchmarks		1			- Ultra low VOC paints
Innovation Challenge	30D	Innovation Challenge		1			- Financial Transparency
Global Sustainability	30E	Global Sustainability				3	- Green Star Performance: Green Cleaning (TBC) - Green Star Performance: Procurement and Purchasing (TBC) - Green Star Performance: Groundskeeping Practices (TBC)
Total			10	2	3		

TOTALS	AVAILABLE	TARGETED	TARGETED + TBC
CORE POINTS	100	45.0	51.5
CATEGORY PERCENTAGE SCORE		45.0	51.5
INNOVATION POINTS	10	2.0	5.0
TOTAL SCORE		47.0	56.5

APPENDIX A – VOC & FORMALDEHYDE LIMITS

VOC LIMITS – PAINTS, ADHESIVES & SEALANTS

PRODUCT CATEGORY	MAX. TVOC (g/L OF READY TO USE PRODUCT)
General purpose adhesives and sealants	50
Interior wall and ceiling paint, all sheen levels	16
Trim, varnishes and wood stains	75
Primers, sealers and prep coats	65
One and two pack performance coatings for floors	140
Acoustic sealants, architectural sealant, waterproofing membranes and sealant, fire retardant sealants and adhesives	250
Structural glazing adhesive, wood flooring and laminate adhesives and sealants	100

VOC LIMITS – CARPETS

COMPLIANCE OPTIONS	COMPLIANCE CRITERIA
A – PRODUCT CERTIFICATION	<p>The product is certified under a recognised Product Certification Scheme (listed on the GBCA website http://new.gbca.org.au/product-certification-schemes/) or other recognised standards.</p> <p>The certificate must be current at the time of project registration or submission and list the relevant product name and model.</p>
B – LABORATORY TESTING	<p><u>ASTM D5116:</u></p> <ul style="list-style-type: none"> - Total VOC limit: 0.5mg/m² per hour, & - 4-PC limit: 0.05mg/m² per hour <p><u>ISO 16000 / EN 13419:</u></p> <ul style="list-style-type: none"> - TVOC at three days: 0.5mg/m² per hour <p><u>ISO 10580 / ISO/TC 219 (Document N238):</u></p> <ul style="list-style-type: none"> - TVOC at 24 hours: 0.5mg/m² per hour

FORMALDEHYDE LIMITS

TEST PROTOCOL	EMISSION LIMIT/ UNIT OF MEASUREMENT
AS/NZS 2269:2004, testing procedure AS/NZS 2098.11:2005 method 10 for Plywood	≤1mg/ L
AS/NZS 1859.1:2004 - Particle Board, with use of testing procedure AS/NZS 4266.16:2004 method 16	≤1.5 mg/L
AS/NZS 1859.2:2004 - MDF, with use of testing procedure AS/NZS 4266.16:2004 method 16	≤1mg/ L
AS/NZS 4357.4 - Laminated Veneer Lumber (LVL)	≤1mg/ L
Japanese Agricultural Standard MAFF Notification No.701 Appendix Clause 3 (11) - LVL	≤1mg/ L
JIS A 5908:2003- Particle Board and Plywood, with use of testing procedure JIS A 1460	≤1mg/ L
JIS A 5905:2003 - MDF, with use of testing procedure JIS A 1460	≤1mg/ L
JIS A1901 (not applicable to Plywood, applicable to high pressure laminates and compact laminates)	≤0.1 mg/m ² hr
ASTM D5116 (applicable to high pressure laminates and compact laminates)	≤0.1 mg/m ² hr
ISO 16000 part 9, 10 and 11 (also known as EN 13419), applicable to high pressure laminates and compact laminates	≤0.1 mg/m ² hr (at 3 days)
ASTM D6007	≤0.12mg/m ³
ASTM E1333	≤0.12mg/m ³
EN 717-1 (also known as DIN EN 717-1)	≤0.12mg/m ³
EN 717-2 (also known as DIN EN 717-2)	≤3.5mg/m ² hr

APPENDIX B – VIEWS ASSESSMENT

A preliminary views assessment has been prepared, in accordance with the methodology as outlined within the Green Star Daylight Hand and Views Calculation Guide.

LEVEL	OCCUPIED FLOOR AREA (m ²)	VIEWS COMPLIANT AREA (m ²)
Ground	433	316
Level 1	993	792
Level 2	1220	951
Level 3	896	774
Level 4	723	660
Level 5-9	3865	2575
Total	8130	6068
Overall Compliance	74%	

Results Summary:

Green Star Target	60%
Preliminary Assessment Result	74%
Result	PASS – 1 point

Images of the views “zone of compliance” levels are presented below:

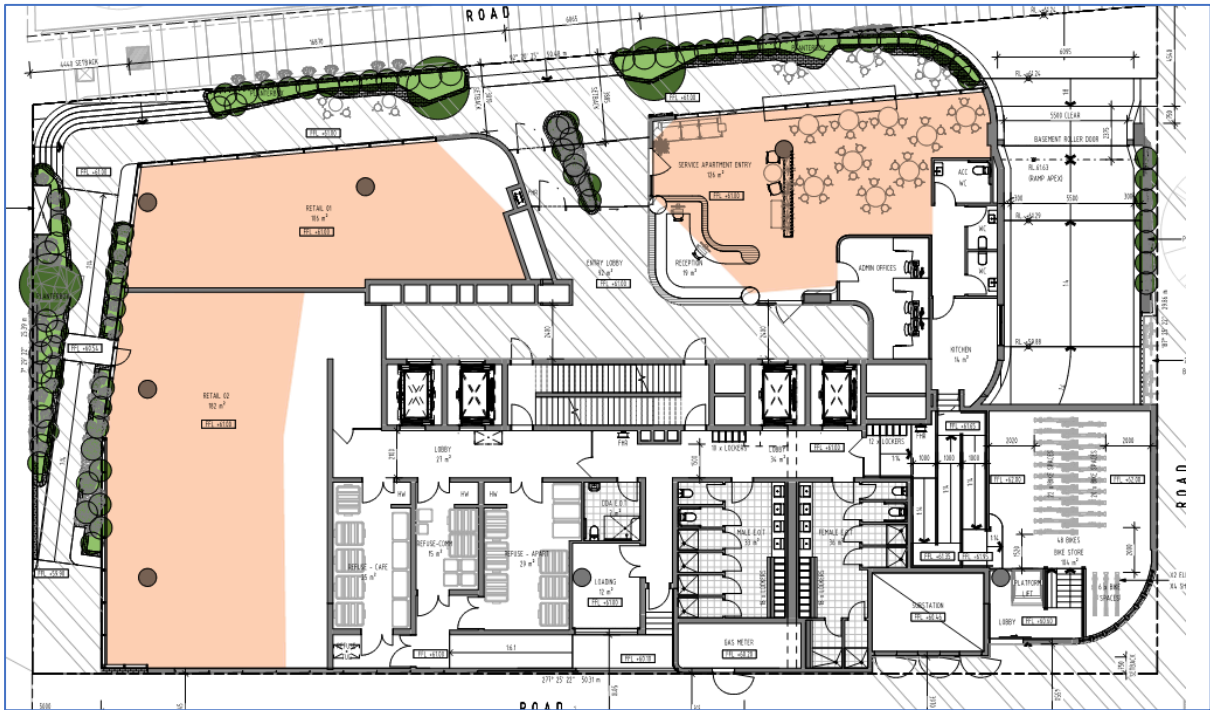


Figure 3 Ground Level view compliance areas shown in orange.

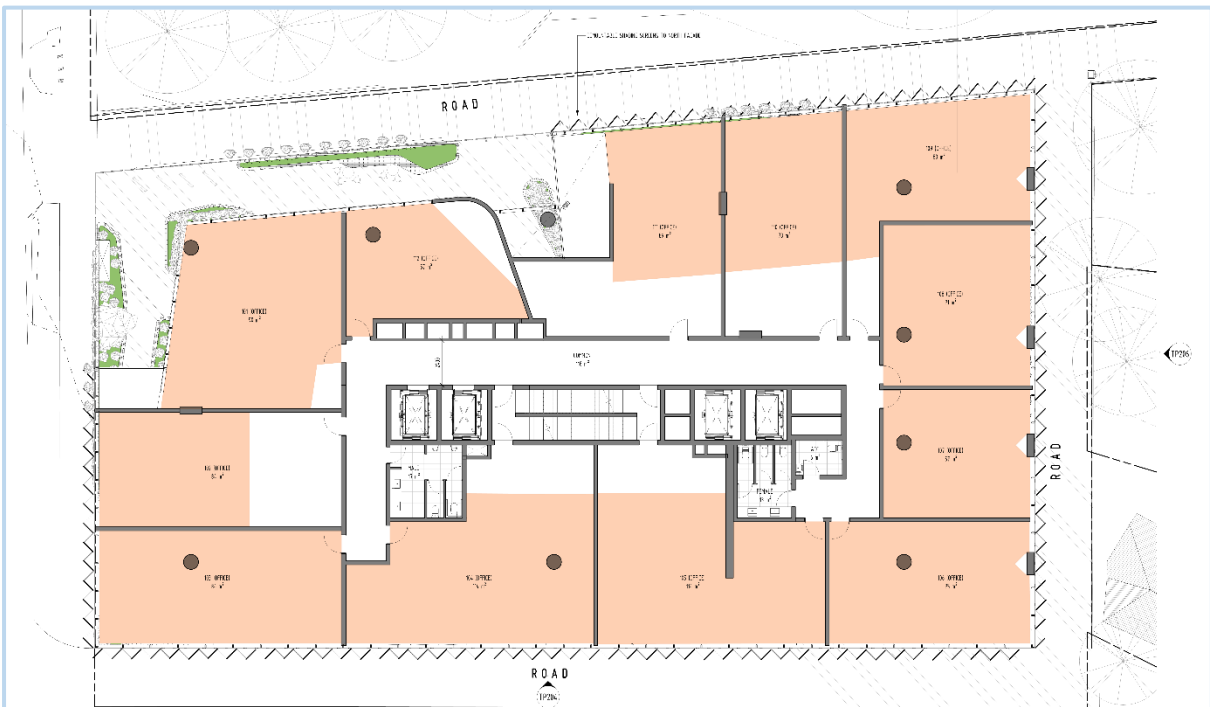


Figure 4 Level 1 view compliance areas shown in orange.

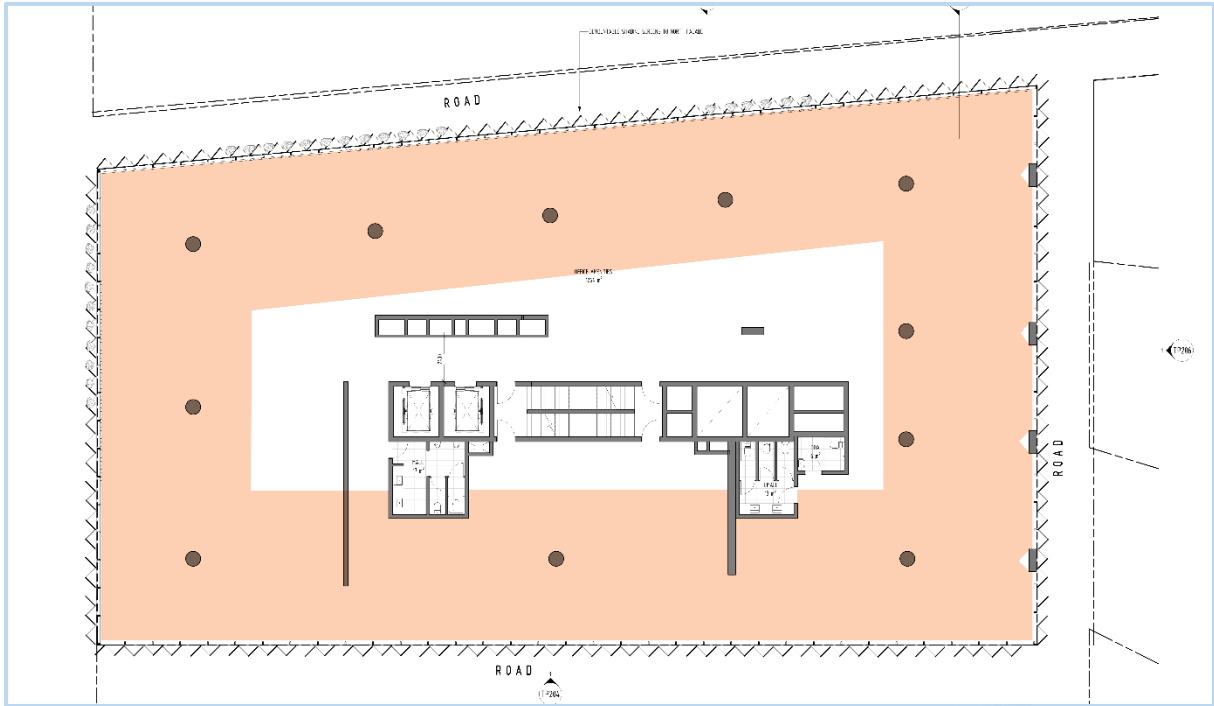


Figure 5 Level 2 view compliance areas shown in orange.

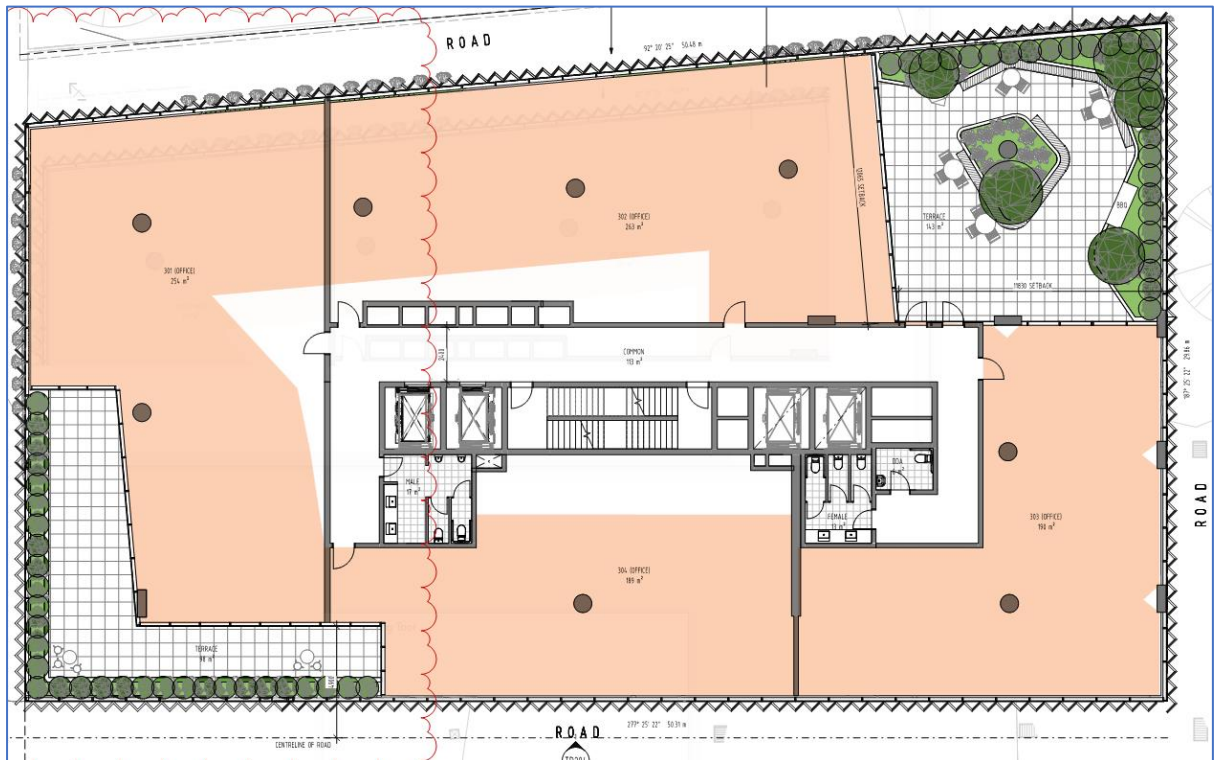


Figure 6 Level 3 view compliance areas shown in orange.

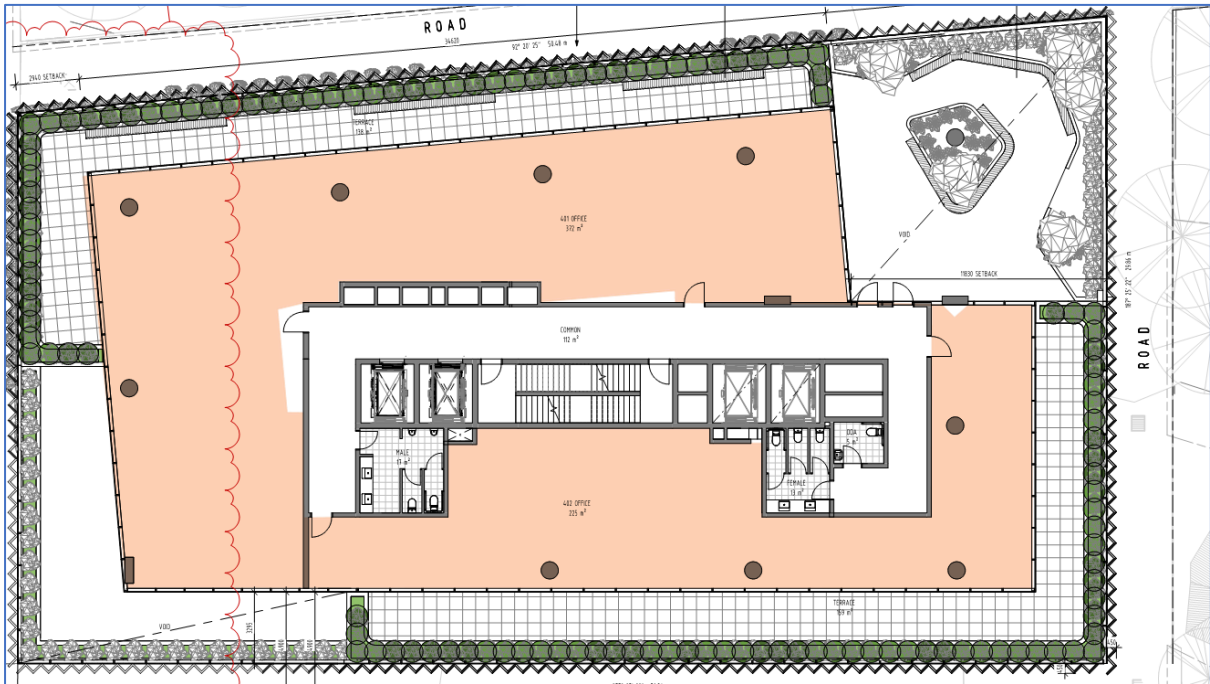


Figure 7 Level 4 view compliance areas shown in orange.



Figure 8 Levels 5-9 view compliance areas shown in orange.

APPENDIX C – STORMWATER ASSESSMENT

OVERVIEW

Under clause 22.13 of the Monash Planning Scheme Planning Scheme, the proposed development is required to demonstrate, as part of its town planning application, its ability to meet the water quality performance objectives as set out in the Urban Stormwater Best Practice Environmental Management Guidelines, Victorian Stormwater Committee 1999.

In response to this, the Stormwater management response proposed for this development has been assessed using the Melbourne Water STORM software.

The preliminary stormwater treatment proposed for this development achieves best practice performance objectives outlined in the Urban Stormwater Best Practice Environmental Management Guidelines (CSIRO 1999) to achieve the objectives of the State Environment Protection Policy (Water of Victoria).

General considerations and potential maintenance activities for the proposed stormwater management response have been outlined in this report. The final detailing of the systems will be agreed with the civil and hydraulic design consultants.

General measures to be considered by the building contractor to minimise stormwater pollution during construction have also been included.

PERFORMANCE MEASUREMENT TOOL

The stormwater management response proposed for this development has been assessed using the Melbourne Water software STORM.

DEVELOPMENT RESPONSE – STORMWATER MANAGEMENT

A summary of the development's stormwater management response is presented below:

STORMWATER TREATMENT	TREATMENT DESCRIPTION AND DETAILS
Treatment #1 – Rainwater Harvesting	<ul style="list-style-type: none"> - 1x 30 kL rainwater tank, located in Basement. Refer to architectural plans. - Roof catchment area of approximately 728 m² collecting into rainwater tank. - Captured rainwater used for toilet flushing End-of-Trip facilities, commercial amenities, landscape irrigation and bin room washdown.

STORM ASSESSMENT RESULTS

Based on the stormwater treatment details described above, the development achieves a STORM score of 100%.

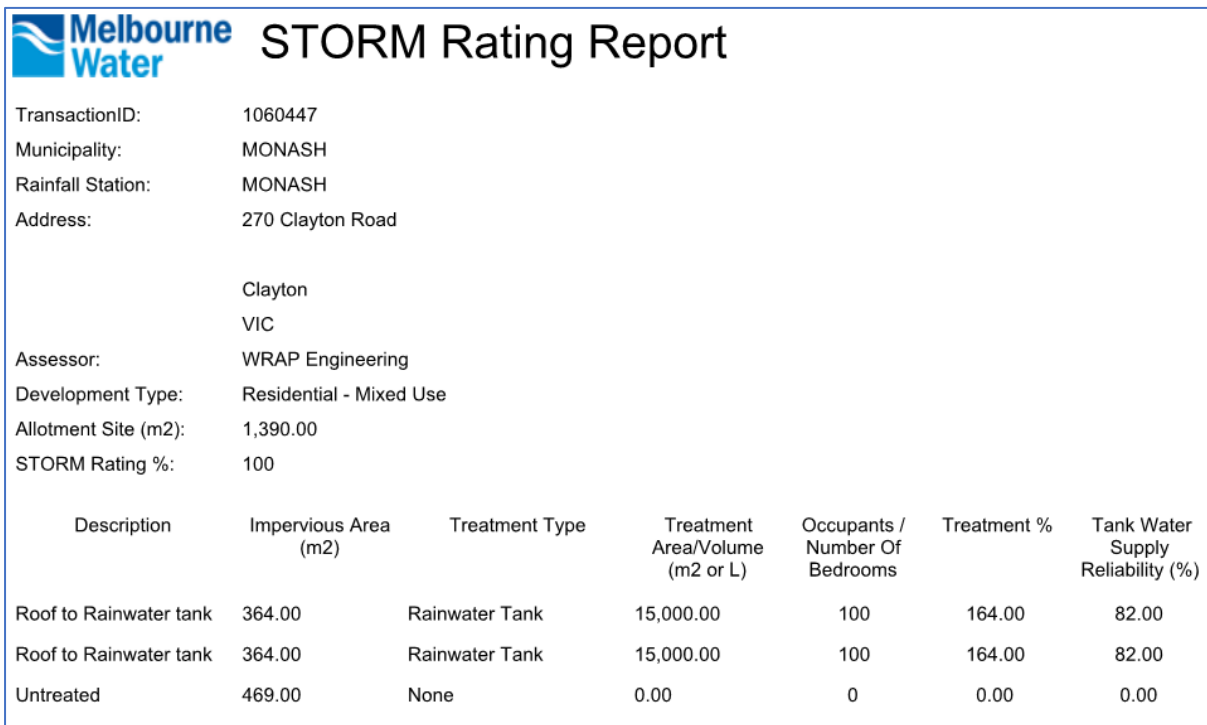


Figure 9: STORM rating report results and inputs

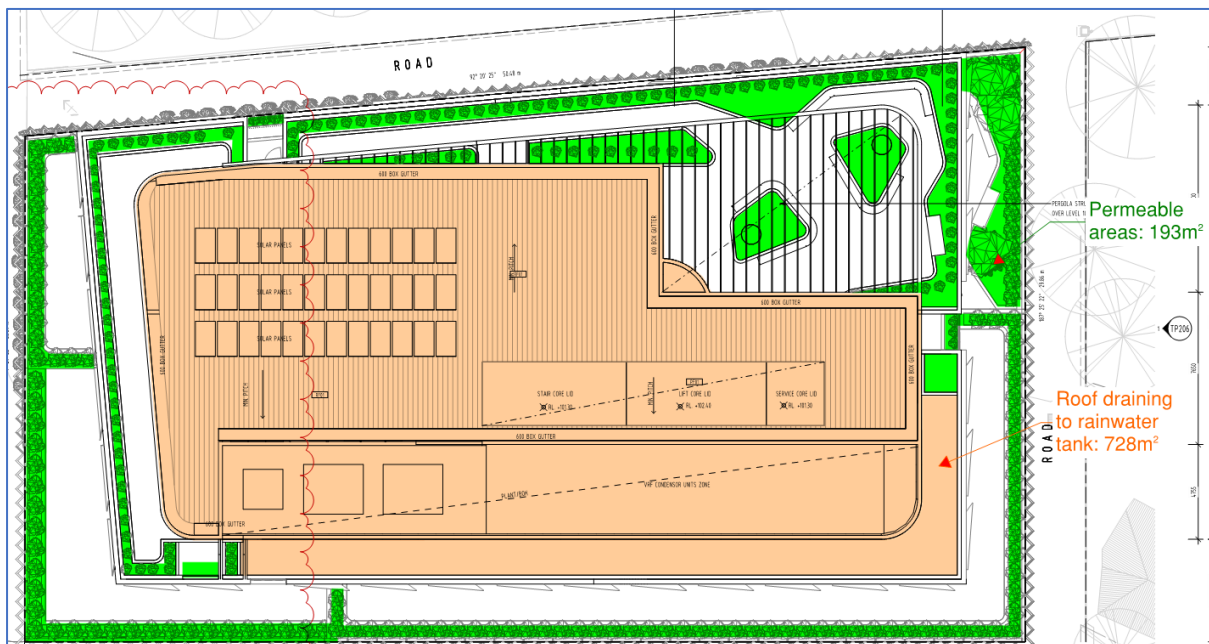


Figure 10: Site plan marked-up showing proposed catchment areas

RAINWATER TANK DESIGN & INSTALLATION CONSIDERATIONS

Rainwater tanks provide flow retention capacity and storage for reuse. They reduce stormwater runoff, decrease the demand of potable water and allow particle settlement within the tank, thus treating rainwater. General considerations for rainwater tank systems design and potential maintenance activities include:

- Incorporating a first flush device to the rainwater collection system. First flush devices divert the initial most polluted portion of water runoff.
- Automated switches to divert water supply from the tank to mains need to be incorporated.
- Connection to toilets ensure water tanks are run down on a daily basis, leaving spare capacity for new rainwater collection.

STORMWATER RUNOFF TREATMENT DURING THE CONSTRUCTION STAGE

Stormwater management in the construction stage will be required to minimise the likelihood of contaminating stormwater discharge from the site and reducing the velocity of the flows generated from the development as it is being constructed.

Stormwater management will form a part of the contractor's EMP, and it will need to specifically address the following objectives:

1. Prevent discharge of contaminated stormwater;
2. Prevent impact on offsite surface or groundwater due to construction works; and
3. Slow down stormwater flows during heavy rainfall.

The EMP should consider the following specific items in relation to stormwater management:

- Storage of materials, chemicals and construction waste must be well clear of site drainage lines or other infrastructure;
- Immediate clean-up of chemical spills;
- Soil and dust containment;
- Regular cleaning of roadways and other impervious surfaces;
- Install sediment or silt traps around stormwater drain points;
- Prevent stormwater from adjacent properties entering the site;
- Capping/bunding of piles of contaminated materials or soil;
- Inspect and clean all sediment filters and traps after heavy rains; and
- Regularly evaluate site stormwater management systems for effectiveness.

More information is available from Melbourne Water booklet "*Keeping Our Stormwater Clean – A Builder's Guide*".

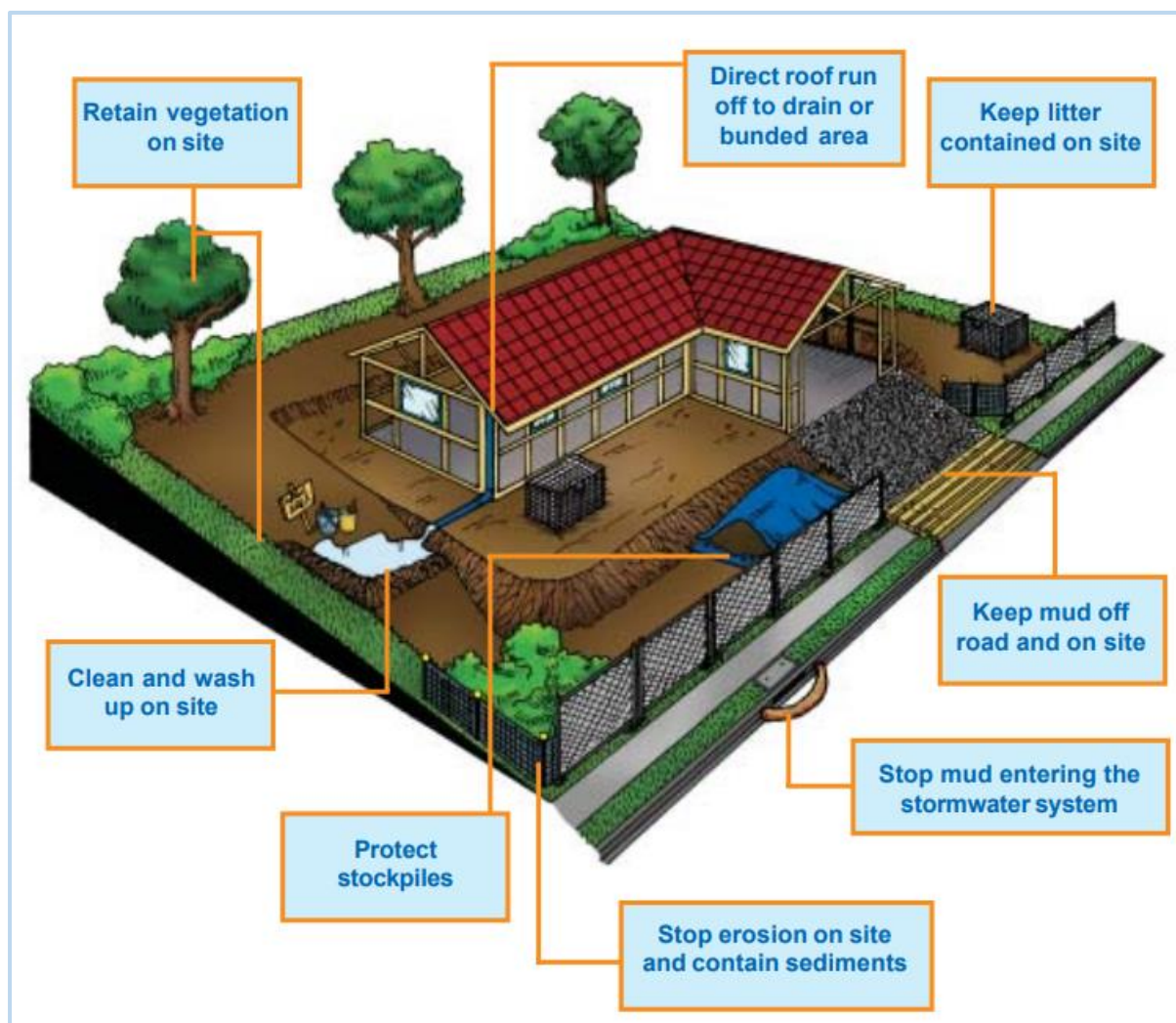


Figure 11: Site stormwater management considerations. Source: Melbourne Water – Keeping Our Stormwater Clean: A Builder's Guide

STORMWATER MAINTENANCE PROGRAMME

The proposed rainwater harvesting system will be maintained in accordance with the manufacturer's requirements. The building owner, body corporate or facility manager will be responsible for undertaking the routine maintenance and ensuring that the system is operating as designed.

The following specific maintenance activities will be required as a minimum:

- Roof and other rainfall collection areas are to be inspected regularly, at minimum every 3 months, to ensure they are kept free of pollutants, leaves and other debris;
- First flush devices should be cleaned at least every 6 months; and
- Routine maintenance as specified by the manufacturers for the hardware; pumps, tanks and filters.

Sludge layers and biofilms can be formed in the tanks walls. If water colour and smell become an issue, professional tank cleaners should be engaged.