



ecoresults

Sustainability Management Plan

+ Green Travel Plan

Report No: 2024-3795-SMP

Date: 20th January 2025

Address: 2-10 Clarke Street, Abbotsford VIC 3067

SMP

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	Date	Issue	Description	Consultant
Tracking	8 th August 2024	1	Original report issue	LL
	20 th January 2025	2	<ul style="list-style-type: none"> ▪ Updated to Council’s ESD Referral Response (PLN24/0680) dated 28.10.2024 ▪ Refer to page 23 – City of Yarra ESD Referral Response notes ▪ BESS Tool updated to BESS-9, Version 2.0.1 	LL

Project details

Project details	Property address	2-10 Clarke St, Abbotsford VIC 3067
	Project description	Retirement home development consisting of 60 apartments
	Council	City of Yarra
	Site area	3,900m ² approx.
	Plans assessed	Plans prepared by CHT Architects, dated 20/01/2025

Purpose and scope of report

EcoResults has been engaged as ESD consultants to prepare a Sustainability Management Plan (SMP) incorporating a Green Travel Plan (GTP) for the proposed development to ensure that the development adequately responds to the Yarra Planning Scheme Clause 15.01-2L-01 (ESD) and Clause 53.18 (WSUD).

- The purpose of this report is to detail how the proposed design and operation of the building, as detailed in the planning drawings and our comments and recommendations listed in this herein, satisfies both clauses.
- EcoResults has consulted extensively with the designer, planning consultant and other relevant sub-consultants on how best to incorporate sustainability principles in the proposed design, and to comply with the current benchmarks required.
- Sustainability outcomes have been assessed using the following benchmarking tools:
 - **ESD:** BESS
 - **WSUD:** STORM
 - **Energy Efficiency:** HERO NatHERS software
- Our assessment shows that the proposed development meets current best practice for ESD.
- This report should be attached to and read in conjunction with the town planning drawings as well as the BESS printouts in the Appendix.
- An in-depth list of all ESD commitments for this project is located on pages 4 - 6 of this report.

ESD schedule of commitments

All ESD measures listed below are commitments and should be shown/noted on plans

Energy	<ul style="list-style-type: none"> ▪ A minimum 7.5 -star average NatHERS rating for the dwellings, with no dwelling achieving less than 6 stars <ul style="list-style-type: none"> ○ Refer to pages 11-13 for details of preliminary energy ratings for 15 of the 60 dwellings
Lighting	<ul style="list-style-type: none"> ▪ LED downlights and other high efficiency light fittings to be used ▪ The maximum illumination power density (W/m²) in at least 90% of the relevant Building Class will be at least 20% lower than required by clause J7D3(1)(a) and Table J6.2a of the NCC 2022 Vol 1
Solar	<ul style="list-style-type: none"> ▪ 50 kW total solar system size (lesser of inverter and panel capacity) <ul style="list-style-type: none"> ○ Refer to roof plan for more details
Appliances	<ul style="list-style-type: none"> ▪ The development will be all-electric ▪ Reverse cycle heating and cooling systems ▪ Electric heat pump hot water system (multiple dwellings will share hot water system) ▪ Dishwasher with a minimum 3 Star WELS rating will be provided as part of the fit-out to each dwelling ▪ Washing machine with a minimum 3 Star WELS rating will be provided as part of the fit-out to each dwelling ▪ Clothes dryers with a minimum 3 star energy rating will be provided as part of the fit-out
Water & WSUD	<ul style="list-style-type: none"> ▪ 5 star WELS rated basin taps in kitchens and bathrooms ▪ 4 star WELS rated toilets plumbed to rainwater tank for flushing ▪ 4 star WELS rated shower heads (flow between 6.0 and 7.5L/min) ▪ Rainwater tank with a minimum capacity of 35,000 Litres to be dedicated to toilet flushing <ul style="list-style-type: none"> ○ Tanks will be connected to all GF + FF dwelling toilets only ▪ Rainwater tank with a minimum capacity of 15,000 Litres to be dedicated to garden irrigation ▪ Refer to page 14-17 for STORM report & WSUD measures

IEQ	<ul style="list-style-type: none"> ▪ The BESS in-built tools were used to assess the living areas and bedrooms of the apartments with an assumed VLT of 40%, results show: <ul style="list-style-type: none"> ○ 85% of the total number of living areas (including kitchens) achieve a daylight factor of greater than 1% to 90% of the floor area of each living area ○ 98% of the total number of bedrooms achieve a daylight factor of greater than 0.5% to 90% of the floor area in each room ▪ 93% of dwellings are effectively naturally ventilated <ul style="list-style-type: none"> ○ Refer to page 22 for Cross Flow Ventilation Diagrams
Transport	<ul style="list-style-type: none"> ▪ 20 x secure bike parking spaces for residents located basement level ▪ 8 x secure bike parking spaces for visitors located on ground level ▪ 4 x electric bike & 4 x electric scooter parking spaces on ground level ▪ 4 x EV charging points located basement level
Urban ecology	<ul style="list-style-type: none"> ▪ A tap and floor waste will be provided on every balcony/courtyard to encourage plants to be grown ▪ A green façade with climbing plants on a supported vertical system will be provided ▪ Indoor and outdoor communal spaces have been provided for residents to enjoy. These spaces encourage and recognise initiatives that facilitate social interaction between residents <ul style="list-style-type: none"> ○ Ground floor indoor communal area – 192m² ○ First floor indoor communal area – 157.5m² ▪ 15% of the site is covered in vegetation
Waste	<ul style="list-style-type: none"> ▪ Recycling facilities must be as convenient for occupants as facilities for general waste ▪ Food and garden waste bins will be provided within the basement waste room ▪ At least 70% of demolition and construction waste will be reused or recycled. For example: <ul style="list-style-type: none"> ○ Steel and metal items including roof sheet, window frames and other steel framing materials can be melted and reused within new steel products ○ Aluminium ○ Glass ○ Gypsum plasterboard ○ Timber can either be directly reused or turned into horticultural mulch ○ Brickwork, concrete slabs and asphalt can be crushed and used as aggregate for new concrete or road base and fill ○ Any bricks in good enough condition to be reused may be cleaned and re-sold as garden/paving supplies or crushed for backfill, aggregate and gravel

Management	<ul style="list-style-type: none"> ▪ Utility meters to be provided for all individual dwellings
Shading	<ul style="list-style-type: none"> ▪ North elevation <ul style="list-style-type: none"> ○ Ground floor – Level 02, fixed horizontal shading plate located above windows ○ Level 03 glazing, window shutters (SHO1) capable of restricting 70% of direct solar radiation <p>Refer to elevations showing existing shading effects of offset brickwork and, above mentioned additional shading devices</p> ▪ West elevation <ul style="list-style-type: none"> ○ Ground floor glazing shaded by pergolas ○ Level 01 – 02, fixed horizontal shading plate located above windows ○ Level 03 glazing, window shutters (SHO1) capable of restricting 70% of direct solar radiation <p>Refer to elevations showing existing shading effects of offset brickwork and, above mentioned additional shading devices</p> ▪ East elevation <ul style="list-style-type: none"> ○ East facing glazing will be partially shaded by the existing heritage buildings (see site plan). Internal blinds should be sufficient for glazing on the eastern facade

Implementation schedule

The ESD initiatives set out in this report will be coordinated by the Development Manager in conjunction with the listed project design team members

#	Requirement (Refer to ESD Schedule of Commitments above)	Responsibility	Stage
Coordination	Full Implementation of all ESD Commitments as per this SMP	Development Manager	All Stages
Building Fabric	NCC Reports for Building Approval	ESD Consultant (EcoResults)	Construction Documentation
	Drawings and specifications to reflect requirements of NCC Reports when completed	Architect Services Engineer	Construction Documentation
Materials	Specify materials in accordance with nominated schedule. Refer also to Building Materials section within this SMP for additional specific commitments	Architect Builder	Construction Documentation
Appliances	All appliances must be specified in line with SMP	Services Engineer Builder	Construction Documentation
Lighting	Specification of nominated energy efficiency lighting types to the relevant commitment (noting there may be a commitment over NCC requirements in the SMP). Refer to ESD Schedule of Commitments above for details	Building Services Engineer	Construction Documentation

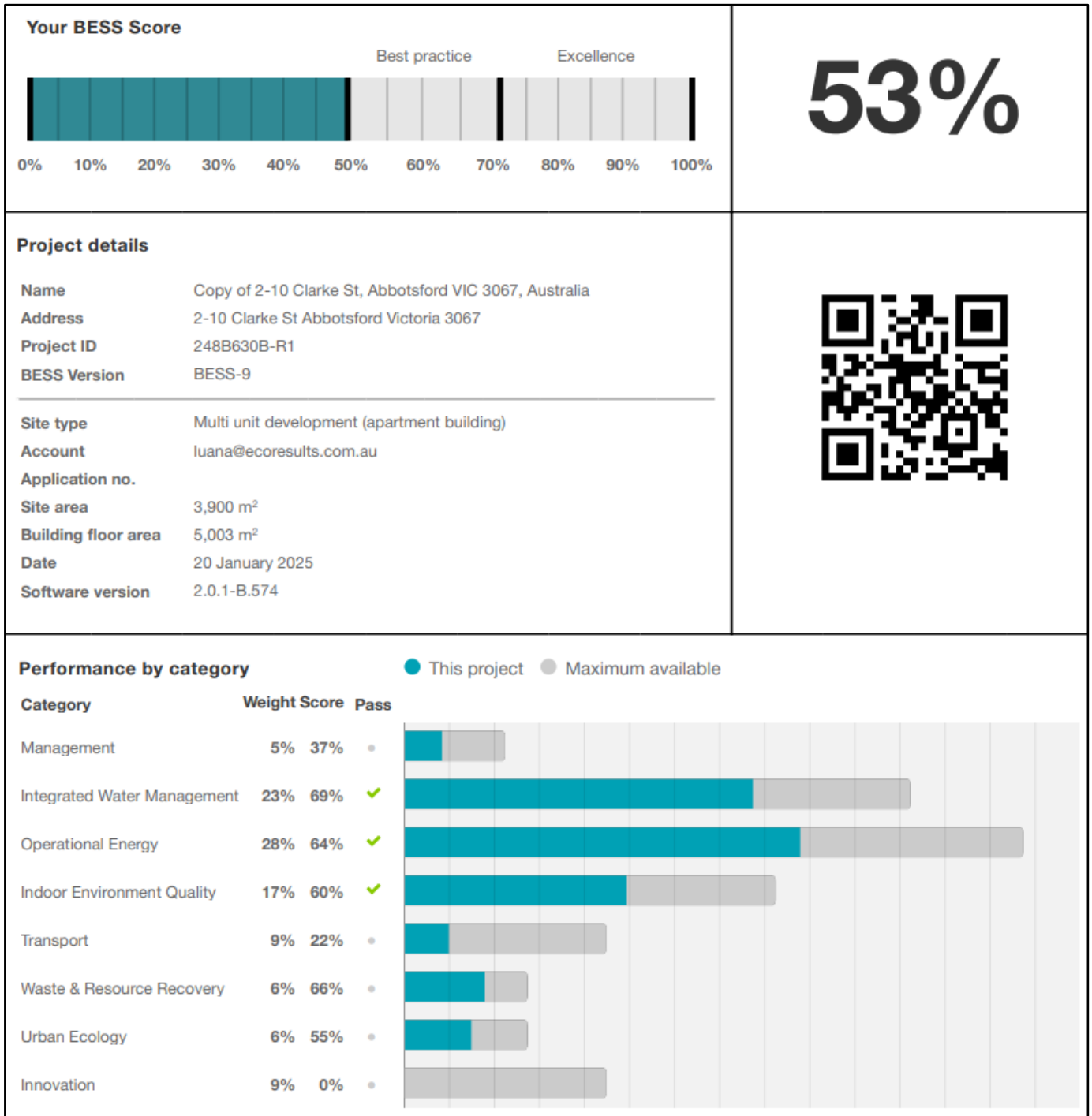
Stormwater	Specify all WSUD treatment measures required by this SMP	Services Engineer	Construction Documentation
Waste	Specify bin and associated waste management equipment in line with Waste Management Section within this SMP and Waste Management Plan (if available)	Architect Waste Management consultant	Construction Documentation Occupation
Water	Specify water fixtures and fittings in line with SMP. Refer to ESD Schedule of Commitments within this SMP for details	Architect Services Engineer	Construction Documentation
Transport	All Transport commitments must be specified in line with SMP	Architect Builder	Construction Documentation Occupation
Construction	All endorsed ESD Commitments to be implemented including any commitment to recycle demolition/construction waste	Builder	Construction
Commissioning	Specification to include performance standards for commissioning	Services Engineer	Construction Documentation
	Commission and tune all equipment in accordance with performance standards and targets	Services Contractor Independent Commissioning Agent (if applicable)	Pre-Occupancy Post-Occupancy

Confirmation	ESD Implementation Report confirming all ESD commitments are included as built. Please contact EcoResults prior to construction to confirm process	ESD Consultant (EcoResults)	Post-Construction Pre-Occupancy
Maintenance	Maintain all ESD measures in accordance with ESD commitments	Owners Corporation Building Manager	Occupancy

BESS scores for this project

BESS assessment scores are percentages. Best practice in ESD is defined as an overall 50% score, and WSUD 100%. The scores achieved for each category on this project are shown as a percentage, with Energy, Water and IEQ each requiring a score of 50% to pass and Stormwater requiring a score of 100%.

For the building to achieve the BESS and STORM scores listed, it must be constructed according to the planning drawings, as well as the specifications listed in the notes and BESS printouts in the Appendix.



Preliminary NatHERS energy rating results

- A sample of 15 preliminary NatHERS Energy Ratings have been generated using the Hero NatHERS Assessment tool to provide preliminary energy efficiency results for the development.
- A commitment has been made to achieve a 7.5 star average, with no dwelling achieving less than 6 stars which has been achieved as listed in the results schedule below.
 - The specifications can be adjusted at a later stage of the development, provided the commitment to a 7.5 star average continues to be achieved.
- Preliminary ratings are not to be used for building approval.

NatHERS Energy rating summary of results	Dwellings	No. Thermally similar	Conditioned floor area	Heating MJ/m ²	Cooling MJ/m ²	Total MJ/m ²	Star rating
	12	10	77.7	38.8	8.4	47.2	7.8
	13	1	79.7	47.2	8.6	55.8	7.3
	21	7	58.9	26.1	27.5	53.5	7.4
	22	1	57.4	30.2	32.9	63	6.9
	27	13	68.5	24.4	19.7	44.1	7.9
	35	0	96.7	44.4	28.6	73	6.4
	36	7	43.9	34.7	28.6	63.3	6.9
	39	0	94.8	28.7	20.2	48.9	7.7
	42	0	55.4	2.5	13.7	16.2	9.6
	43	0	82.8	9.6	15.6	25.3	8.9
	49	0	110.5	18.3	23.9	42.2	8.1
	51	6	65.8	25.3	29.8	55.1	7.3
	52	0	93.2	21.2	21.3	42.4	8.1
	55	0	87.4	23.5	19.7	43.2	8
56	0	95	30.1	22.8	52.9	7.4	
Weighted Average		68.1	29.4	21.2	50.6	7.6	

- NatHERS assessments comply with the following requirements for Climate Zone 21 (Melbourne)
- Maximum average total heating and cooling load allowed across all dwellings: 62 MJ/m² annually
 - Project achieves an average total heating and cooling load of 50.6 MJ/m² annually
- Maximum allowed total heating and cooling load for any individual dwelling: 81 MJ/m² annually
 - Project demonstrates a maximum total heating and cooling load of 73.0 MJ/m² annually for any individual dwelling
- Maximum average NCC heating/cooling loads limit allowed across all dwellings: 48/32 MJ/m² annually
 - Project achieves average total heating/cooling loads of 29.4/21.2 MJ/m² annually
- Maximum NCC heating/cooling load limit allowed for any individual dwellings: 55/38 MJ/m² annually
 - Project demonstrates maximum heating/cooling loads of 47.2/32.9 MJ/m² annually for any individual dwelling

NatHERS energy rating specifications

Roofs	Concrete Slab Roofs	<ul style="list-style-type: none"> R4.0 added insulation at ceiling level
	Ceiling Fans	<p>Apartments 35 and 51 and thermally similar</p> <ul style="list-style-type: none"> 2x 1200mm blade rotation diameter ceiling fans to main kitchen/living area 1x 1200mm blade rotation diameter ceiling fans to each bedroom
	Downlights	<ul style="list-style-type: none"> Downlights have been modelled according to the default values under NatHERS protocol
Walls	External Walls and Spandrel Panels (All types)	<ul style="list-style-type: none"> R2.7 added insulation
	Party Walls	<ul style="list-style-type: none"> R2.0 added insulation to each side (lightweight party walls)
	Internal Corridor Walls	<ul style="list-style-type: none"> R2.0 added insulation
	Apartment Internal Walls	<ul style="list-style-type: none"> No added insulation
Floors	Concrete Slab-on-Ground Floors	<ul style="list-style-type: none"> No added insulation
	Suspended Concrete Slab Floors over Carpark or External Air	<ul style="list-style-type: none"> R3.5 added insulation
	Suspended Concrete Slab Floors Between Levels	<ul style="list-style-type: none"> No added insulation
Glazing	All Glazing	<ul style="list-style-type: none"> All sliding and fixed glazing to have combined frame and glass values of $U=2.3$ and $SHGC=0.25$ All other glazing to have combined frame and glass values of $U=3.0$ and $SHGC=0.25$
	External Operable Shading	<ul style="list-style-type: none"> All west aspect fixed glazing to Apartment 35 to be provided with external operable shading capable of restricting 70% of direct solar radiation Window shutters (SH01) shown on plans to third floor dwellings to be capable of restricting a minimum of 70% of direct solar radiation
	Glazing Notes	<ul style="list-style-type: none"> Any windows may be used as long as the U-value does not exceed the values listed and the SHGC is within a 5% tolerance above or below the values listed

WSUD assessment | STORM rating

To comply with the Water Sensitive Urban Design objectives outlined in Clause 53.18 a STORM assessment has been conducted, which includes proposed rainwater capture and reuse in order to comply with Melbourne Water’s STORM assessment tool benchmarks.

A compliant STORM assessment meets the current best practice performance objectives for stormwater quality as contained in the Urban Stormwater Best Practice Environmental Management Guidelines (USBPEMG). We have noted the results and required treatment measures listed below.



STORM Rating Report

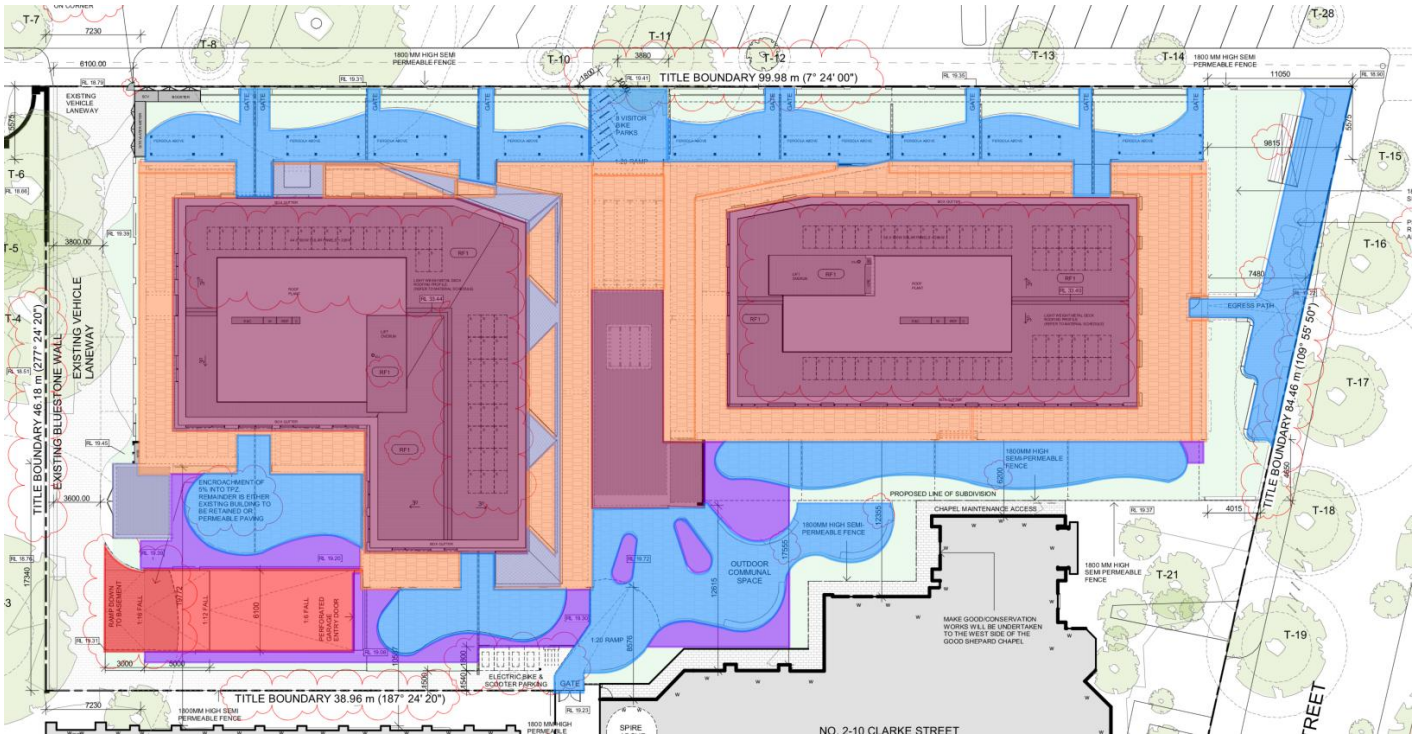
TransactionID: 0
 Municipality: YARRA
 Rainfall Station: YARRA
 Address: 2-10 CLARKE ST
 ABBOTSFORD
 VIC
 VIC
 Assessor: ECORERESULTS
 Development Type: Residential - Multiunit
 Allotment Site (m2): 3,912.00
 STORM Rating %: 101







Description	Impervious Area (m2)	Treatment Type	Treatment Area/Volume (m2 or L)	Occupants / Number Of Bedrooms	Treatment %	Tank Water Supply Reliability (%)
Balcony to irrigation tanks	723.00	Rainwater Tank	15,000.00	30	151.80	80.10
Basement driveway	123.00	None	0.00	0	0.00	0.00
Paving	806.00	None	0.00	0	0.00	0.00
Roof to RWT	1,207.00	Rainwater Tank	35,000.00	60	168.00	82.00
Roof untreated	89.00	None	0.00	0	0.00	0.00
Surfaces above basement	151.00	None	0.00	0	0.00	0.00

Compliance statement

- The project score of 101% means that the proposed development meets the standard that is considered best environmental practice for WSUD.
- Plans and design details to be shown on plans by designer. See below for more information and contact EcoResults with any queries on compliance.

STORM markup



Impermeable Areas			
	Description	Quantity	Unit
	Balcony to irrigation tanks	723	sq m
	Basement driveway	123	sq m
	Paving	806	sq m
	Roof to RWT	1,207	sq m
	Roof Untreated	89	sq m
	Surfaces Above Basement	151	sq m

WSUD

WSUD requirements

- Runoff from building roofs [1,207m²] to be diverted to 35,000L rainwater tanks dedicated to reuse
 - Tank will be connected to all GF + FF dwelling toilets for flushing
 - Tank(s) and any associated filtration to be specified by civil/services engineer so as to be appropriate for the intended usage of harvested water
 - Ensure that selected fittings and appliances are suitable for the Rainwater/filtration system specified
 - The tank may be connected to other uses, e.g. outdoor taps, laundry etc, but this is not required to achieve the STORM score
 - The tank capacity may be achieved by installing several independent tanks as long as they are connected to operate in series as if they were one tank
- Runoff from balcony areas [723m²] to be diverted to 15,000L rainwater tanks dedicated to year-round irrigation of selected garden area [90m² minimum], this has been represented with an occupancy of 30 in STORM to reflect a 600L demand each day
- The detailed, site specific design of WSUD measures should be undertaken by a suitably qualified person

Note:

- Refer to maintenance program for WSUD measures below
- All areas measured in STORM are in a horizontal plan and open to sky

Maintenance program

Rainwater Tanks

- The project's hydraulic/services engineers will be responsible for the design of the tanks and rainwater reticulation, shall inform the building facility manager and/or owners corporation in writing, of the required maintenance tasks to keep the system operational including:
 - Regular inspections of the tank(s), pump(s), reticulation system and toilets to ensure that the system is operating for toilet flushing as designed
 - Periodic cleaning and major maintenance of the tank(s), pump(s) and reticulation system to ensure the long term viability of the system
- The building facility manager and/or owners corporation shall include on their building maintenance schedule the required maintenance tasks specified by the hydraulic/services engineers at the required intervals.

Stormwater construction site management plan

During the construction phase, the key pollutants at risk of entering the stormwater system include:

- Sediments (soil, sand, gravel and concrete washings); and
- Litter, debris etc

These pollutants arise from factors such as dirt from construction vehicles, stockpiles located close to surface runoff flow paths, and surface runoff from disturbed areas during earthmoving and construction works. It is therefore important to have measures in place that either prevent or minimise the pollutant loads entering the stormwater system during construction.

To mitigate the impacts of the above pollutants on the stormwater system, the following stormwater management strategies will be implemented during the construction phase, as appropriate:

- A focus on erosion management and reduction, through measures such as minimising the amount of earth destabilised at one time, retaining existing vegetation and utilising stabilisation matting etc.
- Uncontaminated stormwater will be directed away from the site using flow diversion devices to reduce the volume of stormwater that reaches the destabilised areas of the site.
- Installation of on-site sediment control measures. All installed control measures shall be regularly inspected & maintained to ensure their effectiveness.
- Litter bins with a lid will be used to prevent litter from getting blown away and entering stormwater drains

Additionally, the following work practices shall be adopted to reduce stormwater pollution:

- Site induction by the head contractor/builder to make personnel aware of stormwater management measures in place.
- Employ suitable measures to reduce mud being carried off-site into the roadways such as limiting site access to vehicles, installing a rumble grid/gravel/crushed-rock driveway (or equivalent measure) to provide clean access for delivery vehicles, manual wheel and tyre washing etc.
- Safe handling and storage of chemicals, paints, oils and other elements that could wash off-site to prevent them from entering stormwater drains.
- Where practicable, stockpiles will be covered, located within the site's fence, away from any drainage paths and up-slope of any sediment barriers.


Refer to <https://www.melbournewater.com.au/building-and-works/stormwater-management/options-treating-stormwater/stormwater-quality-objectives> for details of the minimum design requirements which are binding on all developments during the construction phase.

The measures presented above will reduce the pollutants entering the stormwater system from the site during construction works. The information above may be included in any broader Construction Management Plan (CMP) which is prepared for this project and can be updated to account for additional site-specific WSUD management requirements as needed. Furthermore, the initiatives are consistent with Standard W3 within Clause 53.18-6 of the Yarra Planning Scheme.

Green travel plan (GTP)

Issue Assessment results and design response


Walk Score



Walk Score
85

Very Walkable

Most errands can be accomplished on foot.



Transit Score
76

Excellent Transit

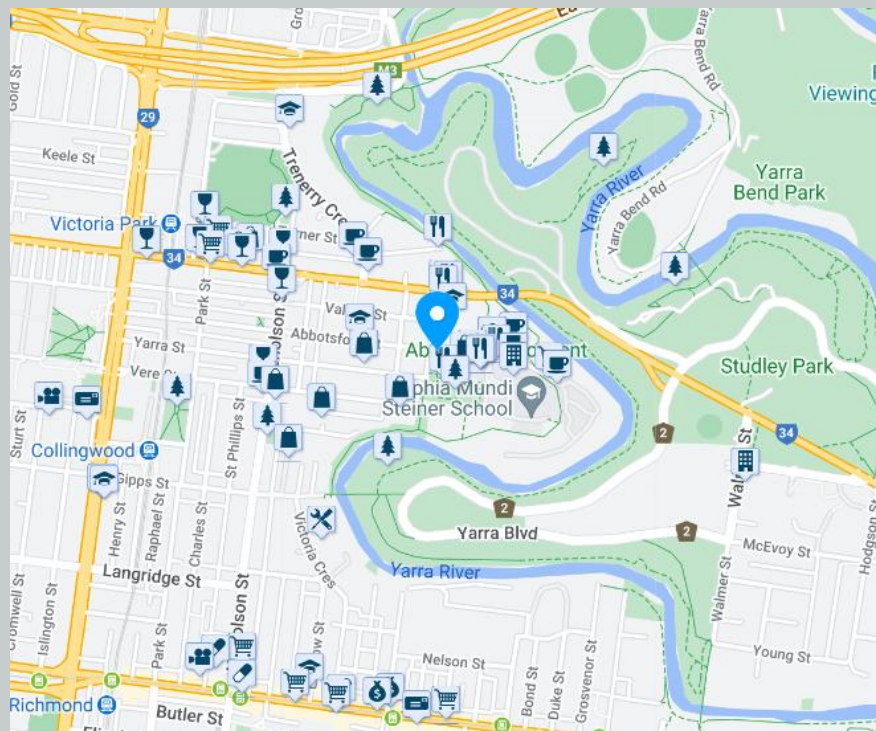
Transit is convenient for most trips.

www.walkscore.com

Proximity to Amenities

This location is in the Abbotsford neighbourhood in Melbourne. Nearby parks include Convent Foral Gardens and Victoria Park Railway

Nearby to the development are Restaurants, Cafes, Pharmacies, Banks + ATMs and Post Office. See map below – the site is shown as a blue pin



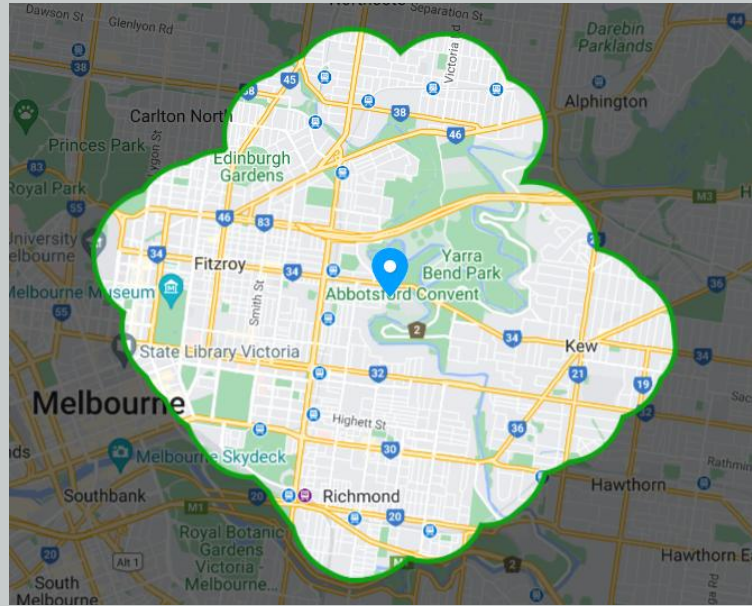
Source: All images within this GTP are from www.walkscore.com unless otherwise specified

Transport

Bike Storage and Accessibility

The development is providing 28 bike parking spaces in total. 20 spaces will be for residents, and 8 spaces will be for visitors. These spaces are aimed at encouraging the use of alternative transport, thus reducing traffic congestion and pollution

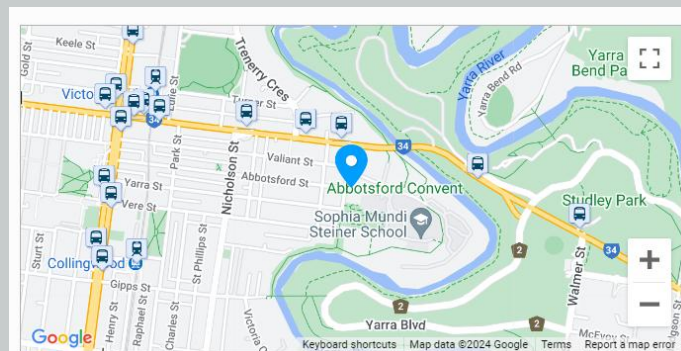
The map below shows how far you can ride a bike from the development in 20 minutes



Transit Score

The transit score for the development is 76 which is classified as Excellent Transit, meaning public transport is convenient for most trips

The development is 800 meters from the Victoria Park Railway Station, and 200m from several bus lines



Rail lines:

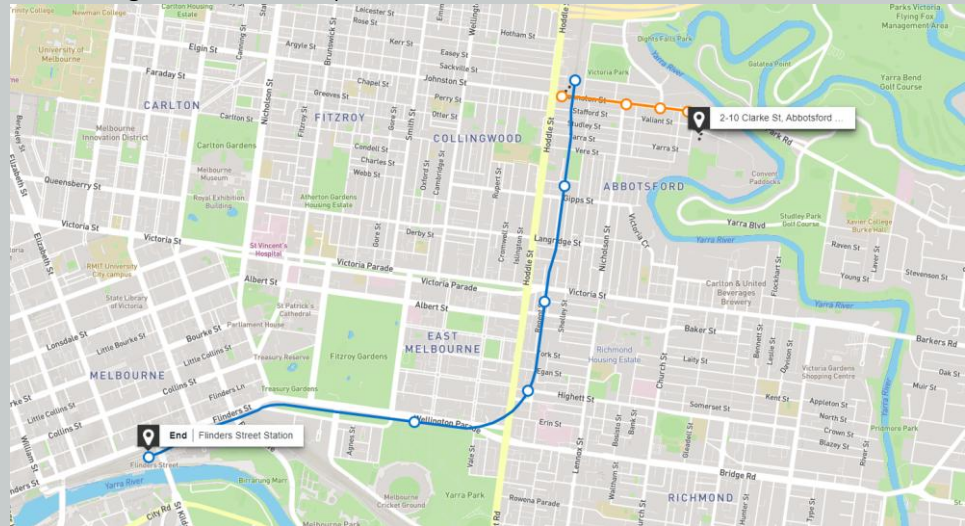
Hurstbridge City (Flinders St...)	0.8 km	Mernda Mernda - City (Flind...	0.8 km
109 Port Melbourne - Box Hill	0.9 km	12 Victoria Gardens - St Kild...	0.9 km
78 Balaclava via Prahran - N...	1.0 km		

Bus lines:

200 City (Queen St) - Bulleen	0.2 km	207 City (Queen St) - Donca...	0.2 km
202 City (Lonsdale St) - Yarr...	0.2 km	246 Clifton Hill - Elsterwick	0.8 km
309 City (Queen St) - Donvale	0.8 km	302 City (Lonsdale St) - Box ...	0.8 km
305 City (King/Lonsdale Sts) ...	0.8 km	906 City (King/Lonsdale Sts) ...	0.8 km
905 City (King/Lonsdale Sts) ...	0.8 km	304 City (Lonsdale St) - Don...	0.8 km

Travelling to Melbourne by Public Transport

A trip from the development to Melbourne CBD (Flinders Street Station) using public transport is approximately 22 mins. This includes 10 minutes of walking from connecting bus lines/railway station



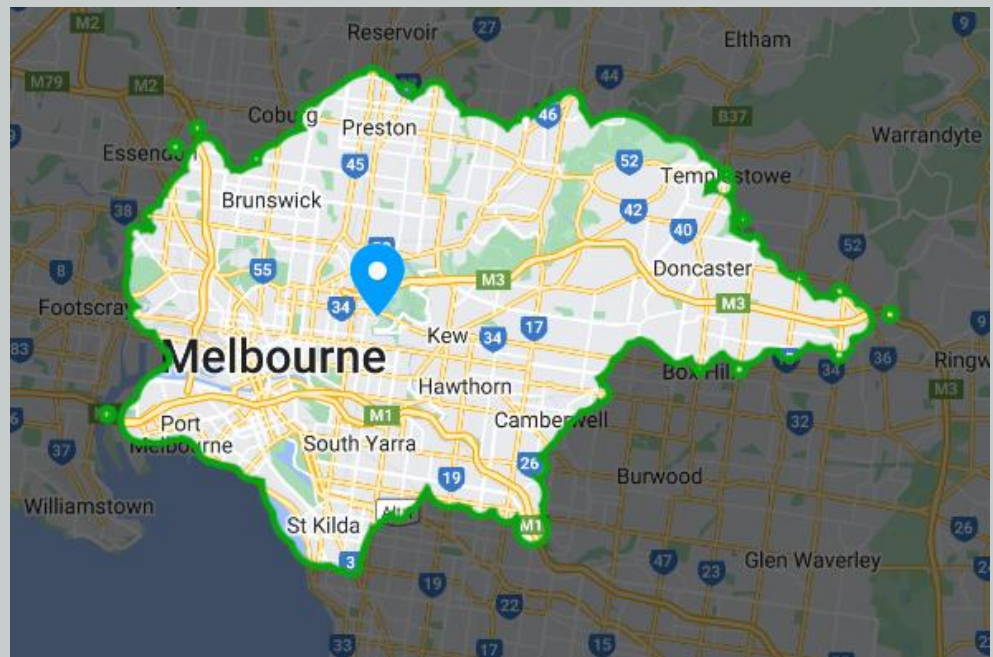
Source: PTV.com.au

Car Spaces/ Electric Vehicle Charging Infrastructure

The development will be providing:

- 69 x car parking spaces
- 4 x EV charging spaces

The map below shows how far you can drive from the site in 15 minutes

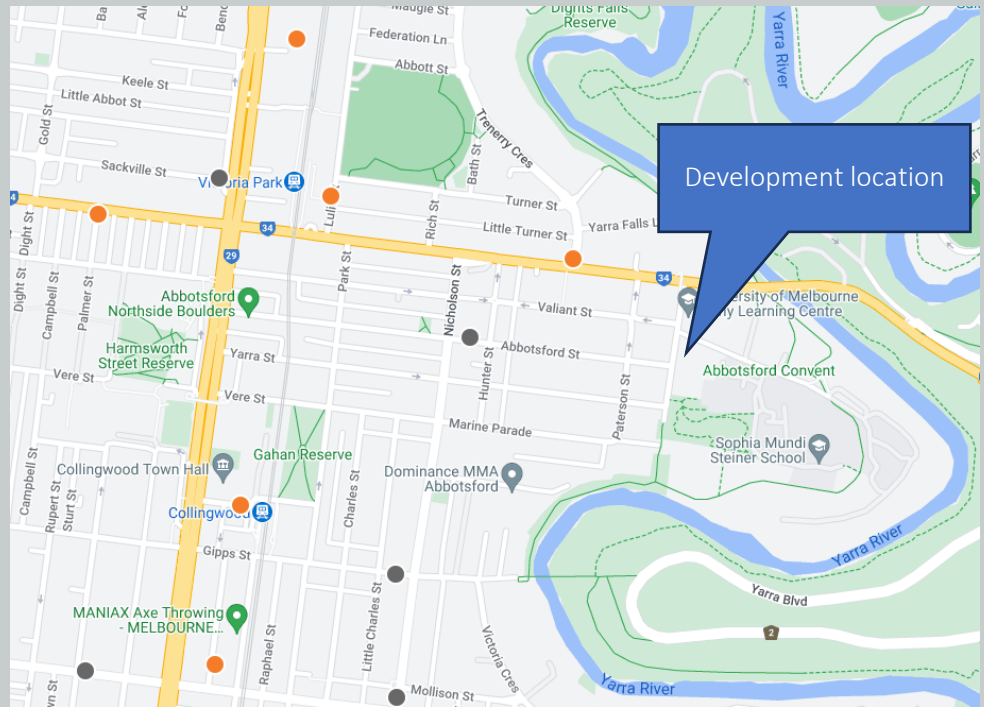


Share Car Availability

Car sharing services provide flexibility and convenience, as well as providing significant environmental benefits

Several car sharing companies are available in Yarra including Flexicar, GoGet, and Green ShareCar

For example, GoGet has 6 car pods within 3-10mins of the development – car pod shown as orange dot



Goget.com.au

Cross flow ventilation diagrams

To achieve natural cross flow ventilation points in BESS all habitable rooms (living areas and bedrooms) must meet the following rules:

- A breeze path between 2 ventilation openings either within the room or from one room to another.
- Breeze path length less than 15m measured between ventilation openings and around internal walls, obstructions & partitions.
- Ventilation openings located either in opposite or adjacent external walls or an external wall and an operable skylight.
- Size of ventilation openings greater than 2% of total floor area or 1m², whichever is greater. The opening is the maximum allowable clear open area for the window. ie if floor area of room is 55m² then clear open area of window / door must be at least 1.1m²
- No more than 1 doorway or opening <2m² between the ventilation openings.
- Where the breeze path travels through an internal door, that door must be provided with door catches.
- If on adjacent walls, ventilation openings must be at least 3m apart at their closest point. This is to ensure the space has reasonable ventilation throughout and not just in one corner.
- If relying on a courtyard adjacent to a ventilation opening the courtyard must have a minimum depth of 3m from the window or be a minimum size of 9m²

Single-sided ventilation

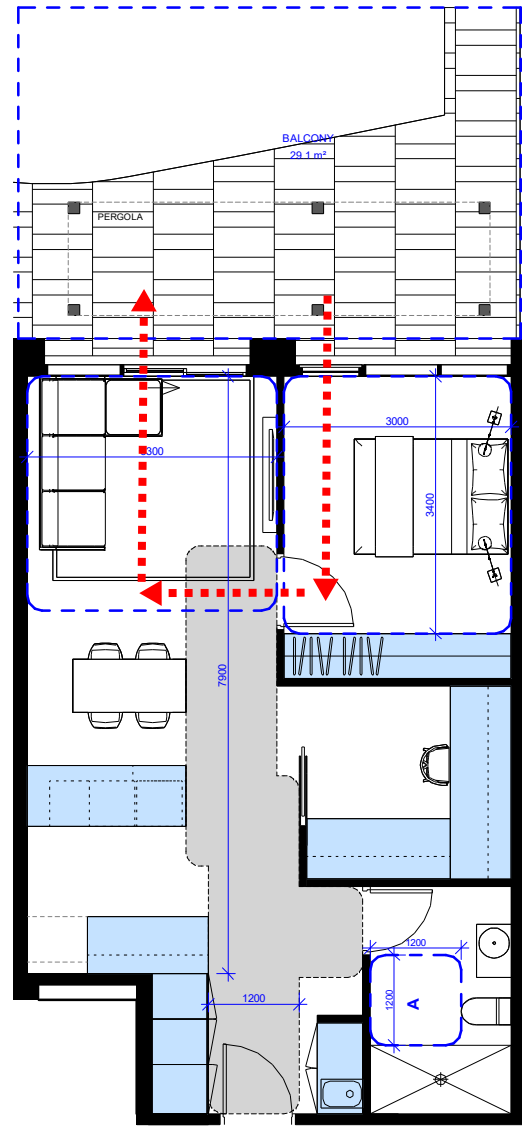
- Maximum permissible depth of room 5m.
- Separated openings high and low or split across the width of the room/facade, each 5% of the floor area are preferred.

Total living + bedrooms areas = 60

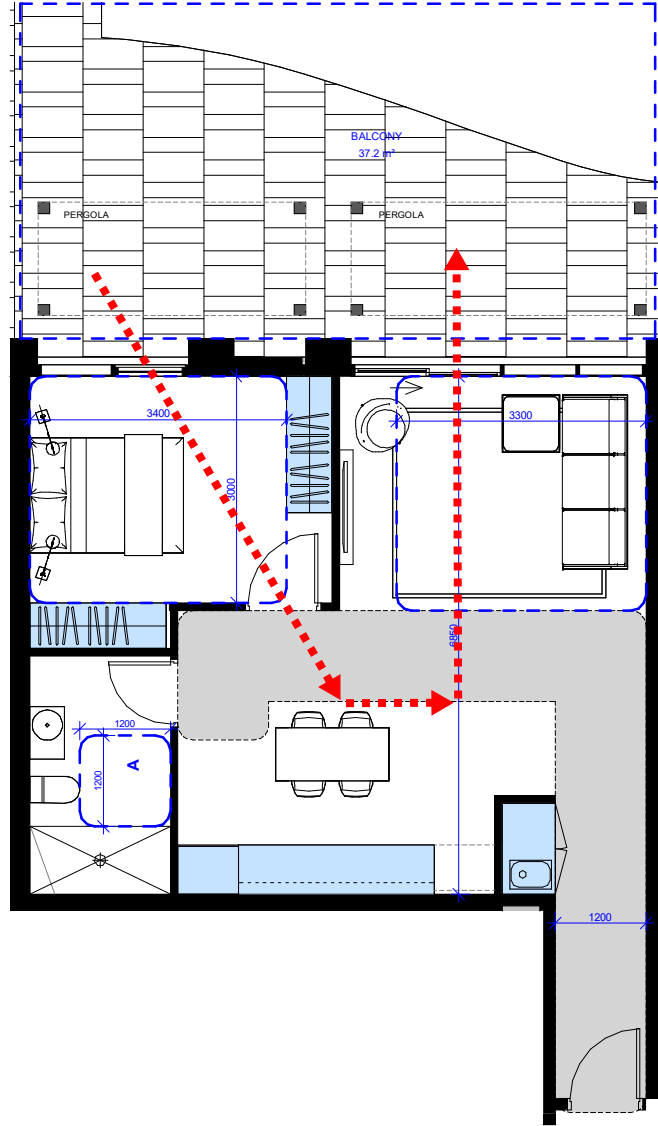
Total passing living + bedrooms areas = 56

Passing percentage = 93%

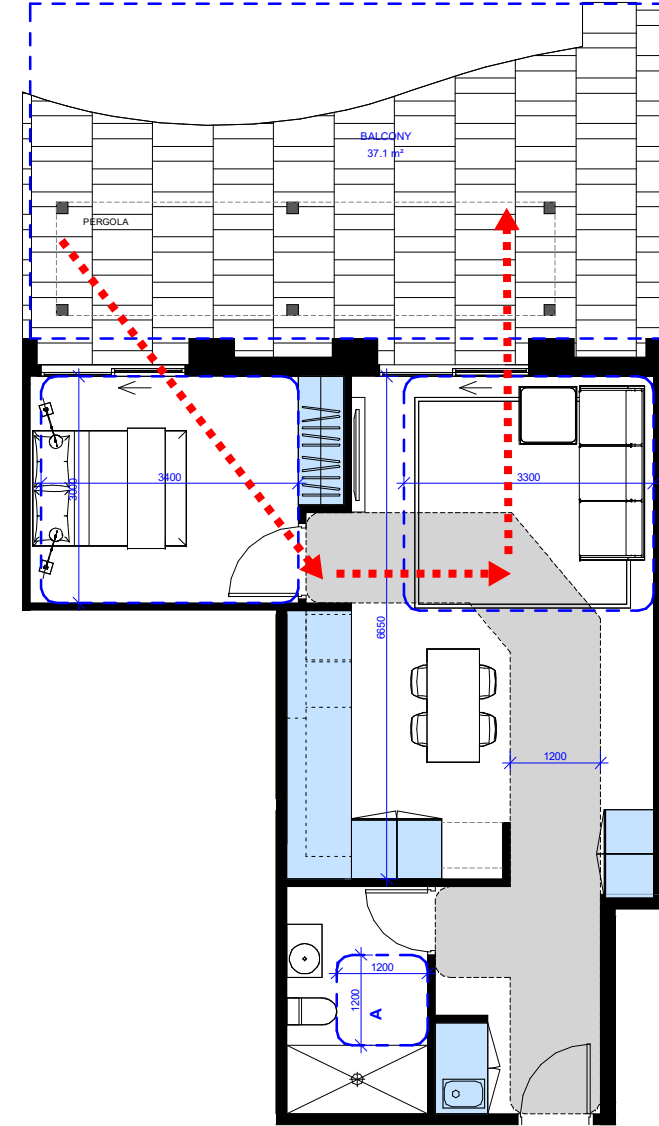
BREEZE PATH <15m SHOWN IN RED



1 TYPE 01 - 1B1B+S
SCALE 1:50



2 TYPE 02 - 1B1B
SCALE 1:50



3 TYPE 03 - 1B1B
SCALE 1:50

1B1B - TYPE 1 INTERNAL STORAGE SCHEDULE

CASEWORK	3.3 m ²
ISLAND BENCH	0.9 m ²
KITCHEN BENCH	2.9 m ²
LAUNDRY	1.5 m ²
WARDROBE	4.9 m ²
TOTAL INTERNAL STORAGE	13.4 m ²

1B1B - TYPE 2 INTERNAL STORAGE SCHEDULE

CASEWORK	1.2 m ²
KITCHEN BENCH	1.7 m ²
LAUNDRY	1.5 m ²
WARDROBE	5.8 m ²
TOTAL INTERNAL STORAGE	10.3 m ²

1B1B - TYPE 3 INTERNAL STORAGE SCHEDULE

CASEWORK	4.1 m ²
ISLAND BENCH	2.1 m ²
LAUNDRY	1.5 m ²
TOTAL INTERNAL STORAGE	7.7 m ²

APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 01	GROUND FLOOR	Yes	Yes	Yes	Yes	Yes	Yes	No

APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 02	GROUND FLOOR	Yes	Yes	Yes	Yes	Yes	Yes	No

APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 03	GROUND FLOOR	Yes	Yes	Yes	Yes	Yes	Yes	No

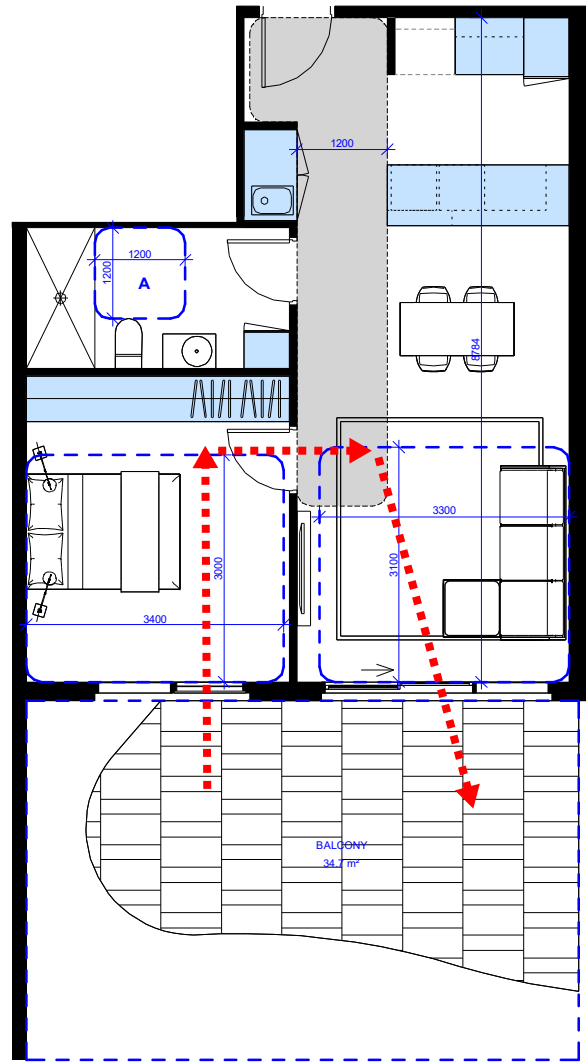
NOTES:
DOORS: ALL APARTMENT ENTRANCE DOORS, ACCESSIBLE BATHROOMS DOORS & MASTER BEDROOM DOORS SHALL PROVIDE A CLEAR OPENING WIDTH OF AT LEAST 800MM & IN THE CASE OF DESIGN OPTION 5, SHALL BE FITTED WITH READILY REMOVABLE HINGES.
BALCONY SIZES: BALCONY SIZES VARY ON SOME APARTMENT TYPES SHOWN. THE MINIMUM BALCONY SIZE HAS BEEN SHOWN TO ILLUSTRATE COMPLIANCE.
CROSS VENTILATION: PATHS INDICATED ARE MIN 5M & MAX 18M INTERNAL LENGTH.
BETTER APARTMENT STANDARDS:
STANDARD D18: ACCESSIBILITY ASSESSMENT
STANDARD D20: P.O.S ASSESSMENT
STANDARD D21: STORAGE ASSESSMENT
STANDARD D26: ROOM SIZE ASSESSMENT
STANDARD D27: ROOM DEPTH ASSESSMENT
STANDARD D28: WINDOWS ASSESSMENT
STANDARD D29: CROSS VENTILATION ASSESSMENT

PRELIMINARY | NOT FOR CONSTRUCTION

20031-14/01/2025 9:15:35 AM

BREEZE PATH <15m SHOWN IN RED

NOTES:
 DOORS:
 ALL APARTMENT ENTRANCE DOORS, ACCESSIBLE BATHROOMS DOORS & MASTER BEDROOM DOORS SHALL PROVIDE A CLEAR OPENING WIDTH OF AT LEAST 800MM & IN THE CASE OF DESIGN OPTION 6, SHALL BE FITTED WITH READILY REMOVABLE HINGES.
 BALCONY SIZES:
 BALCONY SIZES VARY ON SOME APARTMENT TYPES SHOWN. THE MINIMUM BALCONY SIZE HAS BEEN SHOWN TO ILLUSTRATE COMPLIANCE.
 CROSS VENTILATION:
 PATHS INDICATED ARE MIN 5M & MAX 18M INTERNAL LENGTH.
 BETTER APARTMENT STANDARDS:
 STANDARD D18: ACCESSIBILITY ASSESSMENT
 STANDARD D20: P.O.S ASSESSMENT
 STANDARD D21: STORAGE ASSESSMENT
 STANDARD D26: ROOM SIZE ASSESSMENT
 STANDARD D27: ROOM DEPTH ASSESSMENT
 STANDARD D28: WINDOWS ASSESSMENT
 STANDARD D29: CROSS VENTILATION ASSESSMENT

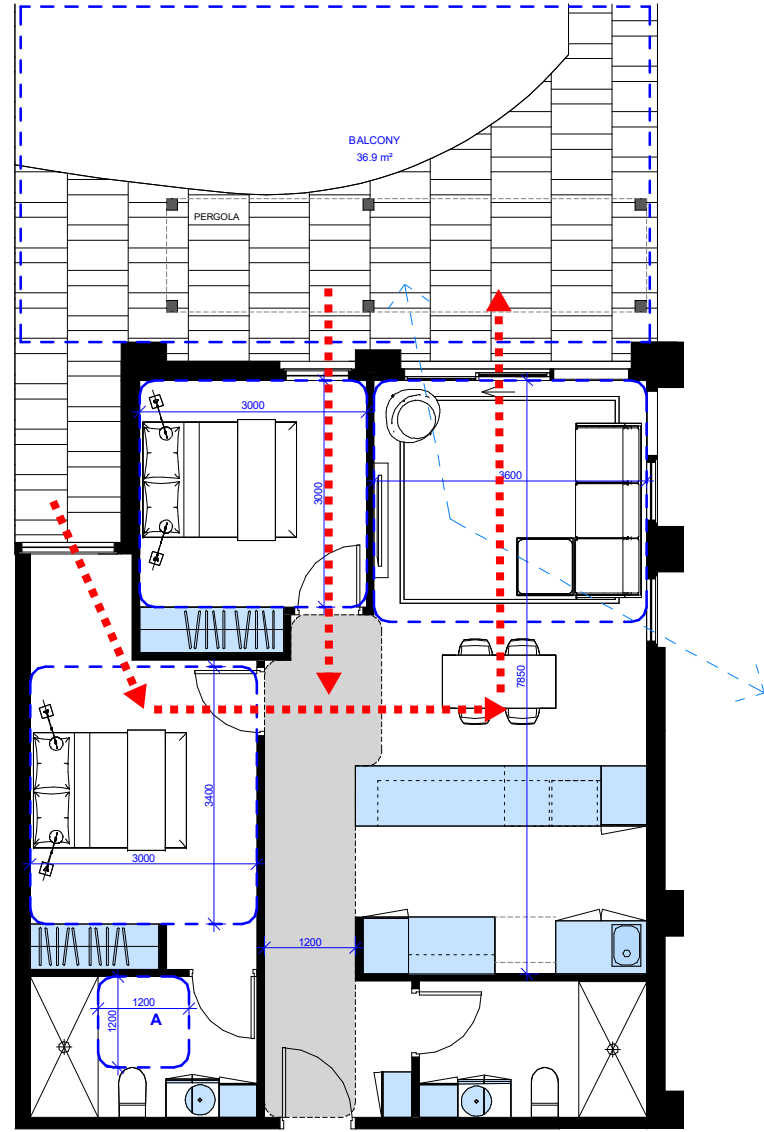


1 TYPE 04 - 1B1B
 SCALE 1 : 50

1B1B - TYPE 4 INTERNAL STORAGE SCHEDULE

CASEWORK	1.9 m²
ISLAND BENCH	1.1 m²
KITCHEN BENCH	0.5 m²
LAUNDRY	1.5 m²
WARDROBE	5.6 m²
TOTAL INTERNAL STORAGE	10.6 m²

APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 04	GROUND FLOOR	Yes	Yes	Yes	Yes	Yes	Yes	No

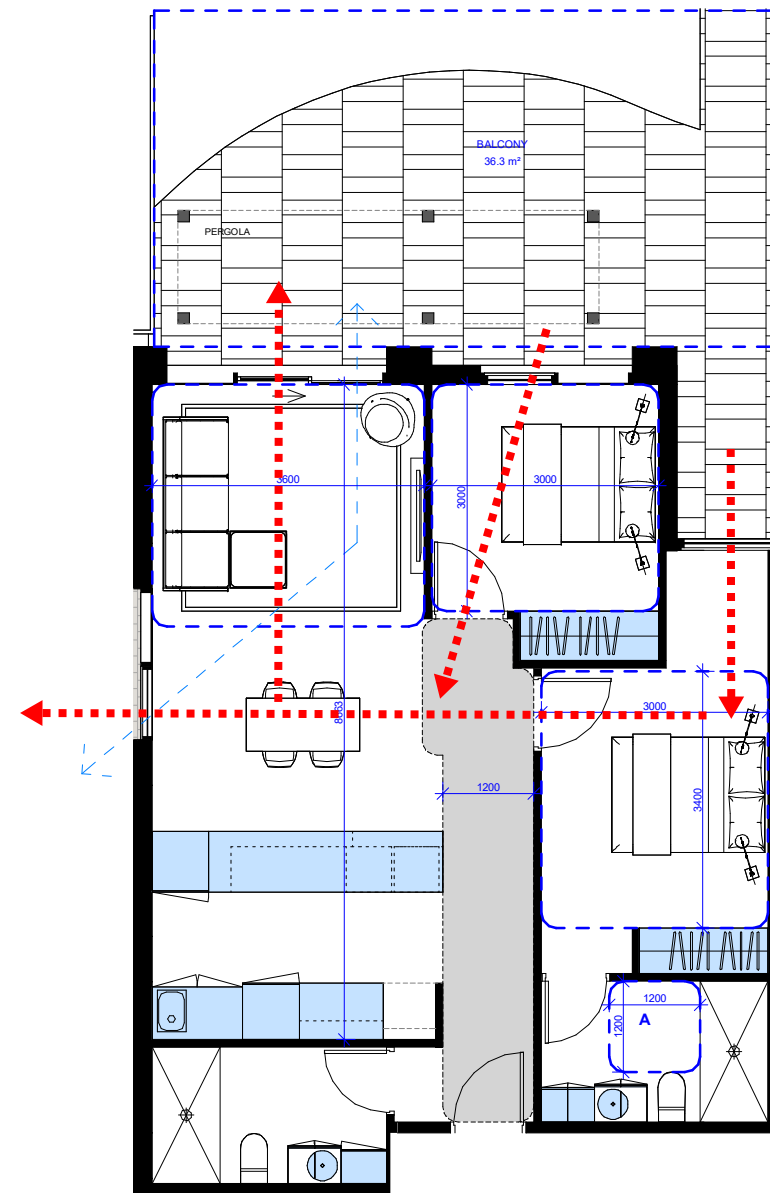


2 TYPE 05 - 2B2B
 SCALE 1 : 50

2B2B - TYPE 5 INTERNAL STORAGE SCHEDULE

CASEWORK	4.3 m²
ISLAND BENCH	1.7 m²
KITCHEN BENCH	0.7 m²
LAUNDRY	1.5 m²
WARDROBE	5.8 m²
TOTAL INTERNAL STORAGE	14.0 m²

APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 05	GROUND FLOOR	Yes	Yes	Yes	Yes	Yes	Yes	Yes
APT 05	GROUND FLOOR	Yes	Yes	Yes	Yes	Yes	Yes	No
APT 05	GROUND FLOOR	Yes	Yes	Yes	Yes	Yes	Yes	No
APT 05	GROUND FLOOR	Yes	Yes	Yes	Yes	Yes	Yes	No
APT 05	GROUND FLOOR	Yes	Yes	Yes	Yes	Yes	Yes	No



3 TYPE 06 - 2B2B
 SCALE 1 : 50

2B2B - TYPE 6 INTERNAL STORAGE SCHEDULE

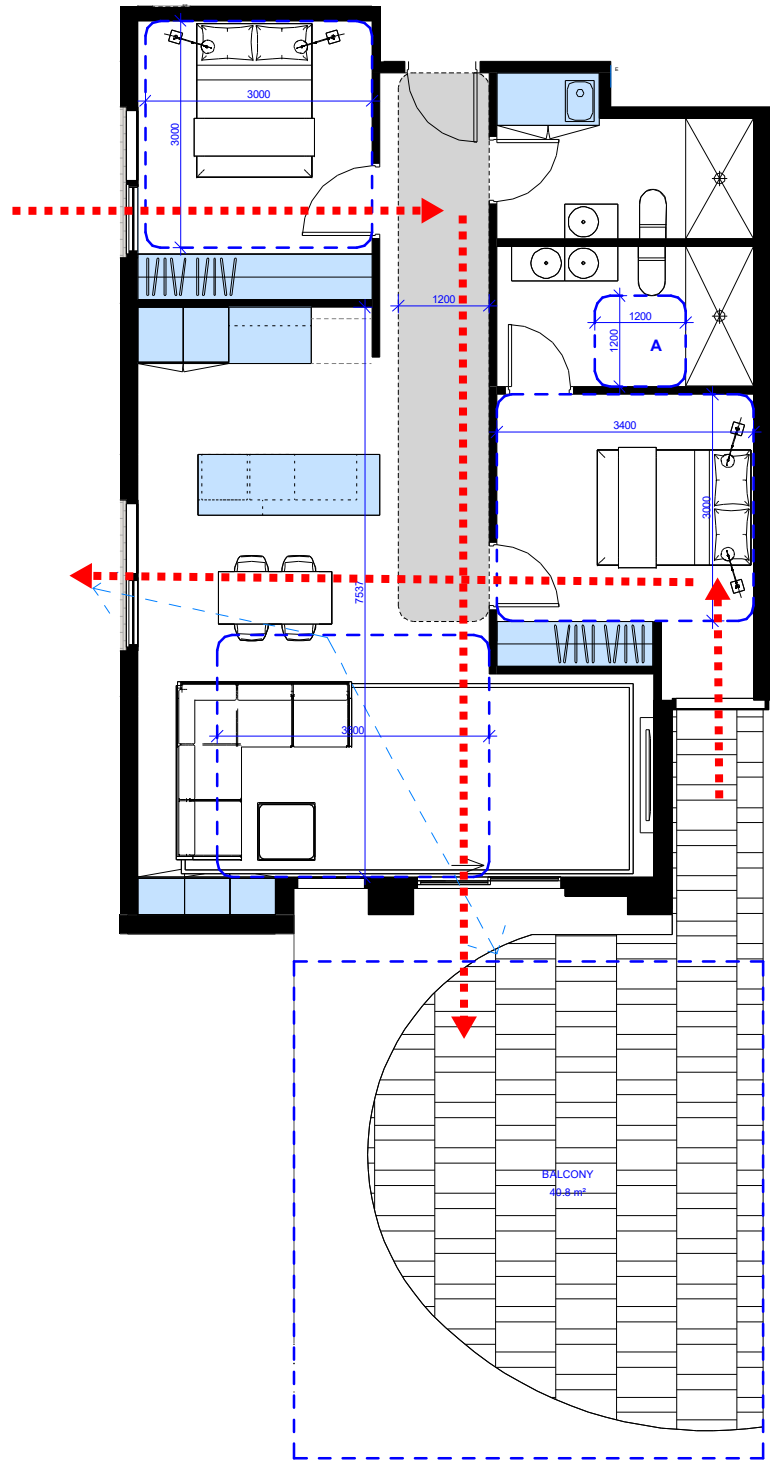
CASEWORK	4.6 m²
ISLAND BENCH	1.6 m²
KITCHEN BENCH	0.6 m²
LAUNDRY	1.5 m²
WARDROBE	6.0 m²
TOTAL INTERNAL STORAGE	14.3 m²

APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 06	GROUND FLOOR	Yes	Yes	Yes	Yes	Yes	Yes	Yes

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BREEZE PATH <15m SHOWN IN RED

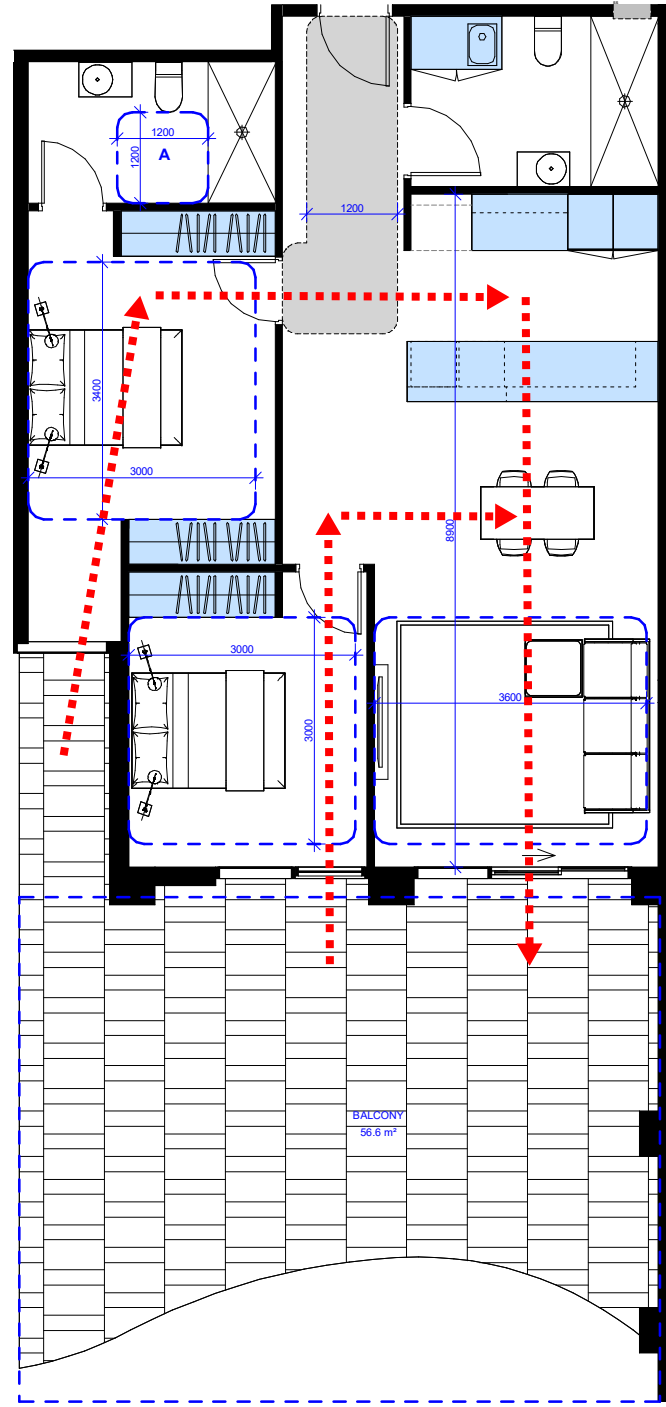


1 TYPE 07 - 2B2B
SCALE 1:50

2B2B - TYPE 7 INTERNAL STORAGE SCHEDULE

CASEWORK	4.3 m²
ISLAND BENCH	1.1 m²
KITCHEN BENCH	0.6 m²
LAUNDRY	1.8 m²
WARDROBE	8.5 m²
TOTAL INTERNAL STORAGE	16.3 m²

APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 07	GROUND FLOOR	Yes	Yes	Yes	Yes	Yes	Yes	Yes

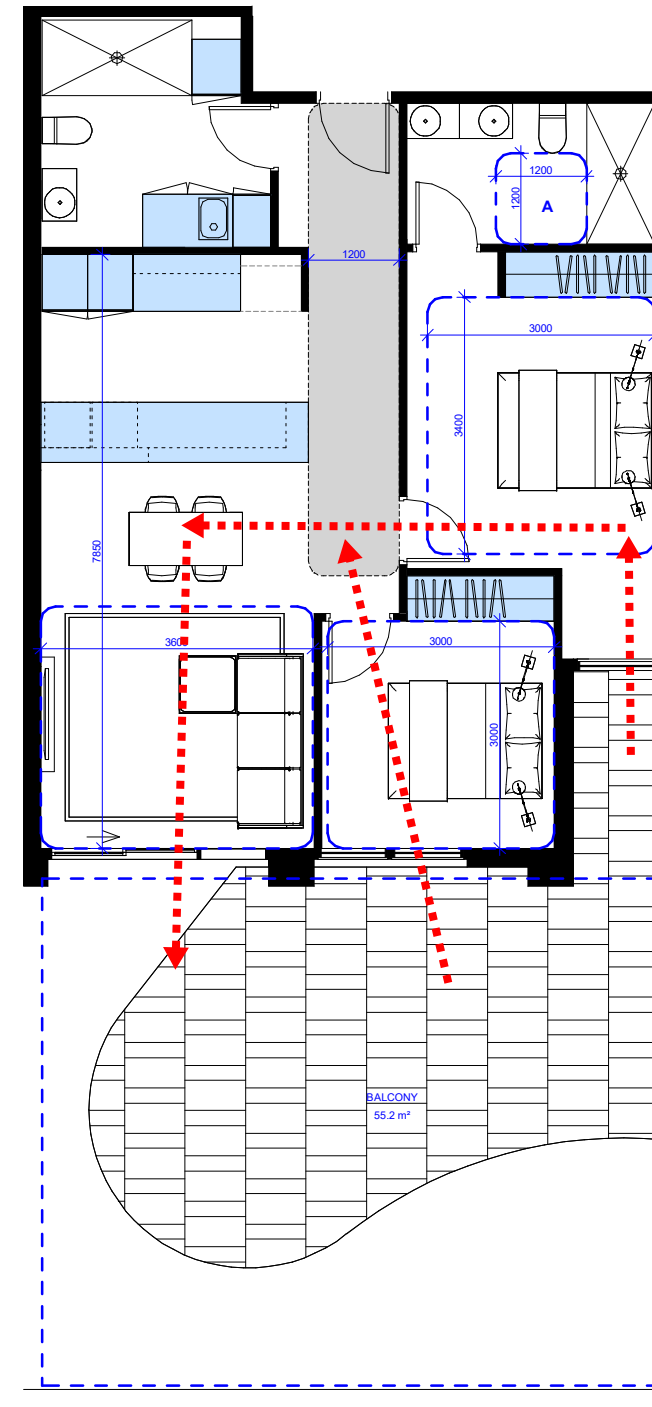


2 TYPE 08 - 2B2B
SCALE 1:50

2B2B - TYPE 8 INTERNAL STORAGE SCHEDULE

CASEWORK	2.2 m²
ISLAND BENCH	1.7 m²
KITCHEN BENCH	0.8 m²
LAUNDRY	1.5 m²
WARDROBE	9.6 m²
TOTAL INTERNAL STORAGE	15.7 m²

APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 08	GROUND FLOOR	Yes	Yes	Yes	Yes	Yes	Yes	No



3 TYPE 09 - 2B2B
SCALE 1:50

2B2B - TYPE 9 INTERNAL STORAGE SCHEDULE

CASEWORK	4.2 m²
ISLAND BENCH	1.9 m²
KITCHEN BENCH	0.9 m²
LAUNDRY	1.5 m²
WARDROBE	6.4 m²
TOTAL INTERNAL STORAGE	14.8 m²

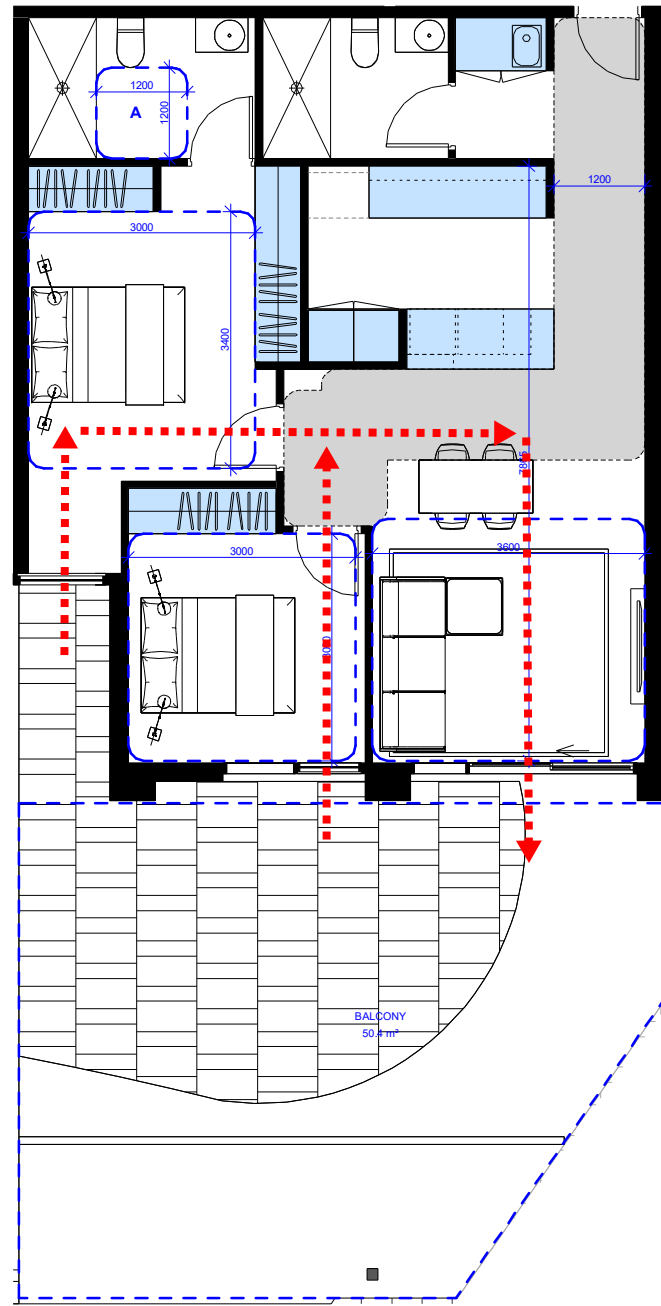
APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 09	GROUND FLOOR	Yes	Yes	Yes	Yes	Yes	Yes	No

NOTES:
DOORS: ALL APARTMENT ENTRANCE DOORS, ACCESSIBLE BATHROOMS DOORS & MASTER BEDROOM DOORS SHALL PROVIDE A CLEAR OPENING WIDTH OF AT LEAST 800MM & IN THE CASE OF DESIGN OPTION 6, SHALL BE FITTED WITH READILY REMOVABLE HINGES.
BALCONY SIZES: BALCONY SIZES VARY ON SOME APARTMENT TYPES SHOWN. THE MINIMUM BALCONY SIZE HAS BEEN SHOWN TO ILLUSTRATE COMPLIANCE.
CROSS VENTILATION: PATHS INDICATED ARE MIN 5M & MAX 18M INTERNAL LENGTH.
BETTER APARTMENT STANDARDS:
STANDARD D18: ACCESSIBILITY ASSESSMENT
STANDARD D20: P.O.S ASSESSMENT
STANDARD D21: STORAGE ASSESSMENT
STANDARD D26: ROOM SIZE ASSESSMENT
STANDARD D27: ROOM DEPTH ASSESSMENT
STANDARD D28: WINDOWS ASSESSMENT
STANDARD D29: CROSS VENTILATION ASSESSMENT

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BREEZE PATH <15m SHOWN IN RED

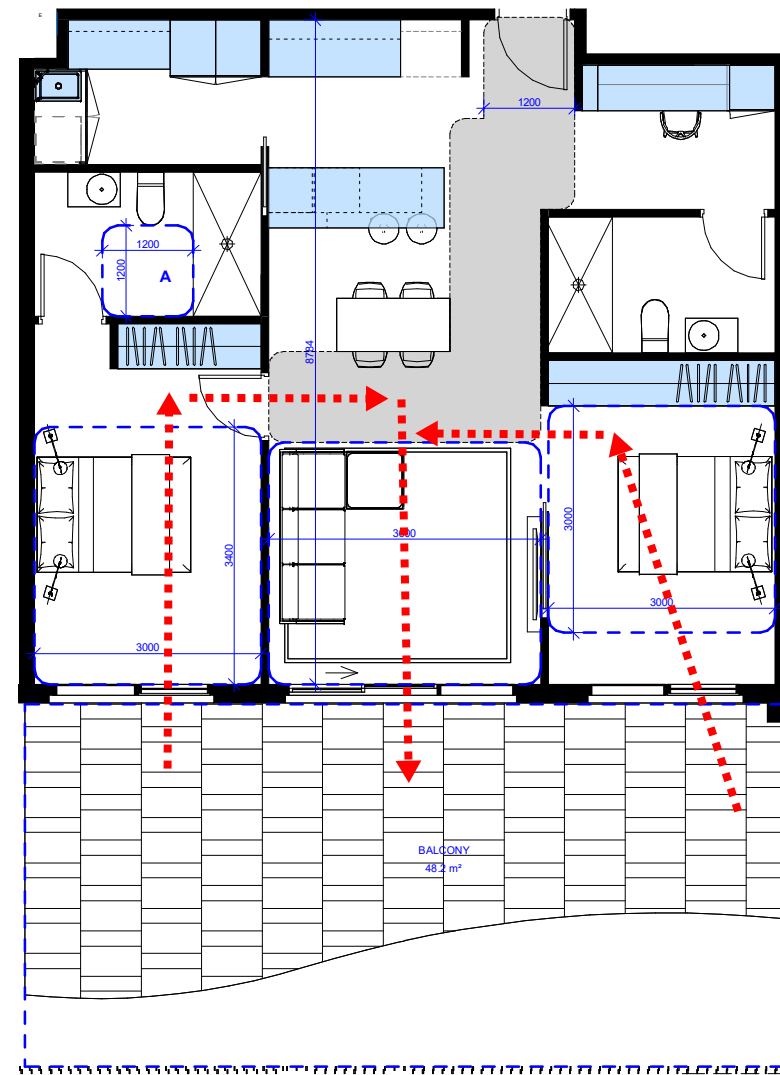


1 TYPE 10 - 2B2B
SCALE 1:50

2B2B - TYPE 10 INTERNAL STORAGE SCHEDULE

CASEWORK	2.0 m ²
ISLAND BENCH	0.8 m ²
KITCHEN BENCH	1.6 m ²
LAUNDRY BENCH	1.5 m ²
WARDROBE	10.1 m ²
TOTAL INTERNAL STORAGE	16.0 m ²

APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 10	GROUND FLOOR	Yes	Yes	Yes	Yes	Yes	Yes	No

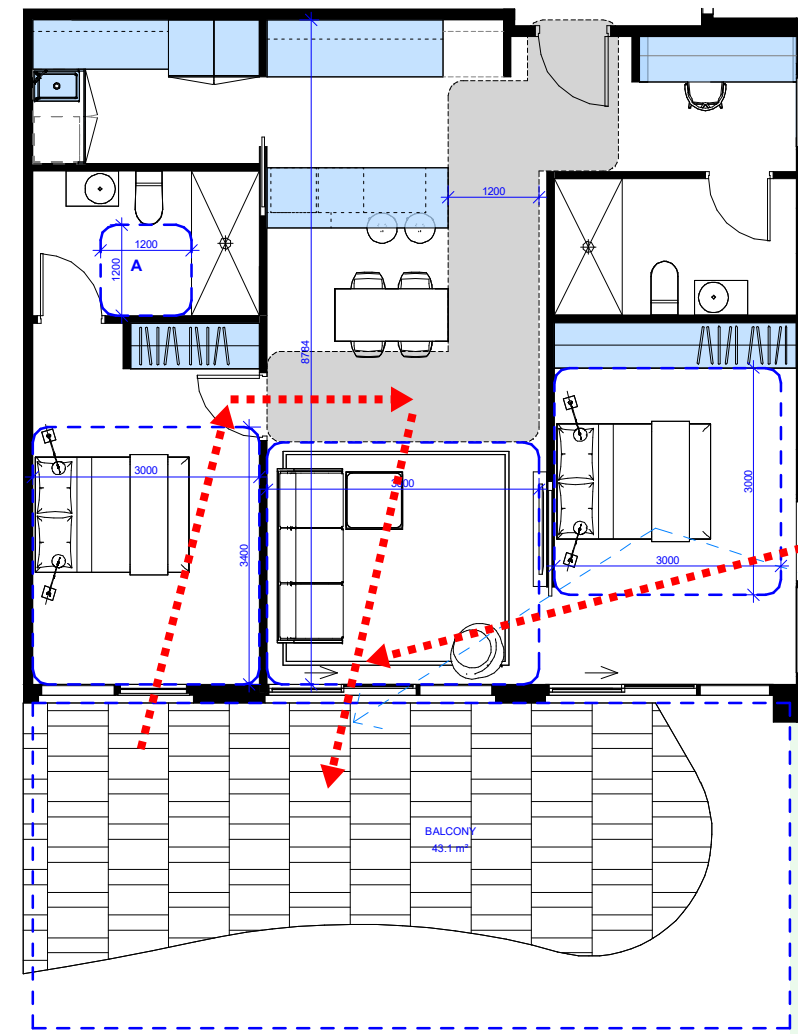


2 TYPE 11 - 2B2B
SCALE 1:50

2B2B - TYPE 11 INTERNAL STORAGE SCHEDULE

CASEWORK	3.4 m ²
ISLAND BENCH	1.1 m ²
KITCHEN BENCH	1.8 m ²
LAUNDRY BENCH	1.2 m ²
WARDROBE	7.9 m ²
TOTAL INTERNAL STORAGE	15.4 m ²

APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 11	GROUND FLOOR	Yes	Yes	Yes	Yes	Yes	Yes	No
APT 11	GROUND FLOOR	Yes	Yes	Yes	Yes	Yes	Yes	No



3 TYPE 12 - 2B2B
SCALE 1:50

2B2B - TYPE 12 INTERNAL STORAGE SCHEDULE

CASEWORK	2.6 m ²
ISLAND BENCH	1.1 m ²
KITCHEN BENCH	2.6 m ²
LAUNDRY BENCH	1.2 m ²
WARDROBE	7.9 m ²
TOTAL INTERNAL STORAGE	15.4 m ²

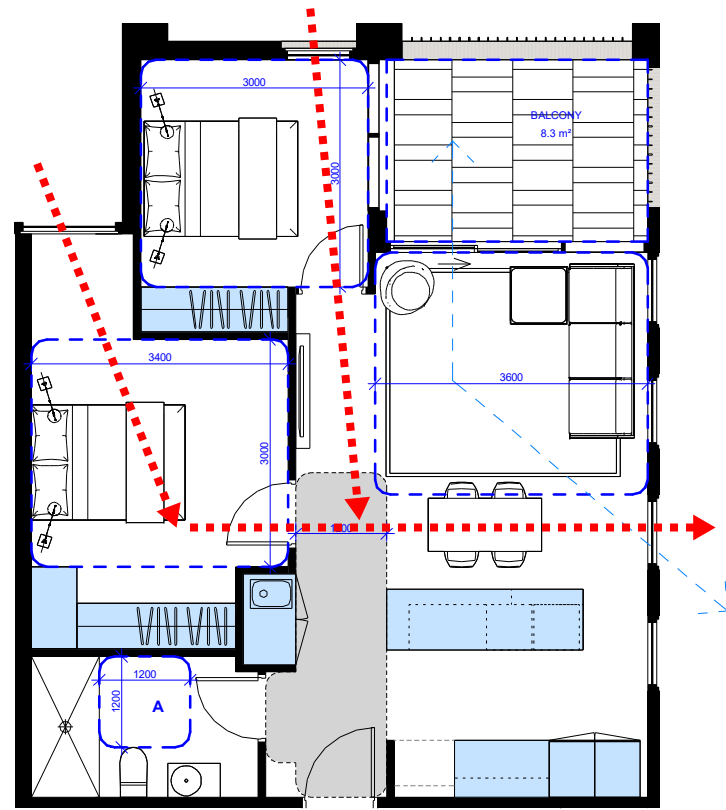
APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 12	GROUND FLOOR	Yes	Yes	Yes	Yes	Yes	Yes	Yes

NOTES:
DOORS: ALL APARTMENT ENTRANCE DOORS, ACCESSIBLE BATHROOMS DOORS & MASTER BEDROOM DOORS SHALL PROVIDE A CLEAR OPENING WIDTH OF AT LEAST 800MM & IN THE CASE OF DESIGN OPTIONS, SHALL BE FITTED WITH READILY REMOVABLE HINGES.
BALCONY SIZES: BALCONY SIZES VARY ON SOME APARTMENT TYPES SHOWN. THE MINIMUM BALCONY SIZE HAS BEEN SHOWN TO ILLUSTRATE COMPLIANCE.
CROSS VENTILATION: PATHS INDICATED ARE MIN 5M & MAX 18M INTERNAL LENGTH.
BETTER APARTMENT STANDARDS:
STANDARD D18: ACCESSIBILITY ASSESSMENT
STANDARD D20: P.O.S ASSESSMENT
STANDARD D21: STORAGE ASSESSMENT
STANDARD D26: ROOM SIZE ASSESSMENT
STANDARD D27: ROOM DEPTH ASSESSMENT
STANDARD D28: WINDOWS ASSESSMENT
STANDARD D29: CROSS VENTILATION ASSESSMENT

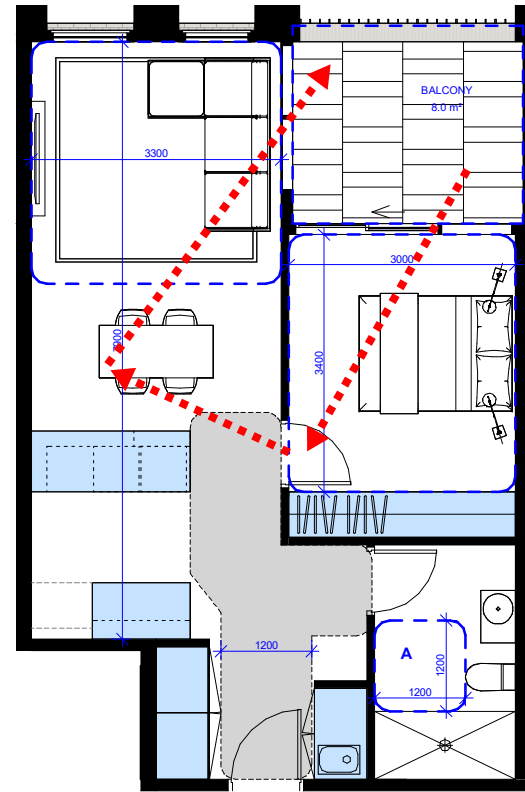
PRELIMINARY | NOT FOR CONSTRUCTION

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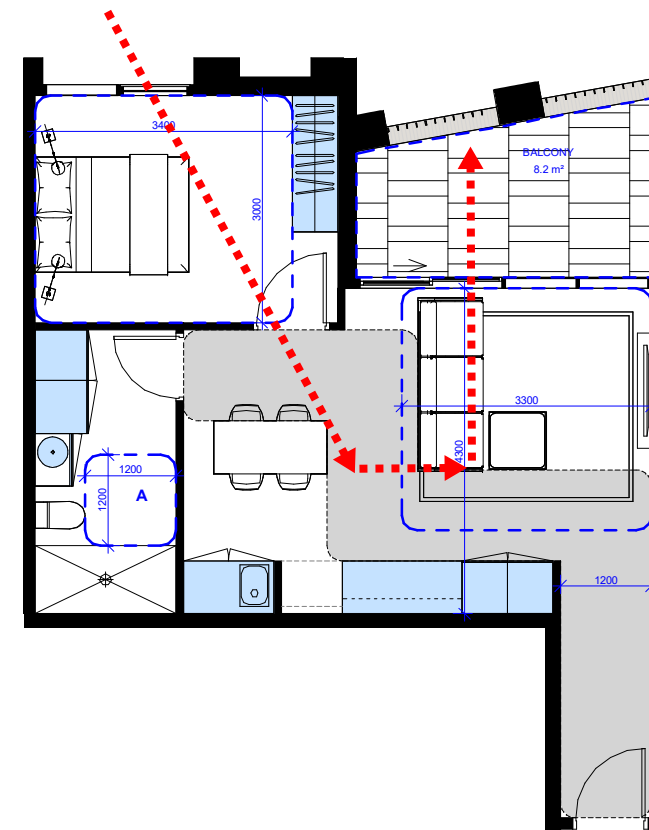
BREEZE PATH <15m SHOWN IN RED



1 01 BADS TYPE 13
SCALE 1:50



2 01 BADS TYPE 14
SCALE 1:50



3 01 BADS TYPE 15
SCALE 1:50

NOTES:
DOORS:
ALL APARTMENT ENTRANCE DOORS, ACCESSIBLE BATHROOMS DOORS & MASTER BEDROOM DOORS SHALL PROVIDE A CLEAR OPENING WIDTH OF AT LEAST 800MM & IN THE CASE OF DESIGN OPTIONS 6, SHALL BE FITTED WITH READILY REMOVABLE HINGES.
BALCONY SIZES:
BALCONY SIZES VARY ON SOME APARTMENT TYPES SHOWN. THE MINIMUM BALCONY SIZE HAS BEEN SHOWN TO ILLUSTRATE COMPLIANCE.
CROSS VENTILATION:
PATHS INDICATED ARE MIN 5M & MAX 18M INTERNAL LENGTH.
BETTER APARTMENT STANDARDS:
STANDARD D18: ACCESSIBILITY ASSESSMENT
STANDARD D20: P.O.S ASSESSMENT
STANDARD D21: STORAGE ASSESSMENT
STANDARD D26: ROOM SIZE ASSESSMENT
STANDARD D27: ROOM DEPTH ASSESSMENT
STANDARD D28: WINDOWS ASSESSMENT
STANDARD D29: CROSS VENTILATION ASSESSMENT

2B1B - TYPE 13 INTERNAL STORAGE SCHEDULE

CASEWORK	2.2 m²
ISLAND BENCH	1.2 m²
KITCHEN BENCH	0.7 m²
LAUNDRY	1.5 m²
WARDROBE	8.3 m²
TOTAL INTERNAL STORAGE	14.0 m²

APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 13	LEVEL 01	Yes	Yes	Yes	Yes	Yes	Yes	No
APT 13	LEVEL 01	Yes	Yes	Yes	Yes	Yes	Yes	Yes

1B1B - TYPE 14 INTERNAL STORAGE SCHEDULE

CASEWORK	2.9 m²
ISLAND BENCH	0.9 m²
KITCHEN BENCH	0.8 m²
LAUNDRY	1.5 m²
WARDROBE	4.9 m²
TOTAL INTERNAL STORAGE	11.0 m²

APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 14	LEVEL 01	Yes	Yes	Yes	Yes	Yes	Yes	No
APT 14	LEVEL 02	Yes	Yes	Yes	Yes	Yes	Yes	No

1B1B - TYPE 15 INTERNAL STORAGE SCHEDULE

CASEWORK	4.5 m²
KITCHEN BENCH	1.0 m²
LAUNDRY	1.5 m²
WARDROBE	2.9 m²
TOTAL INTERNAL STORAGE	10.0 m²

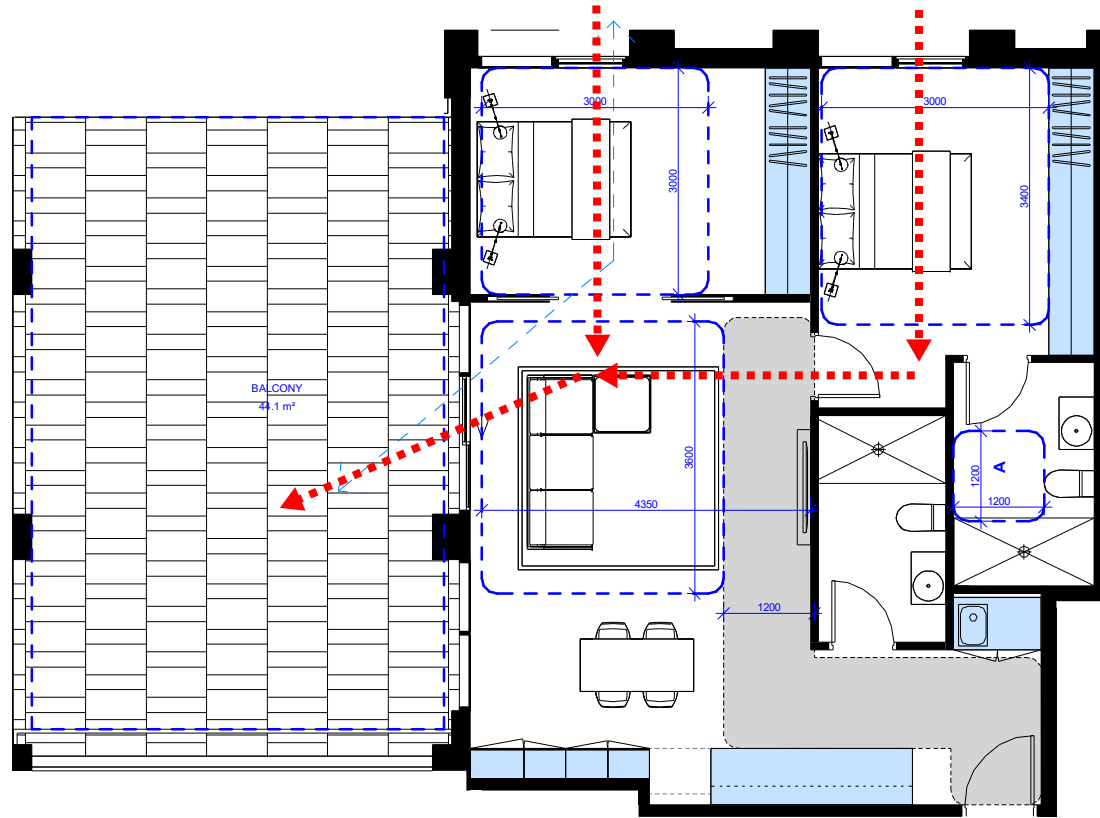
APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 15	LEVEL 01	Yes	Yes	Yes	Yes	Yes	Yes	No

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20031-14/01/2025 9:15:55 AM

BREEZE PATH <15m SHOWN IN RED

NOTES:
 DOORS:
 ALL APARTMENT ENTRANCE DOORS, ACCESSIBLE BATHROOMS DOORS & MASTER BEDROOM DOORS SHALL PROVIDE A CLEAR OPENING WIDTH OF AT LEAST 800MM & IN THE CASE OF DESIGN OPTION B, SHALL BE FITTED WITH READILY REMOVABLE HINGES.
 BALCONY SIZES:
 BALCONY SIZES VARY ON SOME APARTMENT TYPES SHOWN. THE MINIMUM BALCONY SIZE HAS BEEN SHOWN TO ILLUSTRATE COMPLIANCE.
 CROSS VENTILATION:
 PATHS INDICATED ARE MIN 5M & MAX 18M INTERNAL LENGTH.
 BETTER APARTMENT STANDARDS:
 STANDARD D18: ACCESSIBILITY ASSESSMENT
 STANDARD D20: P.O.S ASSESSMENT
 STANDARD D21: STORAGE ASSESSMENT
 STANDARD D26: ROOM SIZE ASSESSMENT
 STANDARD D27: ROOM DEPTH ASSESSMENT
 STANDARD D28: WINDOWS ASSESSMENT
 STANDARD D29: CROSS VENTILATION ASSESSMENT

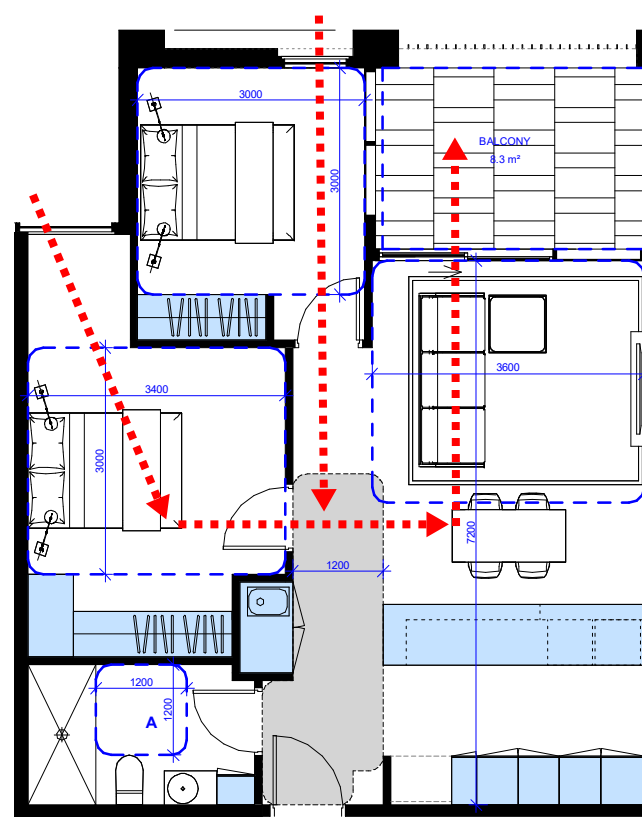


1 01 BADS TYPE 16
 SCALE 1:50

2B2B - TYPE 16 INTERNAL STORAGE SCHEDULE

KITCHEN BENCH	1.8 m²
LAUNDRY	1.4 m²
WARDROBE	11.0 m²
TOTAL INTERNAL STORAGE	14.3 m²

APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 16	LEVEL 01	Yes	Yes	Yes	Yes	Yes	Yes	Yes

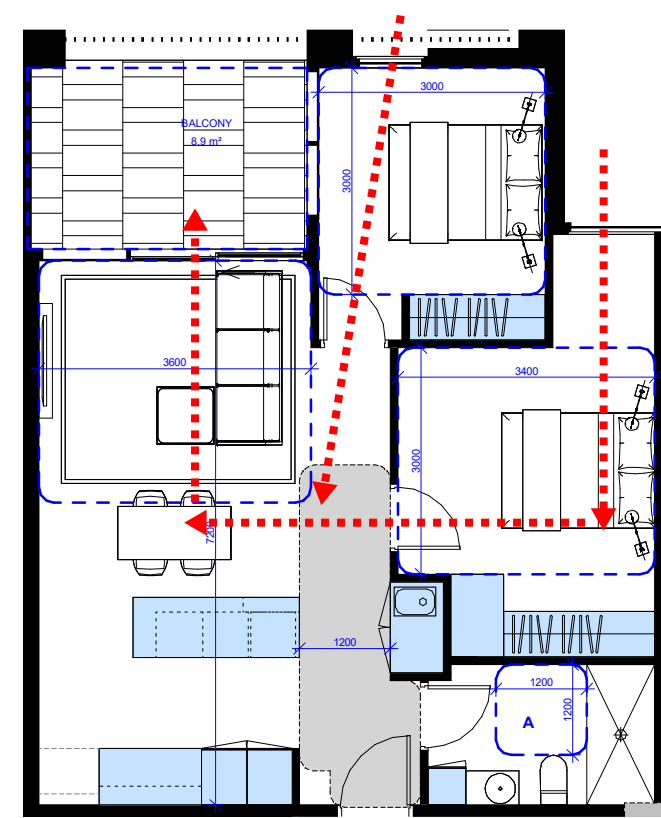


2 01 BADS TYPE 17
 SCALE 1:50

2B1B - TYPE 17 INTERNAL STORAGE SCHEDULE

CASEWORK	4.5 m²
ISLAND BENCH	1.8 m²
LAUNDRY	1.5 m²
WARDROBE	7.9 m²
TOTAL INTERNAL STORAGE	15.7 m²

APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 17	LEVEL 01	Yes	Yes	Yes	Yes	Yes	Yes	No



3 01 BADS TYPE 18
 SCALE 1:50

2B1B - TYPE 18 INTERNAL STORAGE SCHEDULE

CASEWORK	2.8 m²
ISLAND BENCH	0.9 m²
KITCHEN BENCH	0.8 m²
LAUNDRY	1.5 m²
WARDROBE	8.2 m²
TOTAL INTERNAL STORAGE	14.2 m²

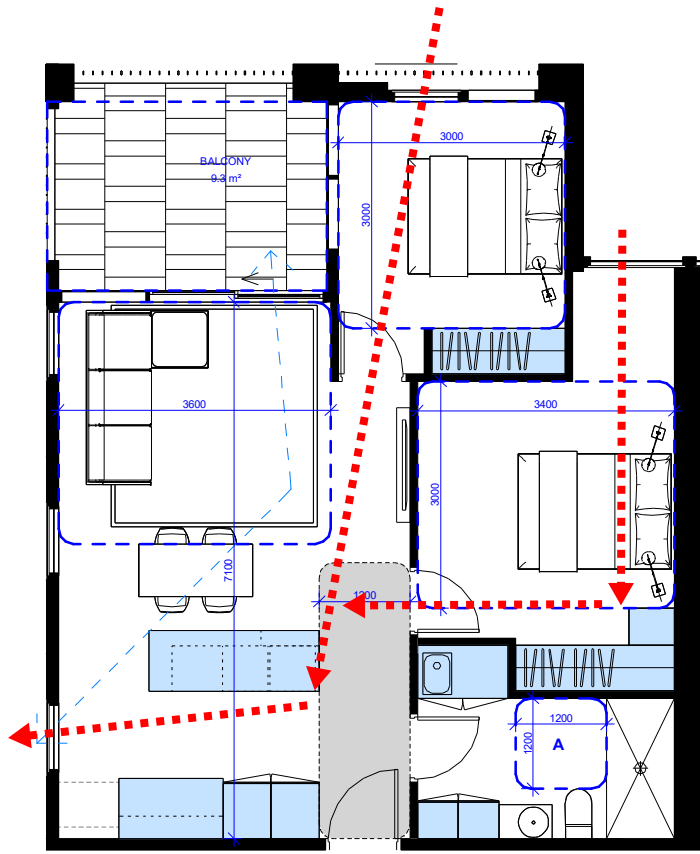
APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 18	LEVEL 01	Yes	Yes	Yes	Yes	Yes	Yes	No
APT 18	LEVEL 01	Yes	Yes	Yes	Yes	Yes	Yes	No
APT 18	LEVEL 02	Yes	Yes	Yes	Yes	Yes	Yes	Yes
APT 18	LEVEL 02	Yes	Yes	Yes	Yes	Yes	Yes	No
APT 18	LEVEL 02	Yes	Yes	Yes	Yes	Yes	Yes	No

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20031-14/01/2025 9:15:55 AM

BREEZE PATH <15m SHOWN IN RED

NOTES:
 DOORS:
 ALL APARTMENT ENTRANCE DOORS, ACCESSIBLE BATHROOMS DOORS & MASTER BEDROOM DOORS SHALL PROVIDE A CLEAR OPENING WIDTH OF AT LEAST 800MM & IN THE CASE OF DESIGN OPTIONS, SHALL BE FITTED WITH READILY REMOVABLE HINGES.
 BALCONY SIZES:
 BALCONY SIZES VARY ON SOME APARTMENT TYPES SHOWN. THE MINIMUM BALCONY SIZE HAS BEEN SHOWN TO ILLUSTRATE COMPLIANCE.
 CROSS VENTILATION:
 PATHS INDICATED ARE MIN 5M & MAX 18M INTERNAL LENGTH.
 BETTER APARTMENT STANDARDS:
 STANDARD D18: ACCESSIBILITY ASSESSMENT
 STANDARD D20: P.O.S ASSESSMENT
 STANDARD D21: STORAGE ASSESSMENT
 STANDARD D26: ROOM SIZE ASSESSMENT
 STANDARD D27: ROOM DEPTH ASSESSMENT
 STANDARD D28: WINDOWS ASSESSMENT
 STANDARD D29: CROSS VENTILATION ASSESSMENT

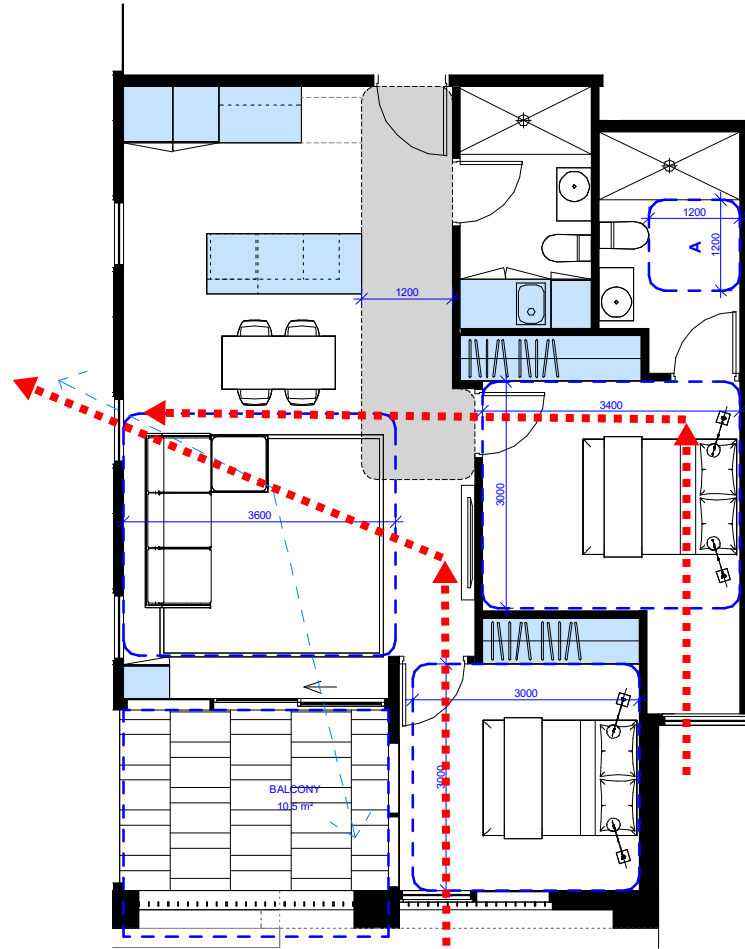


1 01 BADS TYPE 19
 SCALE 1:50

2B1B - TYPE 19 INTERNAL STORAGE SCHEDULE

CASEWORK	3.6 m²
ISLAND BENCH	1.0 m²
KITCHEN BENCH	0.9 m²
LALINDRY	1.5 m²
WARDROBE	7.2 m²
TOTAL INTERNAL STORAGE	14.1 m²

APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 19	LEVEL 01	Yes	Yes	Yes	Yes	Yes	Yes	Yes
APT 19	LEVEL 02	Yes	Yes	Yes	Yes	Yes	Yes	Yes

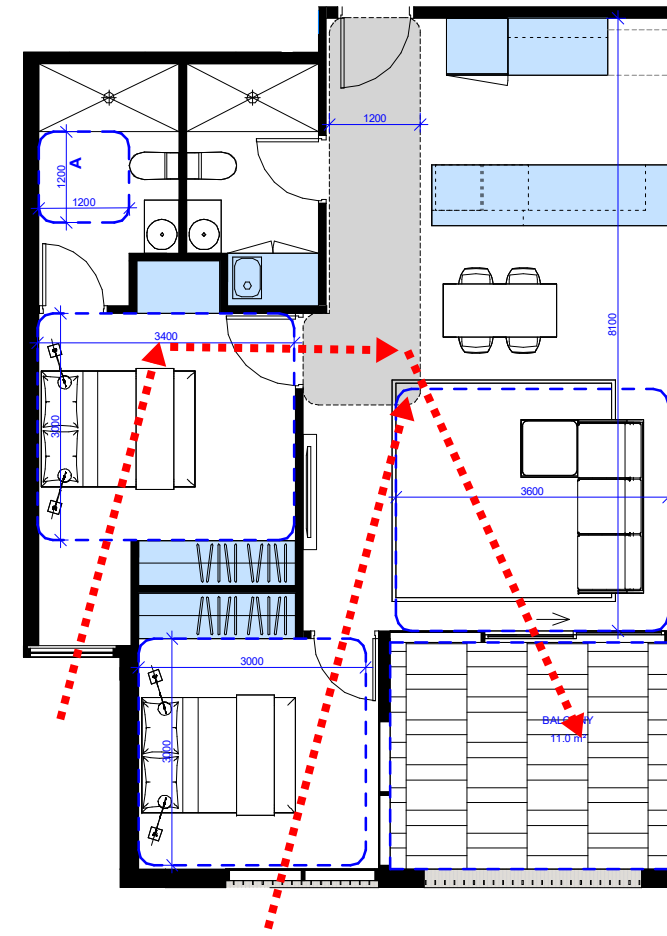


2 01 BADS TYPE 20
 SCALE 1:50

2B2B - TYPE 20 INTERNAL STORAGE SCHEDULE

CASEWORK	3.8 m²
ISLAND BENCH	0.8 m²
KITCHEN BENCH	0.8 m²
LALINDRY	1.5 m²
WARDROBE	7.2 m²
TOTAL INTERNAL STORAGE	14.0 m²

APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 20	LEVEL 01	Yes	Yes	Yes	Yes	Yes	Yes	Yes
APT 20	LEVEL 02	Yes	Yes	Yes	Yes	Yes	Yes	Yes



3 01 BADS TYPE 21
 SCALE 1:50

2B2B - TYPE 21 INTERNAL STORAGE SCHEDULE

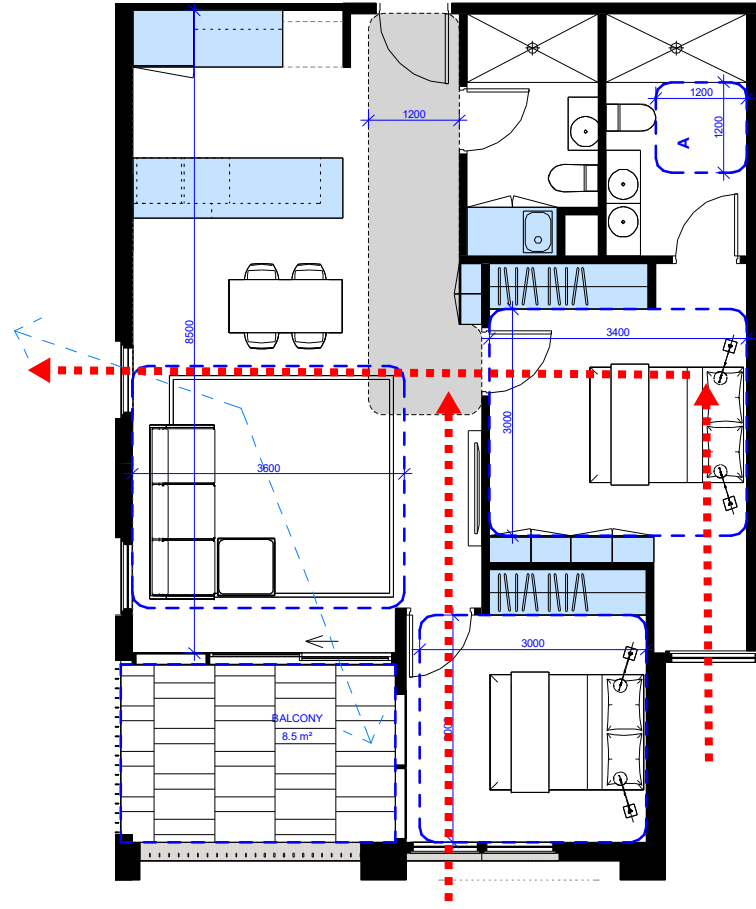
CASEWORK	1.5 m²
ISLAND BENCH	1.6 m²
KITCHEN BENCH	0.8 m²
LALINDRY	1.5 m²
WARDROBE	8.8 m²
TOTAL INTERNAL STORAGE	14.2 m²

APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 21	LEVEL 01	Yes	Yes	Yes	Yes	Yes	Yes	No
APT 21	LEVEL 02	Yes	Yes	Yes	Yes	Yes	Yes	No

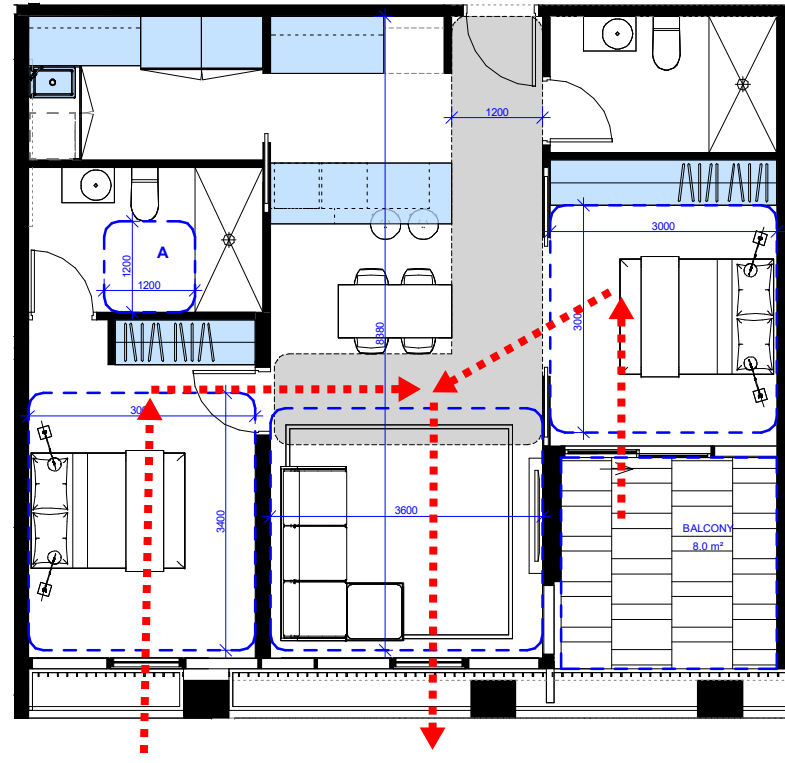
PRELIMINARY | NOT FOR CONSTRUCTION

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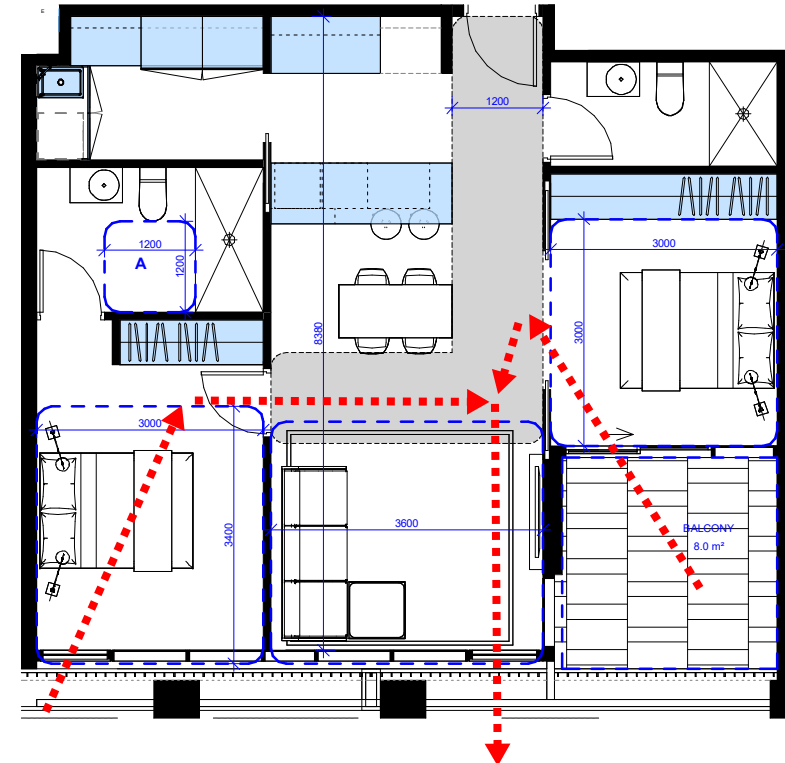
BREEZE PATH <15m SHOWN IN RED



1 01 BADS TYPE 22
SCALE 1:50



2 01 BADS TYPE 23
SCALE 1:50



3 01 BADS TYPE 24
SCALE 1:50

NOTES:
DOORS:
ALL APARTMENT ENTRANCE DOORS, ACCESSIBLE BATHROOMS DOORS & MASTER BEDROOM DOORS SHALL PROVIDE A CLEAR OPENING WIDTH OF AT LEAST 800MM & IN THE CASE OF DESIGN OPTIONS G, SHALL BE FITTED WITH READILY REMOVABLE HINGES.
BALCONY SIZES:
BALCONY SIZES VARY ON SOME APARTMENT TYPES SHOWN. THE MINIMUM BALCONY SIZE HAS BEEN SHOWN TO ILLUSTRATE COMPLIANCE.
CROSS VENTILATION:
PATHS INDICATED ARE MIN 5M & MAX 18M INTERNAL LENGTH.
BETTER APARTMENT STANDARDS:
STANDARD D18: ACCESSIBILITY ASSESSMENT
STANDARD D20: P.O.S ASSESSMENT
STANDARD D21: STORAGE ASSESSMENT
STANDARD D26: ROOM SIZE ASSESSMENT
STANDARD D27: ROOM DEPTH ASSESSMENT
STANDARD D28: WINDOWS ASSESSMENT
STANDARD D29: CROSS VENTILATION ASSESSMENT

2B2B - TYPE 22 INTERNAL STORAGE SCHEDULE

CASEWORK	3.9 m ²
ISLAND BENCH	1.4 m ²
KITCHEN BENCH	0.7 m ²
LAUNDRY	1.5 m ²
WARDROBE	6.8 m ²
TOTAL INTERNAL STORAGE	14.2 m ²

2B2B - TYPE 23 INTERNAL STORAGE SCHEDULE

CASEWORK	2.7 m ²
ISLAND BENCH	1.1 m ²
KITCHEN BENCH	1.7 m ²
LAUNDRY	1.2 m ²
WARDROBE	7.9 m ²
TOTAL INTERNAL STORAGE	14.6 m ²

2B2B - TYPE 24 INTERNAL STORAGE SCHEDULE

CASEWORK	2.7 m ²
ISLAND BENCH	1.1 m ²
KITCHEN BENCH	2.5 m ²
LAUNDRY	1.2 m ²
WARDROBE	7.9 m ²
TOTAL INTERNAL STORAGE	15.4 m ²

APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 22	LEVEL 01	Yes	Yes	Yes	Yes	Yes	Yes	Yes
APT 22	LEVEL 01	Yes	Yes	Yes	Yes	Yes	Yes	Yes
APT 22	LEVEL 02	Yes	Yes	Yes	Yes	Yes	Yes	Yes

APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 23	LEVEL 01	Yes	Yes	Yes	Yes	Yes	Yes	No

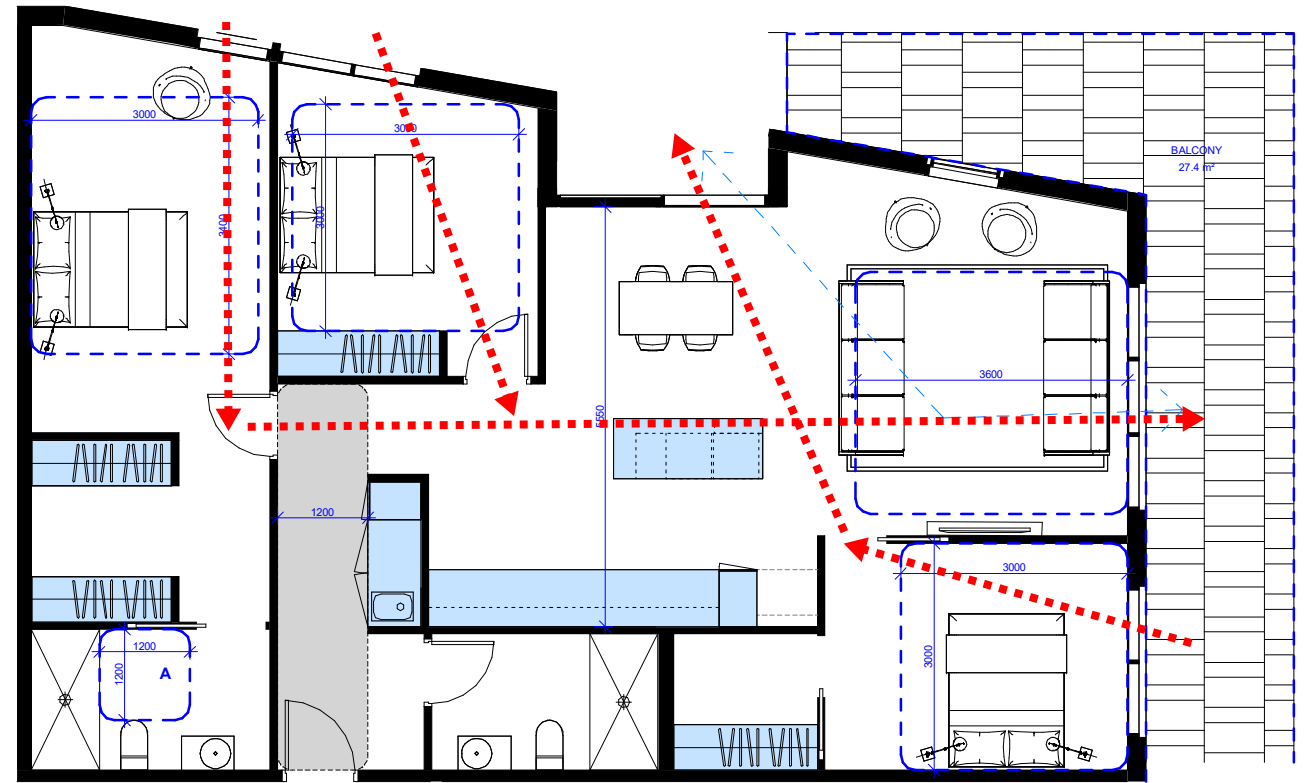
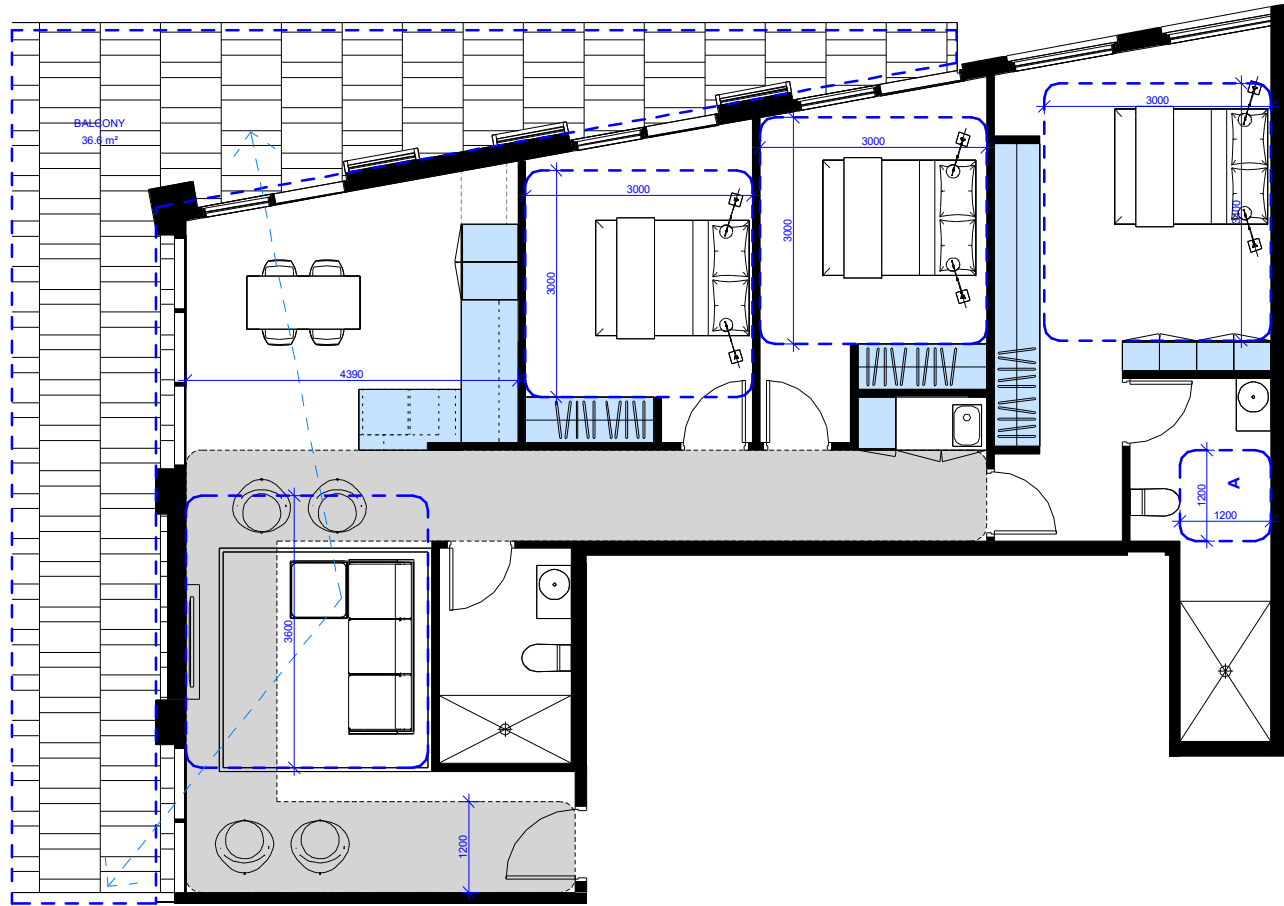
APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 24	LEVEL 01	Yes	Yes	Yes	Yes	Yes	Yes	No
APT 24	LEVEL 01	Yes	Yes	Yes	Yes	Yes	Yes	No

PRELIMINARY | NOT FOR CONSTRUCTION

20031-14/01/2025 9:16:03 AM

BREEZE PATH <15m SHOWN IN RED

NOTES:
 DOORS:
 ALL APARTMENT ENTRANCE DOORS, ACCESSIBLE BATHROOMS DOORS & MASTER BEDROOM DOORS SHALL PROVIDE A CLEAR OPENING WIDTH OF AT LEAST 800MM & IN THE CASE OF DESIGN OPTIONS G, SHALL BE FITTED WITH READILY REMOVABLE HINGES.
 BALCONY SIZES:
 BALCONY SIZES VARY ON SOME APARTMENT TYPES SHOWN. THE MINIMUM BALCONY SIZE HAS BEEN SHOWN TO ILLUSTRATE COMPLIANCE.
 CROSS VENTILATION:
 PATHS INDICATED ARE MIN 5M & MAX 18M INTERNAL LENGTH.
 BETTER APARTMENT STANDARDS:
 STANDARD D18: ACCESSIBILITY ASSESSMENT
 STANDARD D20: P.O.S ASSESSMENT
 STANDARD D21: STORAGE ASSESSMENT
 STANDARD D26: ROOM SIZE ASSESSMENT
 STANDARD D27: ROOM DEPTH ASSESSMENT
 STANDARD D28: WINDOWS ASSESSMENT
 STANDARD D29: CROSS VENTILATION ASSESSMENT



NOT COMPLIANT WITH
 BESS TOOLS CRITERIA,
 BREEZE PATH >15m

1 02 BADS TYPE 25
 SCALE 1:50

2 02 BADS TYPE 26
 SCALE 1:50

3B2B - TYPE 25 INTERNAL STORAGE SCHEDULE

CASEWORK	4.5 m²
ISLAND BENCH	0.3 m²
KITCHEN BENCH	1.2 m²
WARDROBE	12.0 m²
TOTAL INTERNAL STORAGE	18.1 m²

3B2B - TYPE 26 INTERNAL STORAGE SCHEDULE

CASEWORK	1.7 m²
ISLAND BENCH	0.8 m²
KITCHEN BENCH	2.7 m²
LAUNDRY	1.9 m²
WARDROBE	12.5 m²
TOTAL INTERNAL STORAGE	19.7 m²

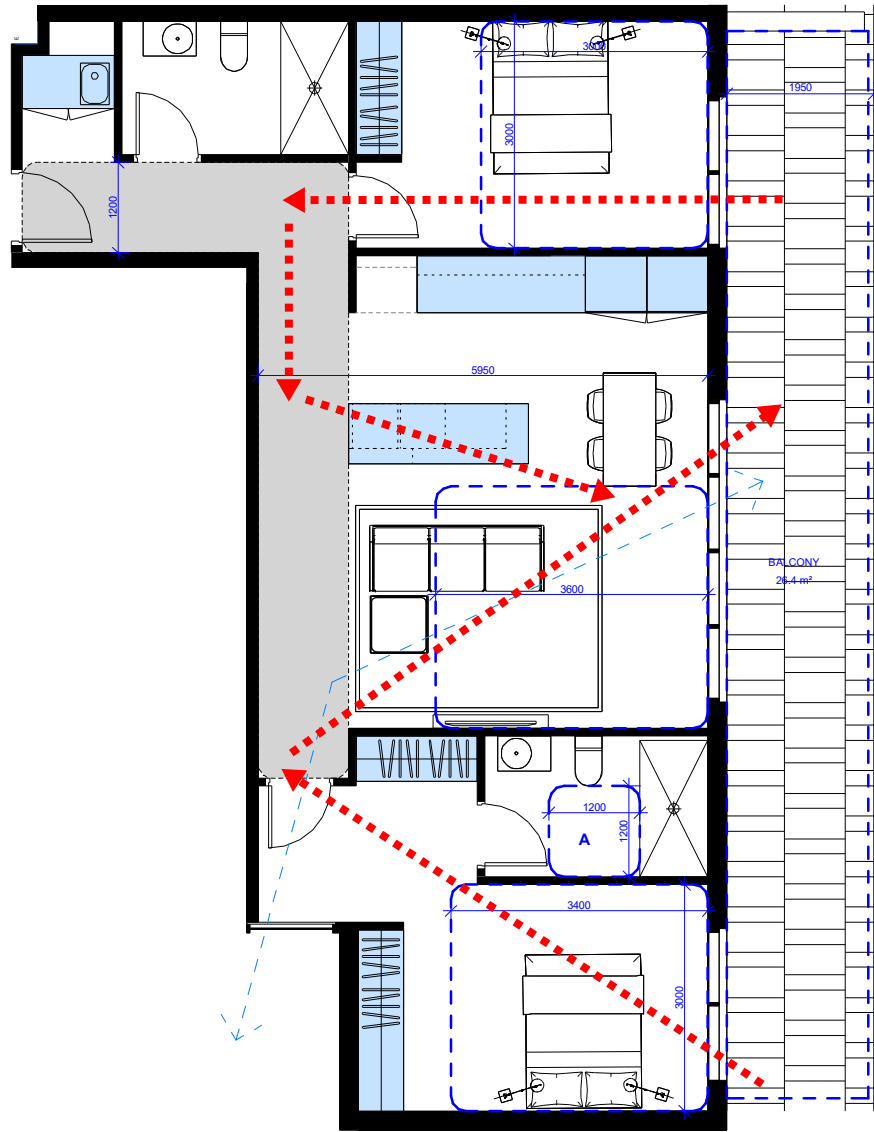
APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 25	LEVEL 02	Yes	Yes	Yes	Yes	Yes	Yes	Yes

APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 26	LEVEL 02	Yes	Yes	Yes	Yes	Yes	Yes	Yes

PRELIMINARY | NOT FOR CONSTRUCTION

20031-14/01/2025 9:16:08 AM

BREEZE PATH <15m SHOWN IN RED

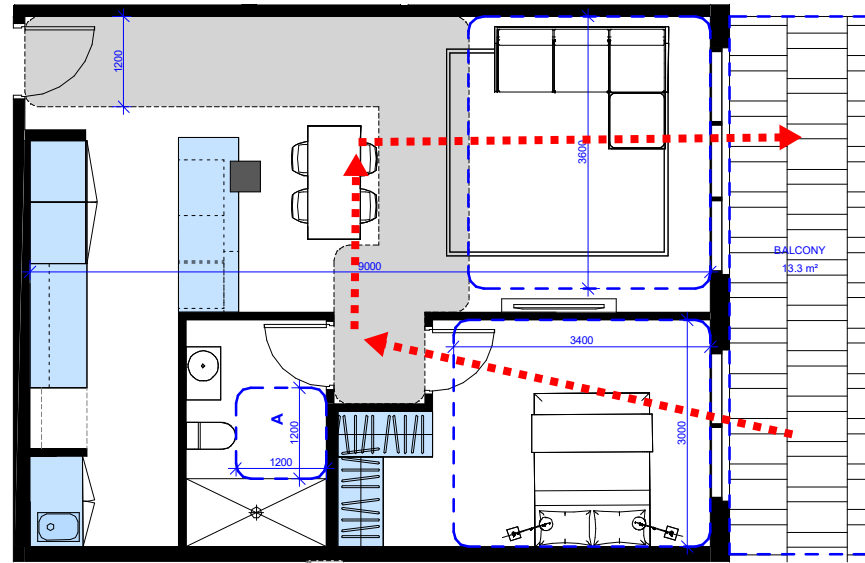


1 02 BADS TYPE 27
SCALE 1:50

2B2B - TYPE 27 INTERNAL STORAGE SCHEDULE

CASEWORK	1.5 m²
ISLAND BENCH	1.1 m²
KITCHEN BENCH	1.5 m²
LAUNDRY	1.5 m²
WARDROBE	9.3 m²
TOTAL INTERNAL STORAGE	14.9 m²

APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 27	LEVEL 02	Yes	Yes	Yes	Yes	Yes	Yes	Yes

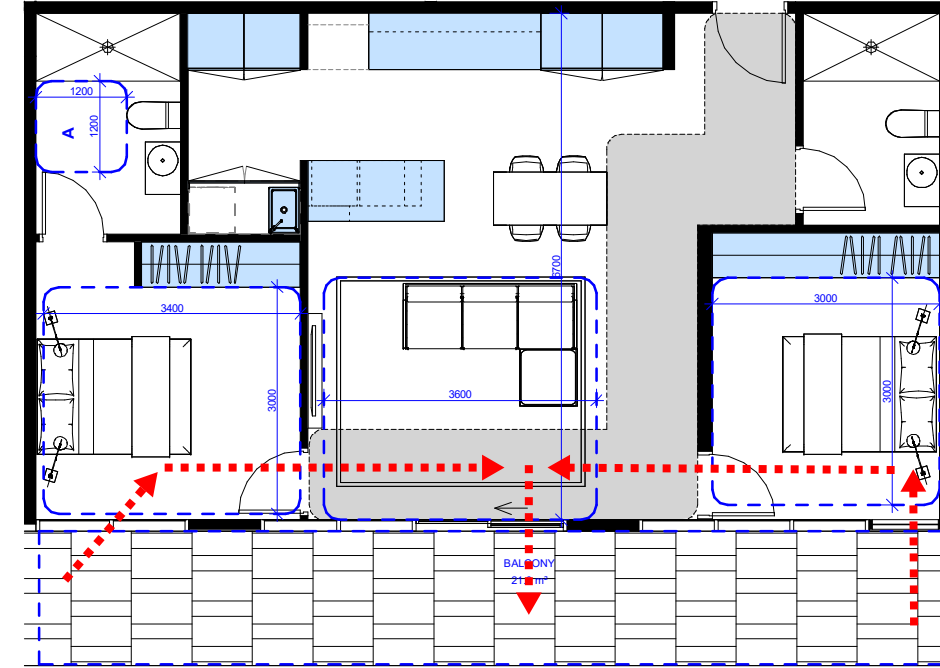


2 02 BADS TYPE 28
SCALE 1:50

1B1B - TYPE 28 INTERNAL STORAGE SCHEDULE

CASEWORK	2.9 m²
ISLAND BENCH	1.0 m²
KITCHEN BENCH	1.0 m²
LAUNDRY	1.5 m²
WARDROBE	3.9 m²
TOTAL INTERNAL STORAGE	10.4 m²

APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 28	LEVEL 02	Yes	Yes	Yes	Yes	Yes	Yes	No



3 02 BADS TYPE 29
SCALE 1:50

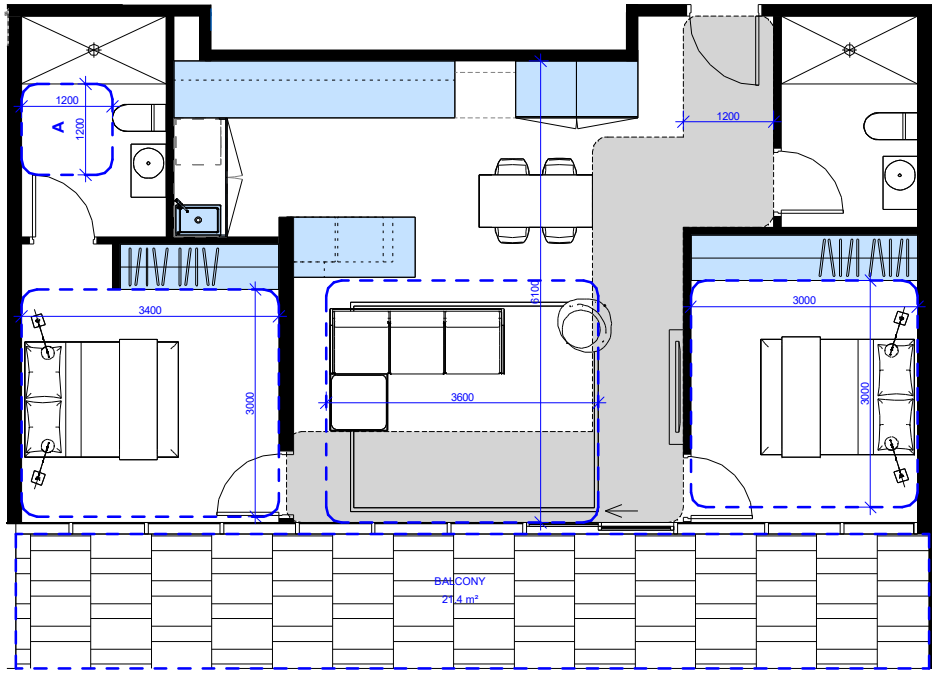
2B2B - TYPE 29 INTERNAL STORAGE SCHEDULE

CASEWORK	5.6 m²
ISLAND BENCH	0.6 m²
KITCHEN BENCH	1.5 m²
LAUNDRY	1.4 m²
WARDROBE	8.3 m²
TOTAL INTERNAL STORAGE	17.5 m²

APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 29	LEVEL 02	Yes	Yes	Yes	Yes	Yes	Yes	No

NOTES:
DOORS:
ALL APARTMENT ENTRANCE DOORS, ACCESSIBLE BATHROOMS DOORS & MASTER BEDROOM DOORS SHALL PROVIDE A CLEAR OPENING WIDTH OF AT LEAST 800MM & IN THE CASE OF DESIGN OPTIONS G, SHALL BE FITTED WITH READILY REMOVABLE HINGES.
BALCONY SIZES:
BALCONY SIZES VARY ON SOME APARTMENT TYPES SHOWN. THE MINIMUM BALCONY SIZE HAS BEEN SHOWN TO ILLUSTRATE COMPLIANCE.
CROSS VENTILATION:
PATHS INDICATED ARE MIN 5M & MAX 18M INTERNAL LENGTH.
BETTER APARTMENT STANDARDS:
STANDARD D18: ACCESSIBILITY ASSESSMENT
STANDARD D20: P.O.S ASSESSMENT
STANDARD D21: STORAGE ASSESSMENT
STANDARD D26: ROOM SIZE ASSESSMENT
STANDARD D27: ROOM DEPTH ASSESSMENT
STANDARD D28: WINDOWS ASSESSMENT
STANDARD D29: CROSS VENTILATION ASSESSMENT

BREEZE PATH <15m SHOWN IN RED



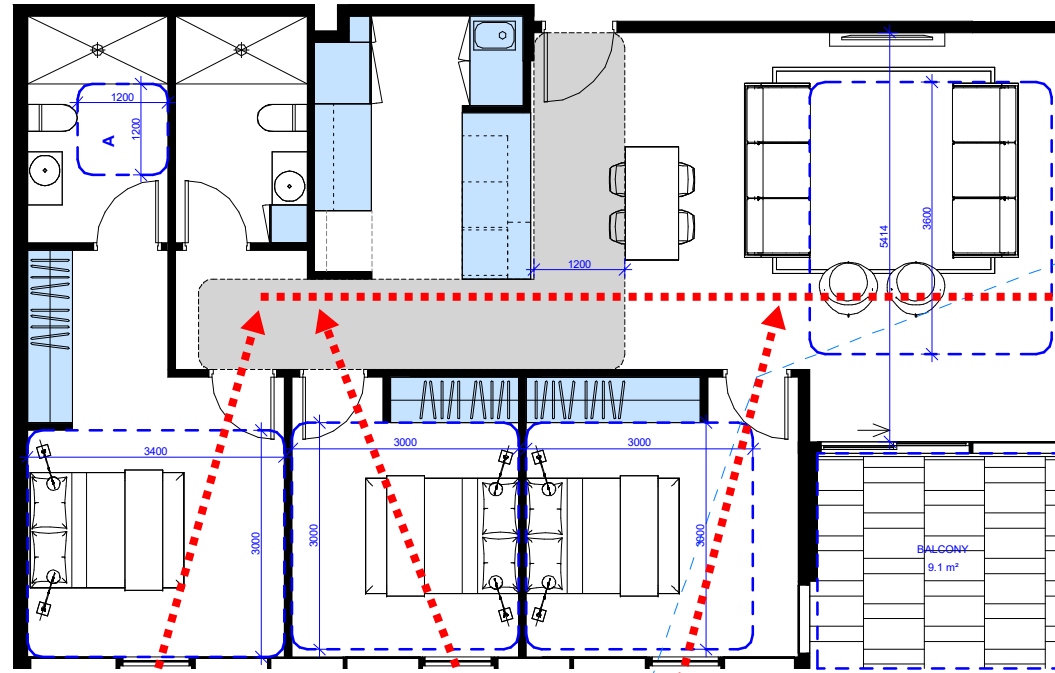
1 02 BADS TYPE 30
SCALE 1:50

NOT COMPLIANT WITH BESS TOOLS CRITERIA, THE SPACE DOES NOT HAVE REASONABLE VENTILATION THROUGHOUT

282B - TYPE 30 INTERNAL STORAGE SCHEDULE

CASEWORK	2.9 m ²
ISLAND BENCH	0.6 m ²
KITCHEN BENCH	2.5 m ²
LAUNDRY	1.5 m ²
WARDROBE	8.3 m ²
TOTAL INTERNAL STORAGE	15.9 m ²

APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 30	LEVEL 02	Yes	Yes	Yes	Yes	Yes	Yes	No



2 02 BADS TYPE 31
SCALE 1:50

382B - TYPE 31 INTERNAL STORAGE SCHEDULE

CASEWORK	2.3 m ²
ISLAND BENCH	1.1 m ²
KITCHEN BENCH	0.9 m ²
LAUNDRY	1.5 m ²
WARDROBE	10.2 m ²
TOTAL INTERNAL STORAGE	16.0 m ²

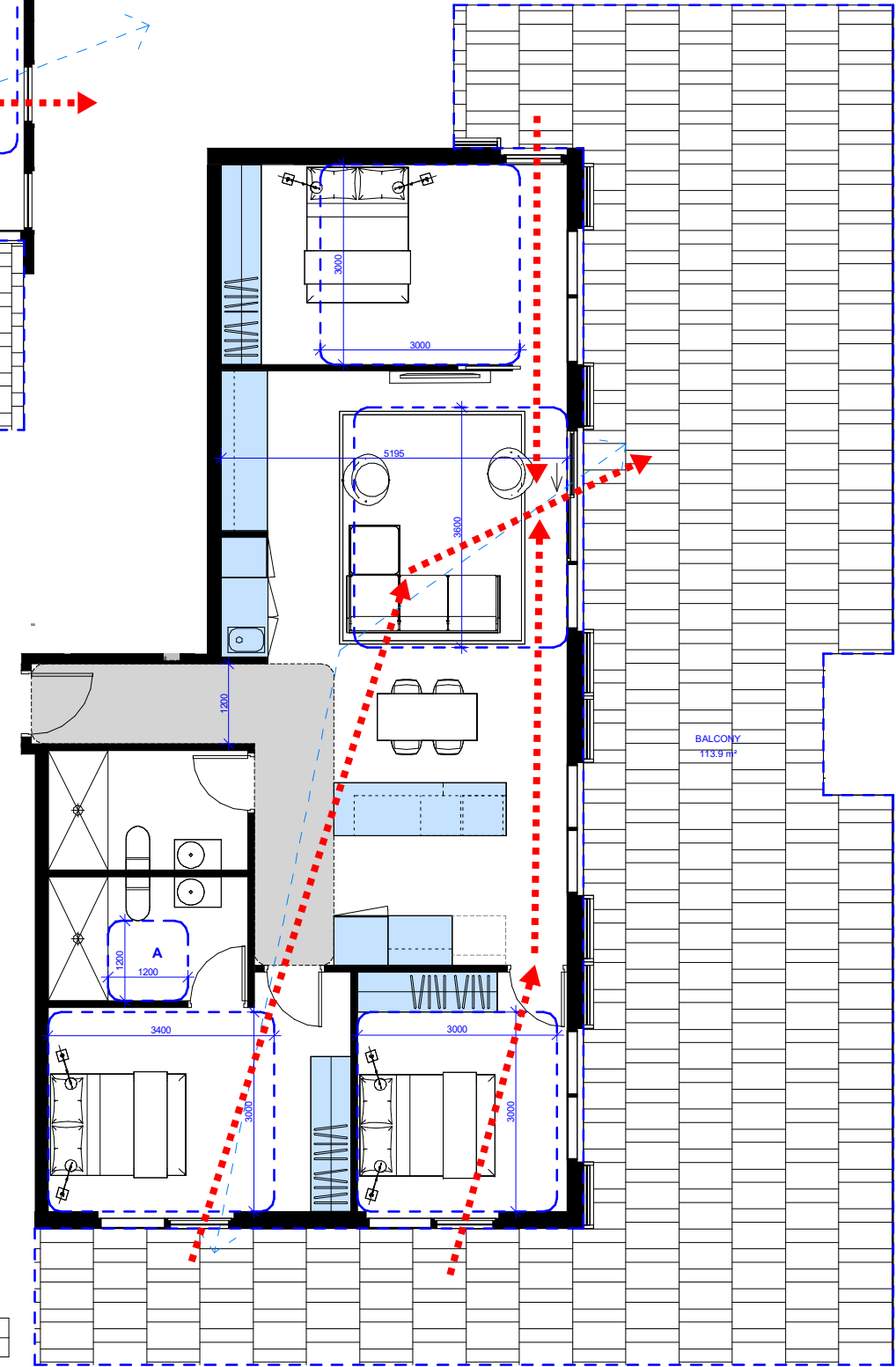
APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 31	LEVEL 02	Yes	Yes	Yes	Yes	Yes	Yes	Yes

3 03 BADS TYPE 32
SCALE 1:50

382B - TYPE 32 INTERNAL STORAGE SCHEDULE

CASEWORK	2.5 m ²
ISLAND BENCH	1.2 m ²
KITCHEN BENCH	2.1 m ²
LAUNDRY	1.5 m ²
WARDROBE	12.0 m ²
TOTAL INTERNAL STORAGE	19.3 m ²

APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 32	LEVEL 03	Yes	Yes	Yes	Yes	Yes	Yes	Yes



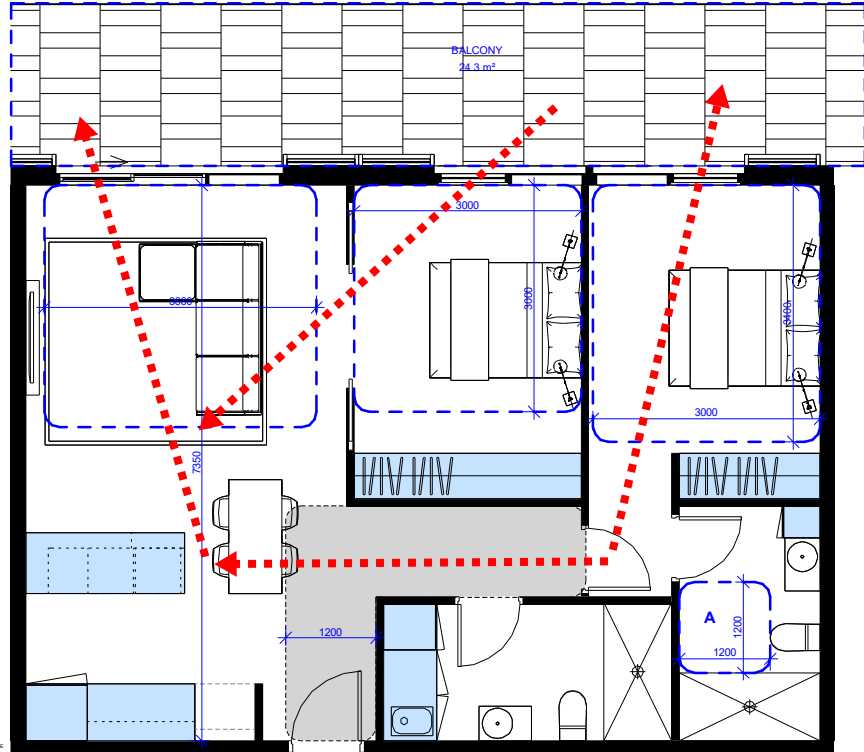
NOTES:
DOORS: ALL APARTMENT ENTRANCE DOORS, ACCESSIBLE BATHROOMS DOORS & MASTER BEDROOM DOORS SHALL PROVIDE A CLEAR OPENING WIDTH OF AT LEAST 850MM & IN THE CASE OF DESIGN OPTIONS, SHALL BE FITTED WITH READILY REMOVABLE HINGES.
BALCONY SIZES: BALCONY SIZES VARY ON SOME APARTMENT TYPES SHOWN. THE MINIMUM BALCONY SIZE HAS BEEN SHOWN TO ILLUSTRATE COMPLIANCE.
CROSS VENTILATION: PATHS INDICATED ARE MIN 5M & MAX 18M INTERNAL LENGTH.
BETTER APARTMENT STANDARDS:
STANDARD D18: ACCESSIBILITY ASSESSMENT
STANDARD D20: P.O.S ASSESSMENT
STANDARD D21: STORAGE ASSESSMENT
STANDARD D26: ROOM SIZE ASSESSMENT
STANDARD D27: ROOM DEPTH ASSESSMENT
STANDARD D28: WINDOW ASSESSMENT
STANDARD D29: CROSS VENTILATION ASSESSMENT

PRELIMINARY | NOT FOR CONSTRUCTION

20031-14/01/2025 9:16:21 AM

BREEZE PATH <15m SHOWN IN RED

NOTES:
 DOORS:
 ALL APARTMENT ENTRANCE DOORS, ACCESSIBLE BATHROOMS DOORS & MASTER BEDROOM DOORS SHALL PROVIDE A CLEAR OPENING WIDTH OF AT LEAST 850MM & IN THE CASE OF DESIGN OPTIONS G, SHALL BE FITTED WITH READILY REMOVABLE HINGES.
 BALCONY SIZES:
 BALCONY SIZES VARY ON SOME APARTMENT TYPES SHOWN. THE MINIMUM BALCONY SIZE HAS BEEN SHOWN TO ILLUSTRATE COMPLIANCE.
 CROSS VENTILATION:
 PATHS INDICATED ARE MIN 5M & MAX 18M INTERNAL LENGTH.
 BETTER APARTMENT STANDARDS:
 STANDARD D18: ACCESSIBILITY ASSESSMENT
 STANDARD D20: P.O.S ASSESSMENT
 STANDARD D21: STORAGE ASSESSMENT
 STANDARD D26: ROOM SIZE ASSESSMENT
 STANDARD D27: ROOM DEPTH ASSESSMENT
 STANDARD D28: WINDOWS ASSESSMENT
 STANDARD D29: CROSS VENTILATION ASSESSMENT

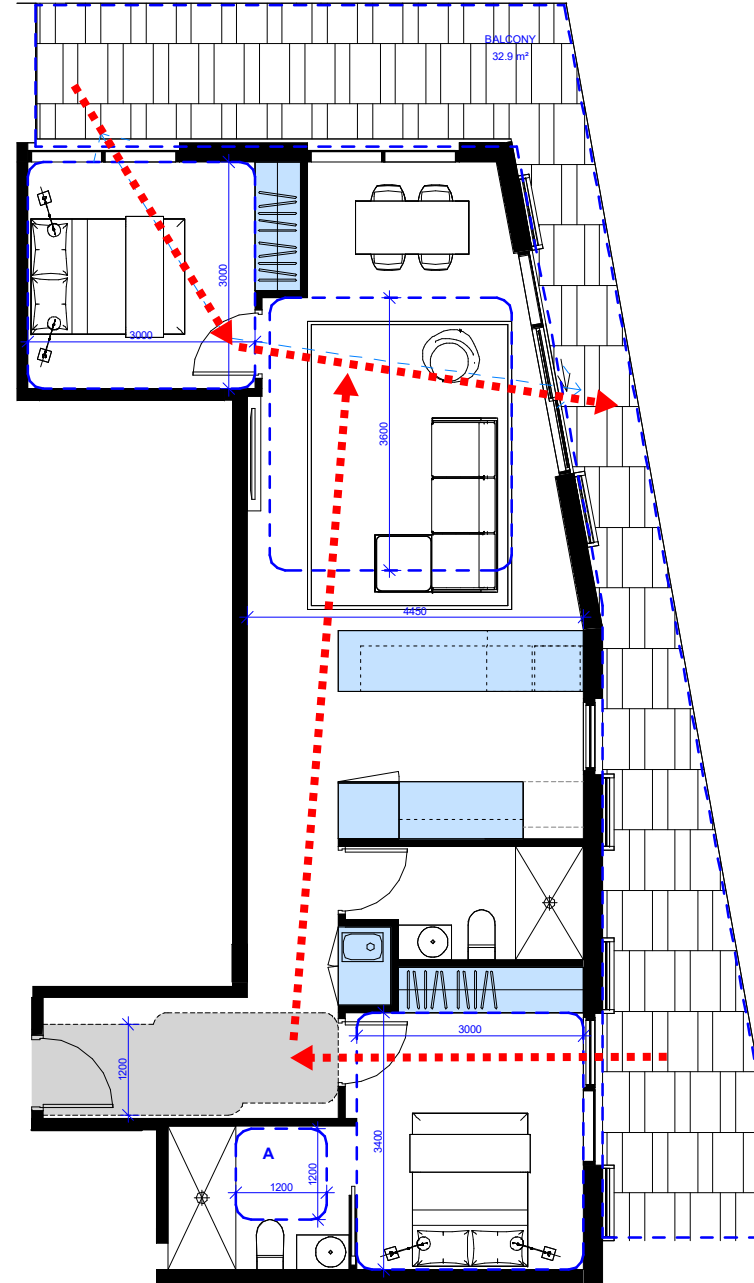


1 03 BADS TYPE 33
 SCALE 1:50

2B2B - TYPE 33 INTERNAL STORAGE SCHEDULE

CASEWORK	3.0 m²
ISLAND BENCH	0.9 m²
KITCHEN BENCH	0.9 m²
LAUNDRY	1.5 m²
WARDROBE	7.9 m²
TOTAL INTERNAL STORAGE	14.1 m²

APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 33	LEVEL 03	Yes	Yes	Yes	Yes	Yes	Yes	No

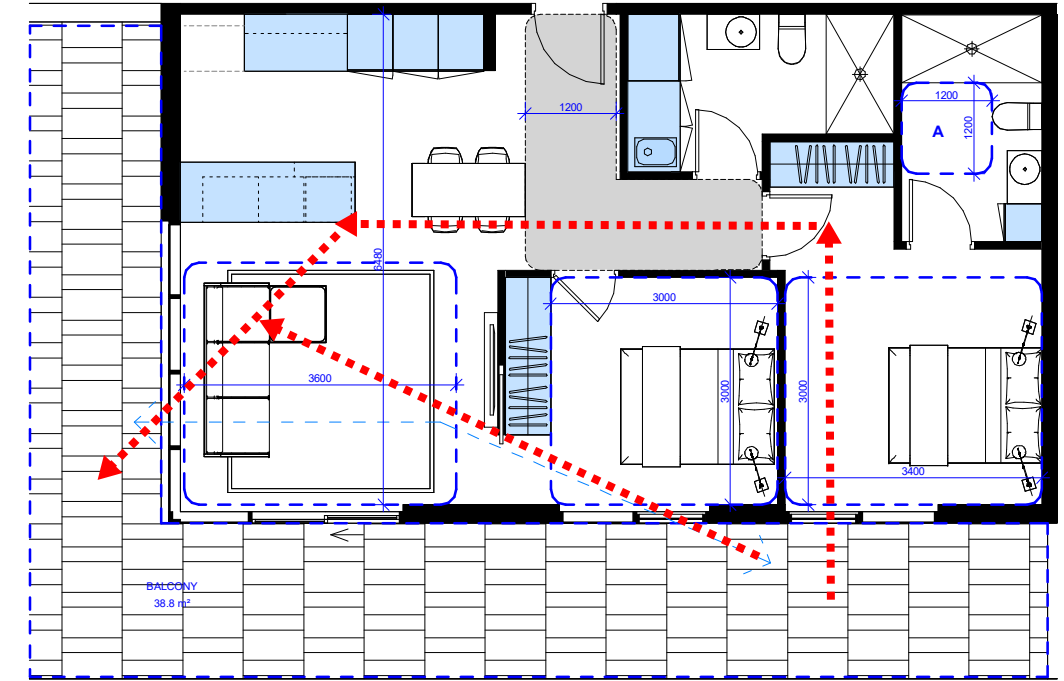


2 03 BADS TYPE 34
 SCALE 1:50

2B2B - TYPE 34 INTERNAL STORAGE SCHEDULE

CASEWORK	1.5 m²
ISLAND BENCH	1.7 m²
KITCHEN BENCH	1.0 m²
LAUNDRY	1.2 m²
WARDROBE	6.7 m²
TOTAL INTERNAL STORAGE	12.1 m²

APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 34	LEVEL 03	Yes	Yes	Yes	Yes	Yes	Yes	Yes



3 03 BADS TYPE 35
 SCALE 1:50

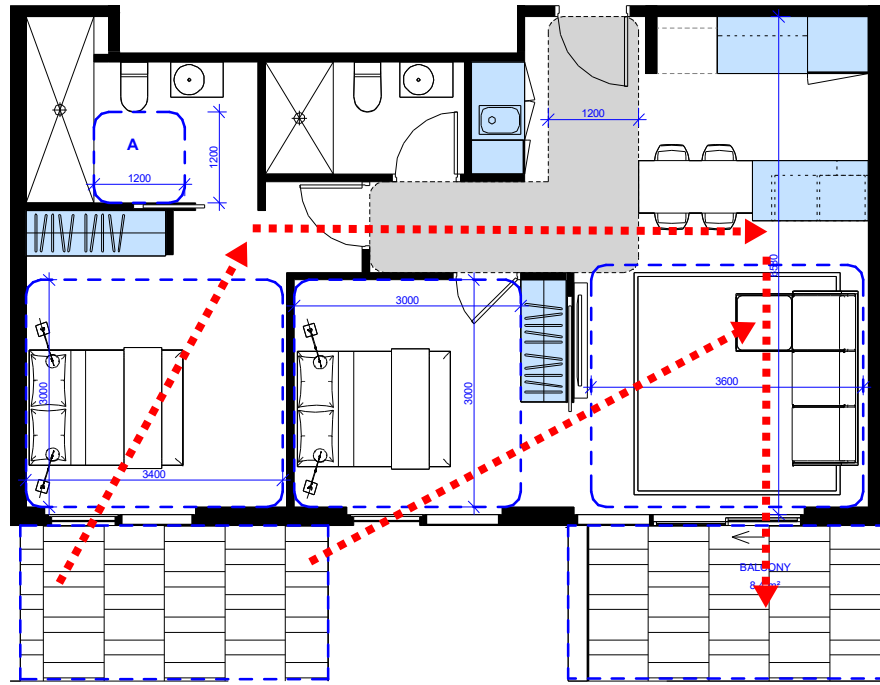
2B2B - TYPE 35 INTERNAL STORAGE SCHEDULE

CASEWORK	5.3 m²
ISLAND BENCH	1.0 m²
KITCHEN BENCH	0.8 m²
LAUNDRY	1.5 m²
WARDROBE	6.0 m²
TOTAL INTERNAL STORAGE	14.7 m²

APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 35	LEVEL 03	Yes	Yes	Yes	Yes	Yes	Yes	Yes

20031-14/01/2025 9:16:28 AM PRELIMINARY | NOT FOR CONSTRUCTION

BREEZE PATH <15m SHOWN IN RED

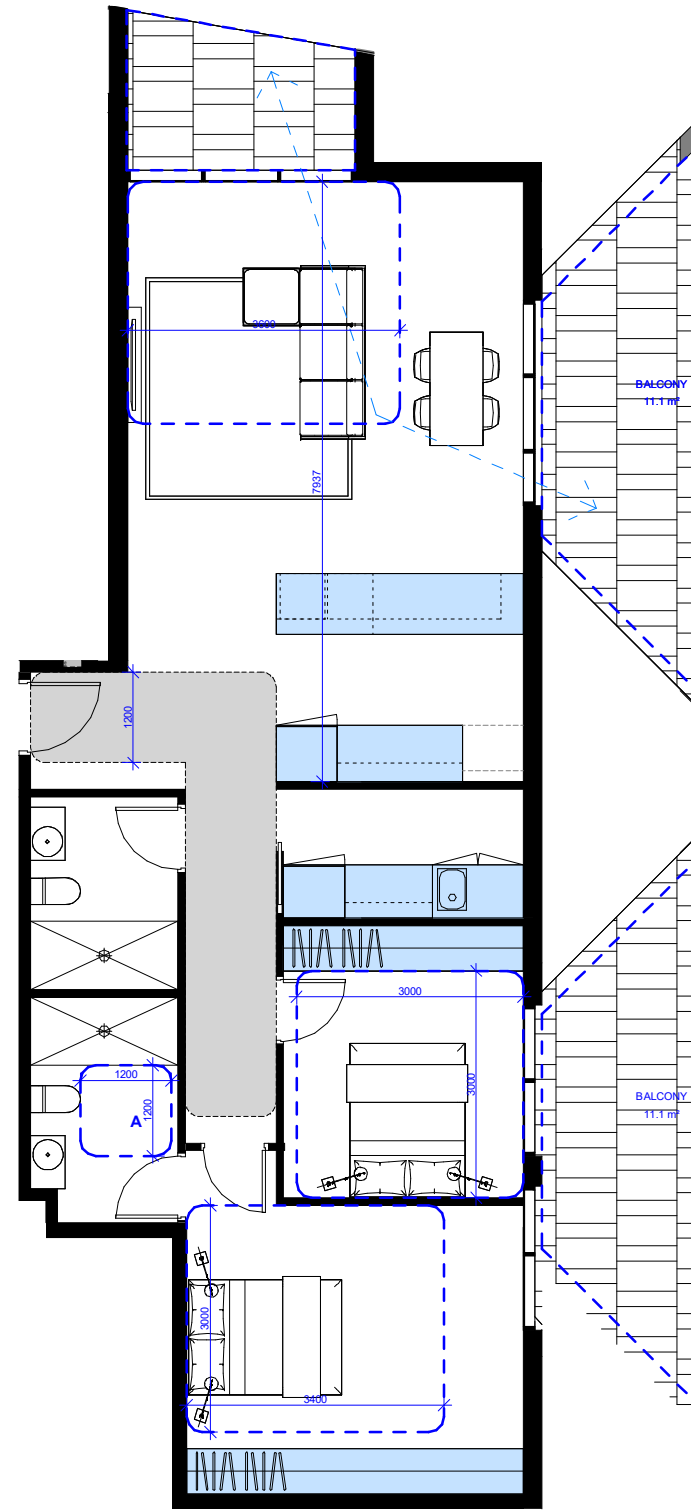


1 03 BADS TYPE 36
SCALE 1:50

2B2B - TYPE 36 INTERNAL STORAGE SCHEDULE

CASEWORK	5.3 m ²
ISLAND BENCH	1.0 m ²
KITCHEN BENCH	0.8 m ²
LAUNDRY	1.5 m ²
WARDROBE	6.0 m ²
TOTAL INTERNAL STORAGE	14.7 m ²

APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 36	LEVEL 03	Yes	Yes	Yes	Yes	Yes	Yes	No



2 03 BADS TYPE 37
SCALE 1:50

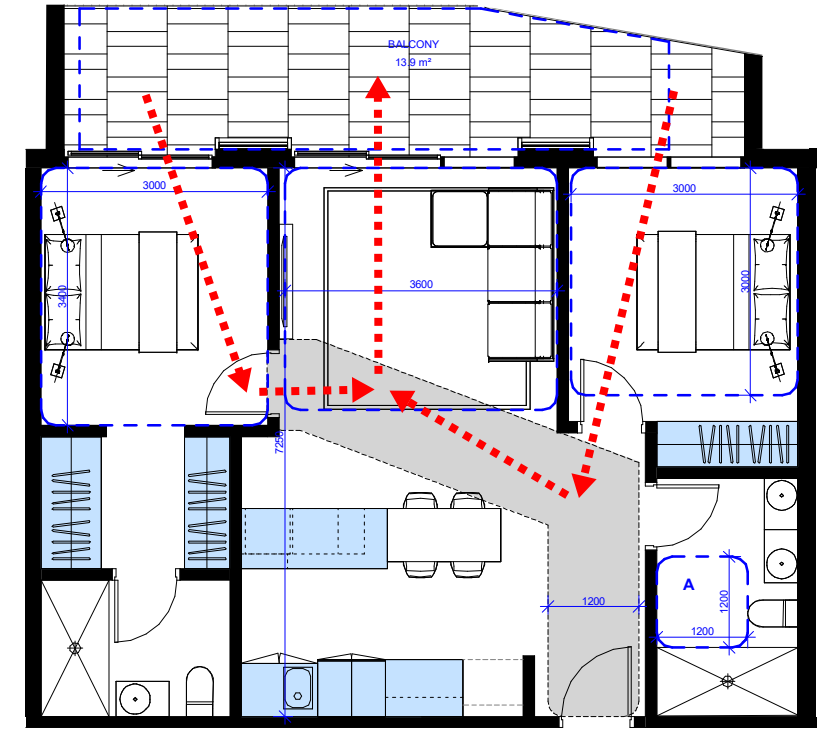
**NOT COMPLIANT WITH
BESS TOOLS CRITERIA,
BREEZE PATH >15m**

2B2B - TYPE 37 INTERNAL STORAGE SCHEDULE

CASEWORK	2.8 m ²
ISLAND BENCH	1.7 m ²
KITCHEN BENCH	1.7 m ²
LAUNDRY	1.5 m ²
WARDROBE	12.3 m ²
TOTAL INTERNAL STORAGE	20.1 m ²

APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 37	LEVEL 03	Yes	Yes	Yes	Yes	Yes	Yes	Yes

NOTES:
DOORS:
ALL APARTMENT ENTRANCE DOORS, ACCESSIBLE BATHROOMS DOORS & MASTER BEDROOM DOORS SHALL PROVIDE A CLEAR OPENING WIDTH OF AT LEAST 850MM & IN THE CASE OF DESIGN OPTIONS B, SHALL BE FITTED WITH READILY REMOVABLE HINGES.
BALCONY SIZES:
BALCONY SIZES VARY ON SOME APARTMENT TYPES SHOWN, THE MINIMUM BALCONY SIZE HAS BEEN SHOWN TO ILLUSTRATE COMPLIANCE.
CROSS VENTILATION:
PATHS INDICATED ARE MIN 5M & MAX 18M INTERNAL LENGTH.
BETTER APARTMENT STANDARDS:
STANDARD D18: ACCESSIBILITY ASSESSMENT
STANDARD D20: P.O.S ASSESSMENT
STANDARD D21: STORAGE ASSESSMENT
STANDARD D26: ROOM SIZE ASSESSMENT
STANDARD D27: ROOM DEPTH ASSESSMENT
STANDARD D28: WINDOWS ASSESSMENT
STANDARD D29: CROSS VENTILATION ASSESSMENT



3 03 BADS TYPE 38
SCALE 1:50

2B2B - TYPE 38 INTERNAL STORAGE SCHEDULE

CASEWORK	1.6 m ²
ISLAND BENCH	0.7 m ²
KITCHEN BENCH	0.6 m ²
LAUNDRY	1.2 m ²
WARDROBE	9.6 m ²
TOTAL INTERNAL STORAGE	13.8 m ²

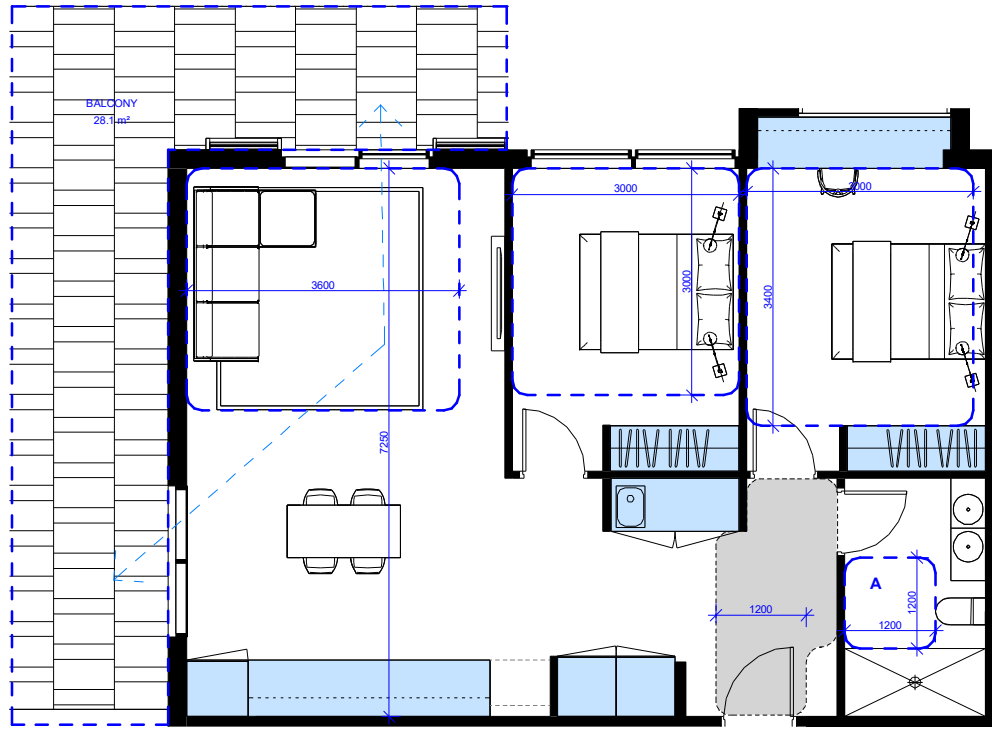
APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 38	LEVEL 03	Yes	Yes	Yes	Yes	Yes	Yes	No

PRELIMINARY | NOT FOR CONSTRUCTION

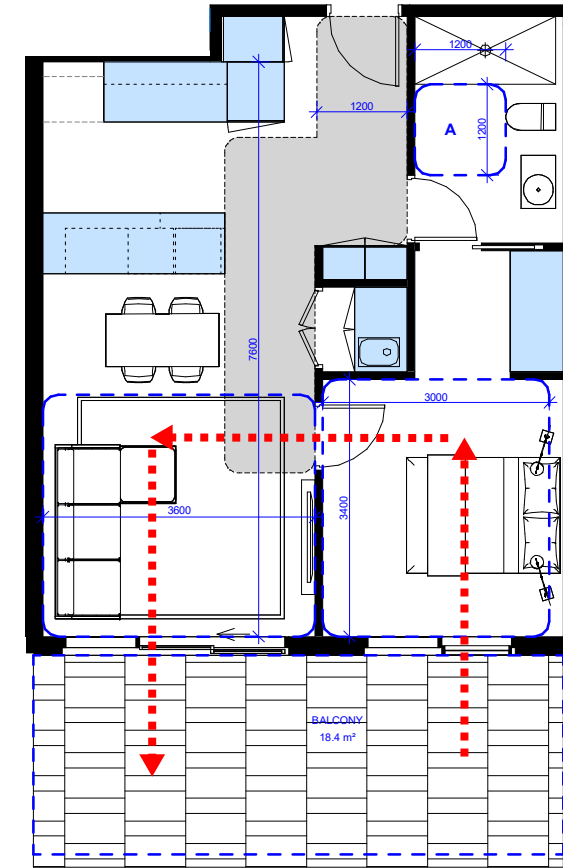
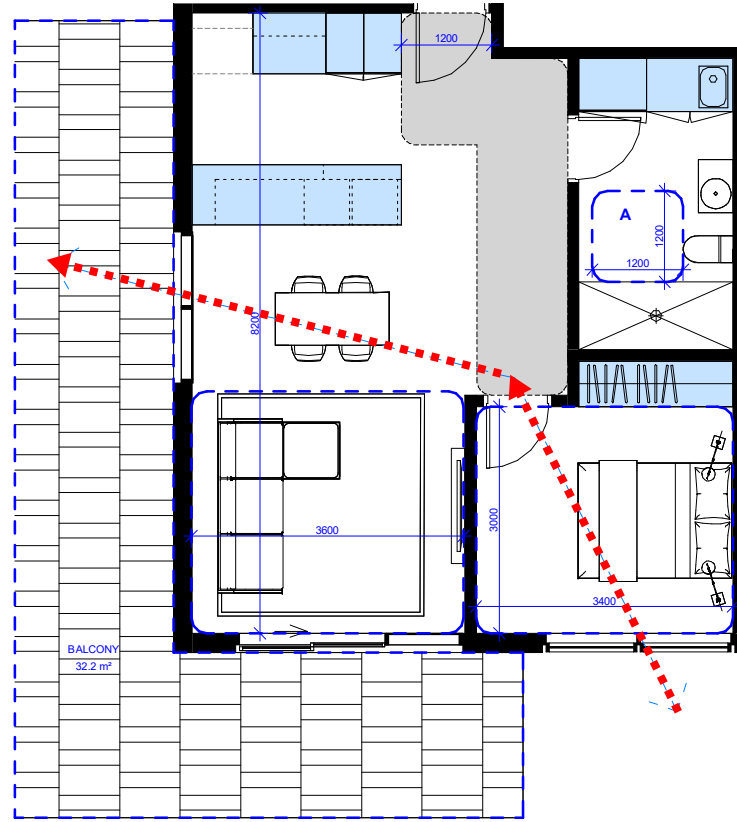
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BREEZE PATH <15m SHOWN IN RED

NOTES:
 DOORS:
 ALL APARTMENT ENTRANCE DOORS, ACCESSIBLE BATHROOMS DOORS & MASTER BEDROOM DOORS SHALL PROVIDE A CLEAR OPENING WIDTH OF AT LEAST 800MM & IN THE CASE OF DESIGN OPTIONS B, SHALL BE FITTED WITH READILY REMOVABLE HINGES.
 BALCONY SIZES:
 BALCONY SIZES VARY ON SOME APARTMENT TYPES SHOWN. THE MINIMUM BALCONY SIZE HAS BEEN SHOWN TO ILLUSTRATE COMPLIANCE.
 CROSS VENTILATION:
 PATHS INDICATED ARE MIN 5M & MAX 18M INTERNAL LENGTH.
 BETTER APARTMENT STANDARDS:
 STANDARD D18: ACCESSIBILITY ASSESSMENT
 STANDARD D20: P.O.S ASSESSMENT
 STANDARD D21: STORAGE ASSESSMENT
 STANDARD D26: ROOM SIZE ASSESSMENT
 STANDARD D27: ROOM DEPTH ASSESSMENT
 STANDARD D28: WINDOWS ASSESSMENT
 STANDARD D29: CROSS VENTILATION ASSESSMENT



NOT COMPLIANT WITH BESS TOOLS CRITERIA, NON OPERABLE WINDOW IN ONE OF THE BEDROOMS



1 03 BADS TYPE 39
SCALE 1:50

2 03 BADS TYPE 40
SCALE 1:50

3 03 BADS TYPE 41
SCALE 1:50

2B1B - TYPE 39 INTERNAL STORAGE SCHEDULE

CASEWORK	4.4 m ²
KITCHEN BENCH	3.8 m ²
LAUNDRY	2.3 m ²
WARDROBE	5.7 m ²
TOTAL INTERNAL STORAGE	16.3 m ²

1B1B - TYPE 40 INTERNAL STORAGE SCHEDULE

CASEWORK	3.4 m ²
ISLAND BENCH	1.3 m ²
KITCHEN BENCH	0.6 m ²
LAUNDRY	1.4 m ²
WARDROBE	3.3 m ²
TOTAL INTERNAL STORAGE	10.0 m ²

1B1B - TYPE 41 INTERNAL STORAGE SCHEDULE

CASEWORK	3.8 m ²
ISLAND BENCH	1.1 m ²
KITCHEN BENCH	1.1 m ²
LAUNDRY	1.4 m ²
WARDROBE	3.0 m ²
TOTAL INTERNAL STORAGE	10.4 m ²

APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 39	LEVEL 03	Yes	Yes	Yes	Yes	Yes	Yes	Yes

APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 40	LEVEL 03	Yes	Yes	Yes	Yes	Yes	Yes	No

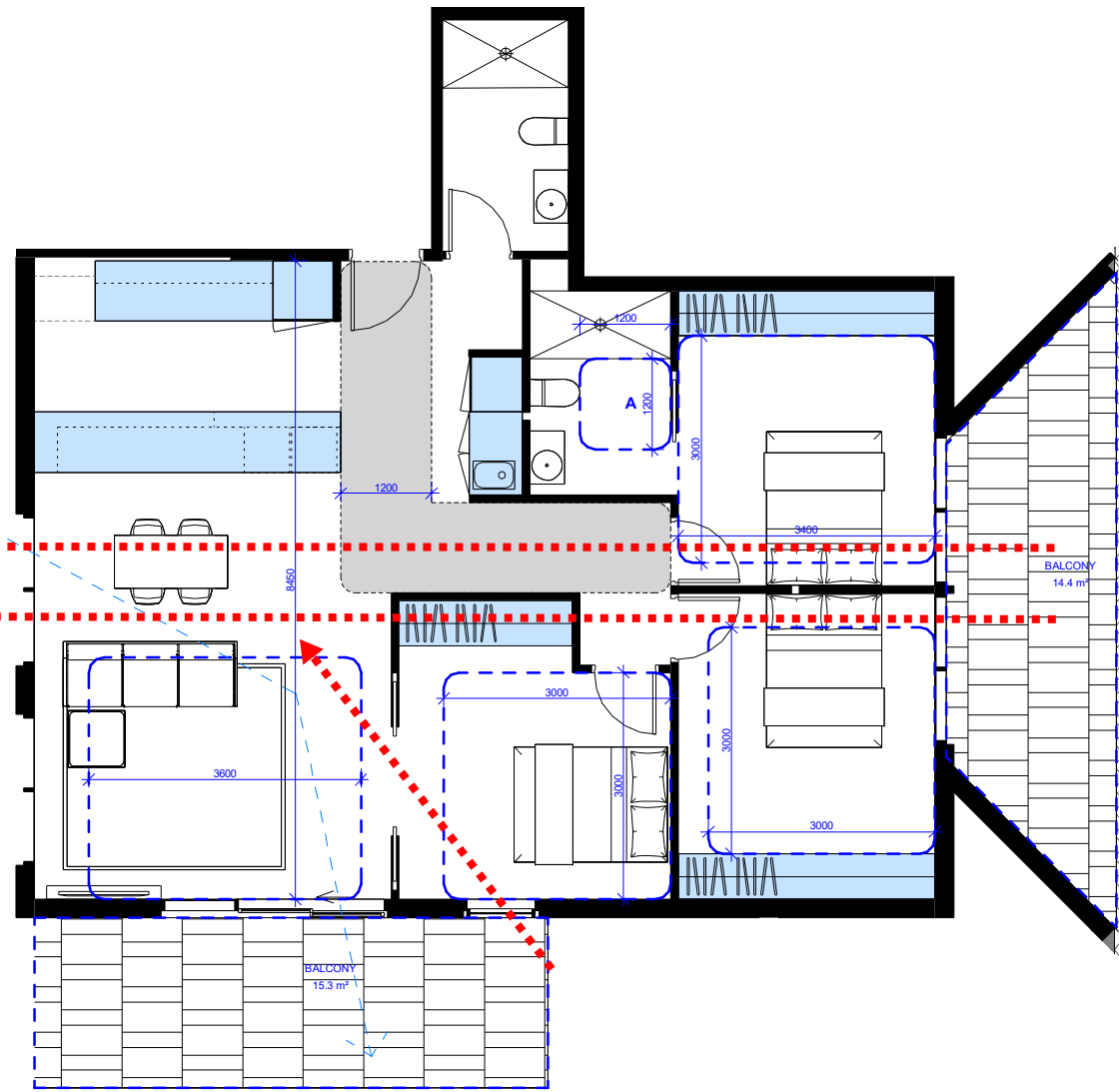
APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 41	LEVEL 03	Yes	Yes	Yes	Yes	Yes	Yes	No

PRELIMINARY | NOT FOR CONSTRUCTION

20031-14/01/2025 9:16:41 AM

BREEZE PATH <15m SHOWN IN RED

NOTES:
 DOORS:
 ALL APARTMENT ENTRANCE DOORS, ACCESSIBLE BATHROOMS DOORS & MASTER BEDROOM DOORS SHALL PROVIDE A CLEAR OPENING WIDTH OF AT LEAST 800MM & IN THE CASE OF DESIGN OPTION 6, SHALL BE FITTED WITH READILY REMOVABLE HINGES.
 BALCONY SIZES:
 BALCONY SIZES VARY ON SOME APARTMENT TYPES SHOWN. THE MINIMUM BALCONY SIZE HAS BEEN SHOWN TO ILLUSTRATE COMPLIANCE.
 CROSS VENTILATION:
 PATHS INDICATED ARE MIN 5M & MAX 18M INTERNAL LENGTH.
 BETTER APARTMENT STANDARDS:
 STANDARD D18: ACCESSIBILITY ASSESSMENT
 STANDARD D20: P.O.S ASSESSMENT
 STANDARD D21: STORAGE ASSESSMENT
 STANDARD D26: ROOM SIZE ASSESSMENT
 STANDARD D27: ROOM DEPTH ASSESSMENT
 STANDARD D28: WINDOWS ASSESSMENT
 STANDARD D29: CROSS VENTILATION ASSESSMENT

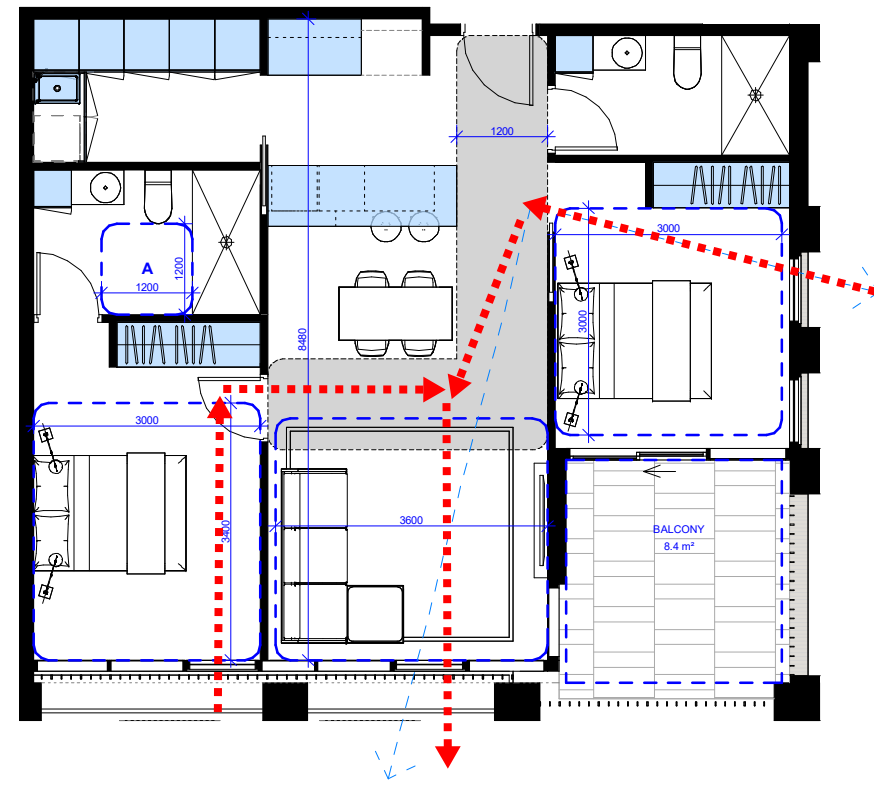


1 03 BADS TYPE 42
 SCALE 1:50

3B2B - TYPE 42 INTERNAL STORAGE SCHEDULE

CASEWORK	2.7 m²
ISLAND BENCH	2.3 m²
KITCHEN BENCH	1.7 m²
LAUNDRY	1.3 m²
WARDROBE	14.8 m²
TOTAL INTERNAL STORAGE	22.8 m²

APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 42	LEVEL 03	Yes	Yes	Yes	Yes	Yes	Yes	Yes



2 01 BADS TYPE 43
 SCALE 1:50

2B2B - TYPE 43 INTERNAL STORAGE SCHEDULE

CASEWORK	6.2 m²
ISLAND BENCH	1.2 m²
KITCHEN BENCH	0.7 m²
LAUNDRY	1.1 m²
WARDROBE	6.0 m²
TOTAL INTERNAL STORAGE	15.3 m²

APT TYPE	Level	D18	D20	D21	D26	D27	D28	D29
APT 43	LEVEL 01	Yes	Yes	Yes	Yes	Yes	Yes	Yes

20031-14/01/2025 9:16:46 AM PRELIMINARY | NOT FOR CONSTRUCTION

City of Yarra ESD Formal Referral Response

Council Reference PLN24/0680, dated 28.10.2024.

Ecoresults' comments below in [blue](#).

(2) Application ESD Deficiencies

- Provide effective external shading to east and west glazing (e.g. retractable awnings) and north glazing (e.g. fixed horizontal projections). [Noted, refer to SMP page 6 & plans.](#)
- Include a solar photovoltaic (PV) system on the roof, maximising the total kW capacity of the system to the available roof space. [Noted, refer to SMP page 4 & roof plan showing 22kW on Roof 1 + 28kW on Roof 2.](#)

(3) Outstanding Information

- Remove BESS IEQ Credit 2.2 (Cross Flow Ventilation) as not all habitable rooms meet the credit criteria. [93% of dwellings meet BESS criteria for natural cross flow ventilation. BADS assessment standard differs from BESS standard. BADS only assess natural ventilation to living rooms while BESS includes both living rooms and bedrooms. Refer to Cross Flow Ventilation Diagrams page 22.](#)
- Update daylight calculations and/or clarify assumptions ensuring rooms are only assigned Auto-Pass if Deemed-to-Satisfy criteria is met (e.g. glass Visible Light Transmittance; room depths accounting for overhangs). [Noted, daylight calculations updated. Any rooms assigned Auto-Pass have two windows to the space \(BESS Tool notes: The BESS daylight calculator only works for rooms which have a single aspect only \(i.e 1 window to the space\) as rooms with more than one aspect are deemed to have adequate daylight\).](#)
- Provide a response on approach to car park ventilation. [No car park ventilation credits claimed in BESS assessment.](#)
- Remove claim of BESS Water Credit 3.1 (Water Efficient Landscaping) as irrigation system is connected to both rainwater and potable water supplies. [Noted, Water Efficient Landscaping credit removed.](#)
- Clarify how the development satisfies the criteria of BESS Water Credit 4.1 - Building Systems Water Use Reduction. [BESS Water Credit 4.1 - Building Systems Water Use Reduction removed.](#)
- Update Water Sensitive Urban Design (WSUD) assessment, including the STORM Rating to:
 - Align with the current plans and surface types (e.g. ground level surfaces). [Noted, updated.](#)
 - Include areas above the basement and the planter boxes as impervious surfaces. [Noted, updated](#)
 - Ensure proposed catchments compromise correct surface areas (e.g. roof to rainwater tank). [Noted, updated](#)
 - Consider opportunity to increase rainwater tank capacity to maximise harvesting potential of available rainwater. [Noted, rainwater tank capacity for irrigation purposed increased to 15kL. Refer to SMP WSUD/STORM measures.](#)
 - Include annotations on plan of specific reuse connections. [Noted, refer to plans.](#)
- Clarify the extent (m²) of vegetation cover, ensuring alignment to Landscape Plans. [15.92%](#)
- Clarify whether rainwater reuse connections (i.e. toilet flushing and irrigation) are proposed to be sourced from a combination of tanks or dedicated individual tanks, if filtration prior to reuse is required, and ensuring reuse connections are reflected on plans. [Noted, 35kL Tank = First flush device and UV filter. 15kL Tank = First flush device, UV filter, screen filter and cartridge filter. Refer to plans for tank locations.](#)

Conclusion

Our sustainable building consultants have found that:

- The proposal has met the benchmarks set out by the HERO (NatHERS), BESS and STORM assessment tools.
- The project has included a range of other ESD features over and above those measured by the HERO (NatHERS), BESS and STORM benchmarks.
 - These features combine significantly to further enhance the energy efficiency of the development,
 - Lessen its environmental impact, and
 - Encourage sustainable lifestyle choices by the occupants of the building during its life-cycle.
- The development will meet the objectives of Clause 15.01-2L-01 (ESD) and Clause 53.18 (WSUD) if it is constructed in accordance with the application drawings and the measures detailed in this SMP.

Appendix

- Appendix A – BESS Assessment
- Appendix B – Melbourne Water Rainwater Tank Fact Sheet
- Appendix C – City of Port Phillip RWT Maintenance Manual

Legal statement

This Sustainability Management Plan (SMP) has been prepared in conjunction with Sustainable Design Assessment in the Planning Process (SDAPP) protocols and any required tools including ESD, WSUD, Energy and/or Daylight assessment as required.

The development is assessed to achieve the stated ratings only if it is built in accordance with the specifications listed in the attached assessment tool printouts, and according to the plans provided by the designer to EcoResults. This report must be read in conjunction with all assessment tool printouts. Any variation to the design or construction of the development will deem this SMP void unless the variations are assessed by EcoResults. Please contact EcoResults if there are any questions or variations that are required.

EcoResults is not responsible for any loss or damage arising directly or indirectly from the use of this SMP in circumstances where there has been a variation to the design or construction of the development, which has not been assessed by EcoResults. To the extent permitted by law, EcoResults excludes all liability, including any liability for negligence or for any loss including indirect or consequential damages, arising directly or indirectly from the use of this SMP in circumstances where there has been a variation to the design or construction of the development, which has not been assessed by EcoResults.

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The logo for EcoResults features the word "ecoresults" in a lowercase, sans-serif font. The "eco" portion is colored green, while "results" is white. A thin vertical line is positioned to the right of the "eco" text, extending upwards and slightly overlapping the top of the "r" in "results".

ecoresults

BESS Report

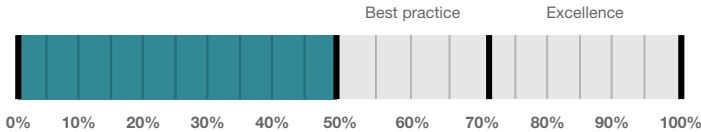
Built Environment Sustainability Scorecard



This BESS report outlines the sustainable design commitments of the proposed development at 2-10 Clarke St Abbotsford Victoria 3067. The BESS report and accompanying documents and evidence are submitted in response to the requirement for a Sustainable Design Assessment or Sustainability Management Plan at Yarra City Council.

Note that where a Sustainability Management Plan is required, the BESS report must be accompanied by a report that further demonstrates the development's potential to achieve the relevant environmental performance outcomes and documents the means by which the performance outcomes can be achieved.

Your BESS Score



53%

Project details

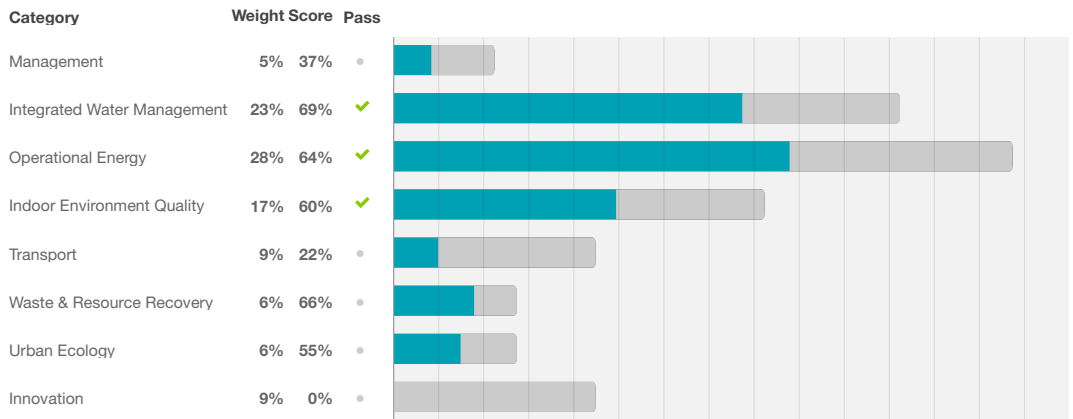
Name Copy of 2-10 Clarke St, Abbotsford VIC 3067, Australia
Address 2-10 Clarke St Abbotsford Victoria 3067
Project ID 248B630B-R1
BESS Version BESS-9

Site type Multi unit development (apartment building)
Account luana@ecoreresults.com.au
Application no.
Site area 3,900 m²
Building floor area 5,003 m²
Date 20 January 2025
Software version 2.0.1-B.574



Performance by category

● This project ● Maximum available



Buildings

Name	Height	Footprint	% of total footprint
Building	4	2,000 m ²	100%

Dwellings & Non Res Spaces

Dwellings

Name	Quantity	Area	Building	% of total area
Apartment				
27 (18, 23, 24, 25, 26, 28, 29, 30, 37, 38, 44, 45, 46)	14	83.0 m ²	Building	23%
12 (04, 05, 06, 07, 08, 10, 11, 15, 16, 17)	11	93.5 m ²	Building	20%
51 (40, 41, 50, 53, 54, 60)	7	83.5 m ²	Building	11%
21 (31, 32, 33, 47, 48, 58, 59)	8	72.5 m ²	Building	11%
36 (01, 02, 03, 09, 19, 20, 57)	8	57.5 m ²	Building	9%
13 (14)	2	94.0 m ²	Building	3%
56	1	114 m ²	Building	2%
55	1	104 m ²	Building	2%
52	1	108 m ²	Building	2%
49	1	131 m ²	Building	2%
39	1	118 m ²	Building	2%
35	1	112 m ²	Building	2%
22 (34)	2	72.5 m ²	Building	2%
43	1	100 m ²	Building	1%
42	1	68.0 m ²	Building	1%
Total	60	5,003 m²	100%	

Supporting Evidence

Shown on Floor Plans

Credit	Requirement	Response	Status
Management 3.1	Annotation: Individual utility meters to be provided to all individual dwellings		-
Integrated Water Management 2.1	Location of any stormwater management systems (rainwater tanks, raingardens, buffer strips)		-
Operational Energy 3.4	Location of clothes line (if proposed)		-
Operational Energy 4.2	Location and size of solar photovoltaic system		-
Indoor Environment Quality 1.1	If using BESS daylight calculator, references to floorplans and elevations showing window sizes and sky angles.		-
Indoor Environment Quality 1.2	If using BESS daylight calculator, references to floorplans and elevations showing window sizes and sky angles.		-
Indoor Environment Quality 2.1	Dwellings meeting the requirements for being 'naturally ventilated'		-
Transport 2.1	Location of electric vehicle charging infrastructure		-

Credit	Requirement	Response	Status
Waste & Resource Recovery 2.1	Location of food and garden waste facilities		-
Waste & Resource Recovery 2.2	Location of recycling facilities		-
Urban Ecology 1.1	Location and size of communal spaces		-
Urban Ecology 2.1	Location and size of vegetated areas		-
Urban Ecology 2.3	Location and size of green facade		-
Urban Ecology 2.4	Location of taps and floor waste on balconies / courtyards		-

Supporting Documentation

Credit	Requirement	Response	Status
Management 2.2	Preliminary NatHERS assessments		-
Integrated Water Management 2.1	STORM report or MUSIC model		-
Operational Energy 3.6	Average lighting power density and lighting type(s) to be used		-
Operational Energy 4.2	Specifications of the solar photovoltaic system(s)		-
Indoor Environment Quality 1.1	If using an alternative daylight modelling program, a short report detailing assumptions used and results achieved.		-
Indoor Environment Quality 1.2	If using an alternative daylight modelling program, a short report detailing assumptions used and results achieved.		-
Indoor Environment Quality 2.1	A list of naturally ventilated dwellings		-

Credit summary

Management Overall contribution 4.5%

		37%
1.1 Pre-Application Meeting		0%
2.2 Thermal Performance Modelling - Multi-Dwelling Residential		100%
3.1 Metering - Residential		100%
3.3 Metering - Common Areas		0%
4.1 Building Users Guide		0%

IWM Overall contribution 22.5%

		69%	✓ Pass
1.1 Potable Water Use		40%	✓ Achieved
2.1 Stormwater Treatment		100%	✓ Achieved
3.1 Water Efficient Landscaping		0%	
4.1 Building Systems Water Use		0%	

Operational Energy Overall contribution 27.5%

		Minimum required 50%	64%	✓ Pass
1.2 Thermal Performance Rating - Residential			54%	✓ Achieved
2.1 Greenhouse Gas Emissions			0%	
2.6 Electrification			100%	
2.7 Energy consumption			100%	
3.1 Carpark Ventilation			0%	
3.4 Clothes Drying			29%	
3.6 Internal Lighting - Apartments			100%	
4.2 Renewable Energy Systems - Solar			100%	
4.4 Renewable Energy Systems - Other			N/A	✚ Scoped Out
No other (non-solar PV) renewable energy is in use.				

IEQ Overall contribution 16.5%

		Minimum required 50%	60%	✓ Pass
1.1 Daylight Access - Living Areas			66%	
1.2 Daylight Access - Bedrooms			66%	
1.3 Winter Sunlight			0%	
2.1 Ventilation - Natural - Apartments			66%	

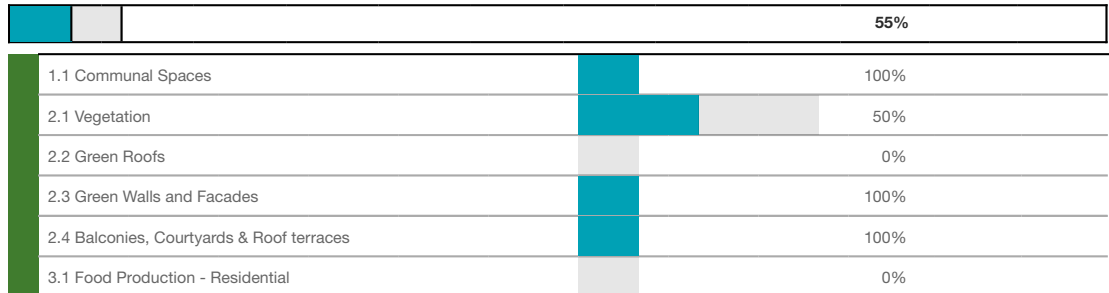
Transport Overall contribution 9.0%

		22%
1.1 Bicycle Parking - Residential		0%
1.2 Bicycle Parking - Residential Visitor		0%
1.3 Bicycle Parking - Convenience Residential		0% <input type="checkbox"/> Disabled
Credit 1.1 must be achieved first.		
2.1 Electric Vehicle Infrastructure		100%
2.2 Car Share Scheme		0%
2.3 Motorbikes / Mopeds		0%

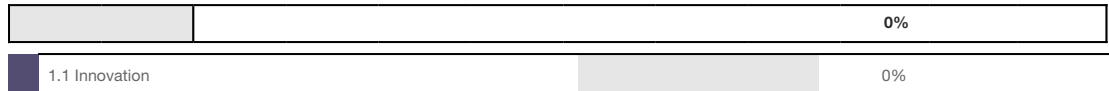
Waste & Resource Recovery Overall contribution 5.5%

		66%
1.1 Construction Waste - Building Re-Use		0%
2.1 Operational Waste - Food & Garden Waste		100%
2.2 Operational Waste - Convenience of Recycling		100%

Urban Ecology Overall contribution 5.5%



Innovation Overall contribution 9.0%



Credit breakdown

Management Overall contribution 4.5%

			37%
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	1.1 Pre-Application Meeting		0%
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	Score Contribution	This credit contributes 37.5% towards the category score.	
	Criteria	Has an ESD professional been engaged to provide sustainability advice from schematic design to construction? AND Has the ESD professional been involved in a pre-application meeting with Council?	
	Question	Criteria Achieved ?	
	Project	No	

	2.2 Thermal Performance Modelling - Multi-Dwelling Residential		100%
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	Score Contribution	This credit contributes 25% towards the category score.	
	Criteria	Have preliminary NatHERS ratings been undertaken for all thermally unique dwellings?	
	Question	Criteria Achieved ?	
	Apartment	Yes	

	3.1 Metering - Residential		100%
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	Score Contribution	This credit contributes 12.5% towards the category score.	
	Criteria	Have utility meters been provided for all individual dwellings?	
	Question	Criteria Achieved ?	
	Apartment	Yes	

	3.3 Metering - Common Areas		0%
--	------------------------------------	--	----

	Score Contribution	This credit contributes 12.5% towards the category score.	
	Criteria	Have all major common area services been separately submetered?	
	Question	Criteria Achieved ?	
	Apartment	No	

	4.1 Building Users Guide		0%
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	Score Contribution	This credit contributes 12.5% towards the category score.	
	Criteria	Will a building users guide be produced and issued to occupants?	
	Question	Criteria Achieved ?	
	Project	No	

IWM Overall contribution 22.5%

69% ✔ Pass

Do you have a reticulated third pipe or an on-site water recycling system?:	No
Are you installing a swimming pool?:	No
Stormwater profile	
Which stormwater modelling software are you using?:	Melbourne Water STORM tool
STORM score achieved:	101
Flow:	0 %
Total Suspended Solids:	0 %
Total Phosphorus:	0 %
Total Nitrogen:	0 %
Rainwater tank profile	
What is the total roof area connected to the rainwater tank?:	
Roof RWT	1,207 m ²
Irrigation Tanks	723 m ²
Tank Size:	
Roof RWT	35,000 Litres
Irrigation Tanks	15,000 Litres
Irrigation area connected to tank:	
Roof RWT	0.0 m ²
Irrigation Tanks	90.0 m ²
Is connected irrigation area a water efficient garden?:	
Roof RWT	No
Irrigation Tanks	No
Other external water demand connected to tank?:	
Roof RWT	0.0 Litres/Day
Irrigation Tanks	0.0 Litres/Day
Fixtures, fittings & connections profile	
Building: All	Building
Showerhead: All	4 Star WELS (>= 6.0 but <= 7.5)
Bath: All	Scope out
Kitchen Taps: All	>= 5 Star WELS rating
Bathroom Taps: All	>= 5 Star WELS rating
Dishwashers: All	>= 3 Star WELS rating
WC: All	>= 4 Star WELS rating
Urinals: All	Scope out
Washing Machine Water Efficiency: All	>= 3 Star WELS rating
Which non-potable water source is the dwelling/space connected to?: All	Roof RWT

Non-potable water source connected to Toilets:	
12 (04, 05, 06, 07, 08, 10, 11, 15, 16, 17)	Yes
21 (31, 32, 33, 47, 48, 58, 59)	
27 (18, 23, 24, 25, 26, 28, 29, 30, 37, 38, 44, 45, 46)	
36 (01, 02, 03, 09, 19, 20, 57)	
13 (14)	No
22 (34)	
35	
39	
42	
43	
49	
51 (40, 41, 50, 53, 54, 60)	
52	
55	
56	
Non-potable water source connected to Laundry (washing machine):	No
All	
Non-potable water source connected to Hot Water System:	All No

1.1 Potable Water Use		40%	✔ Achieved
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Score Contribution	This credit contributes 31.2% towards the category score.
Criteria	What is the reduction in total potable water use due to efficient fixtures, appliances, rainwater use and recycled water use? To achieve points in this credit there must be >25% potable water reduction.
Output	Reference
Project	7655 kL
Output	Proposed (excluding rainwater and recycled water use)
Project	6248 kL
Output	Proposed (including rainwater and recycled water use)
Project	5694 kL
Output	% Reduction in Potable Water Consumption
Project	25 %
Output	% of connected demand met by rainwater
Project	100 %
Output	How often does the tank overflow?
Project	Very Often
Output	Opportunity for additional rainwater connection
Project	3144 kL

2.1 Stormwater Treatment		100%	✔ Achieved
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Score Contribution	This credit contributes 56.2% towards the category score.
Criteria	Has best practice stormwater management been demonstrated?
Output	Min STORM Score
Project	100
Output	STORM Score
Project	101

3.1 Water Efficient Landscaping		0%
Score Contribution	This credit contributes 6.2% towards the category score.	
Criteria	Will water efficient landscaping be installed?	
Question	Criteria Achieved ?	
Project	No	
4.1 Building Systems Water Use		0%
Score Contribution	This credit contributes 6.2% towards the category score.	
Criteria	Where applicable, have measures been taken to reduce potable water consumption by >80% in the buildings air-conditioning chillers and when testing fire safety systems?	
Question	Criteria Achieved ?	
Project	No	

Operational Energy Overall contribution 27.5%

		Minimum required 50%	64% ✔ Pass
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Are you installing any renewable energy system(s) (other than solar photovoltaic)?:	No
Energy Supply:	All-electric
Solar Photovoltaic system profile	
System Size (lesser of inverter and panel capacity): solar	50.0 kW peak
Orientation (which way is the system facing)?: solar	North
Inclination (angle from horizontal): solar	10.0 Angle (degrees)
Dwellings profile	
Building: All	Building
Below the floor is:	
12 (04, 05, 06, 07, 08, 10, 11, 15, 16, 17) 13 (14)	Ground or Carpark
21 (31, 32, 33, 47, 48, 58, 59) 22 (34) 27 (18, 23, 24, 25, 26, 28, 29, 30, 37, 38, 44, 45, 46) 35 36 (01, 02, 03, 09, 19, 20, 57) 39 42 43 49 51 (40, 41, 50, 53, 54, 60) 52 55 56	Another Occupancy
Above the ceiling is: All	Another Occupancy
Exposed sides:	
12 (04, 05, 06, 07, 08, 10, 11, 15, 16, 17) 13 (14) 22 (34) 27 (18, 23, 24, 25, 26, 28, 29, 30, 37, 38, 44, 45, 46) 35 39 52 55 56	3
21 (31, 32, 33, 47, 48, 58, 59) 36 (01, 02, 03, 09, 19, 20, 57) 42 43 49 51 (40, 41, 50, 53, 54, 60)	2

NatHERS Annual Energy Loads - Heat:


12 (04, 05, 06, 07, 08, 10, 11, 15, 16, 17)	38.8 MJ/sqm
13 (14)	47.2 MJ/sqm
21 (31, 32, 33, 47, 48, 58, 59)	26.1 MJ/sqm
22 (34)	30.2 MJ/sqm
27 (18, 23, 24, 25, 26, 28, 29, 30, 37, 38, 44, 45, 46)	24.4 MJ/sqm
35	44.4 MJ/sqm
36 (01, 02, 03, 09, 19, 20, 57)	34.7 MJ/sqm
39	28.7 MJ/sqm
42	2.5 MJ/sqm
43	9.6 MJ/sqm
49	18.3 MJ/sqm
51 (40, 41, 50, 53, 54, 60)	25.3 MJ/sqm
52	21.2 MJ/sqm
55	23.5 MJ/sqm
56	30.1 MJ/sqm

NatHERS Annual Energy Loads - Cool:

12 (04, 05, 06, 07, 08, 10, 11, 15, 16, 17)	8.4 MJ/sqm
13 (14)	8.6 MJ/sqm
21 (31, 32, 33, 47, 48, 58, 59)	27.5 MJ/sqm
22 (34)	32.9 MJ/sqm
27 (18, 23, 24, 25, 26, 28, 29, 30, 37, 38, 44, 45, 46)	19.7 MJ/sqm
55	
35	28.6 MJ/sqm
36 (01, 02, 03, 09, 19, 20, 57)	
39	20.2 MJ/sqm
42	13.7 MJ/sqm
43	15.6 MJ/sqm
49	23.9 MJ/sqm
51 (40, 41, 50, 53, 54, 60)	29.8 MJ/sqm
52	21.3 MJ/sqm
56	22.8 MJ/sqm

NatHERS star rating:		
12 (04, 05, 06, 07, 08, 10, 11, 15, 16, 17)		7.8
13 (14)		7.3
51 (40, 41, 50, 53, 54, 60)		
21 (31, 32, 33, 47, 48, 58, 59)		7.4
56		
22 (34)		6.9
36 (01, 02, 03, 09, 19, 20, 57)		
27 (18, 23, 24, 25, 26, 28, 29, 30, 37, 38, 44, 45, 46)		7.9
35		6.4
39		7.7
42		9.6
43		8.9
49		8.1
52		
55		8.0
Type of Heating System: All		Reverse cycle space
Heating System Efficiency: All		Current Default / MEPS
Type of Cooling System: All		Refrigerative space
Cooling System Efficiency: All		Current Default / MEPS
Type of Hot Water System: All		Electric Heat Pump Band 1
Is the hot water system shared by multiple dwellings?: All		Yes
Clothes Line: All		No drying facilities
Clothes Dryer: All		Clothes dryer 3 stars
1.2 Thermal Performance Rating - Residential		54% ✔ Achieved
Score Contribution	This credit contributes 17.6% towards the category score.	
Criteria	What is the average NatHERS rating?	
Output	Average NATHERS Rating (Weighted)	
Apartment	7.6 Stars	
2.1 Greenhouse Gas Emissions		0%
Score Contribution	This credit contributes 17.6% towards the category score.	
Criteria	What is the % reduction in annual greenhouse gas emissions against the benchmark?	
Output	Reference Building with Reference Services (BCA only)	
Apartment	104,720 kg CO2	
Output	Proposed Building with Proposed Services (Actual Building)	
Apartment	106,008 kg CO2	
Output	% Reduction in GHG Emissions	
Apartment	-2 %	
2.6 Electrification		100%

Score Contribution	This credit contributes 17.6% towards the category score.	
Criteria	Is the development all-electric?	
Question	Criteria Achieved?	
Project	Yes	
2.7 Energy consumption		100%
Score Contribution	This credit contributes 23.5% towards the category score.	
Criteria	What is the % reduction in annual energy consumption against the benchmark?	
Output	Reference Building with Reference Services (BCA only)	
Apartment	991,560 MJ	
Output	Proposed Building with Proposed Services (Actual Building)	
Apartment	483,075 MJ	
Output	% Reduction in total energy	
Apartment	51 %	
3.1 Carpark Ventilation		0%
Score Contribution	This credit contributes 5.9% towards the category score.	
Criteria	If you have an enclosed carpark, is it: (a) fully naturally ventilated (no mechanical ventilation system) or (b) 40 car spaces or less with Carbon Monoxide monitoring to control the operation and speed of the ventilation fans?	
Question	Criteria Achieved ?	
Project	No	
3.4 Clothes Drying		29%
Score Contribution	This credit contributes 5.9% towards the category score.	
Criteria	What is the % reduction in annual energy consumption (gas and electricity) from a combination of clothes lines and efficient driers against the benchmark?	
Output	Reference	
Apartment	25,267 kWh	
Output	Proposed	
Apartment	21,477 kWh	
Output	Improvement	
Apartment	14 %	
3.6 Internal Lighting - Apartments		100%
Score Contribution	This credit contributes 5.9% towards the category score.	
Criteria	Is the maximum illumination power density (W/m2) in at least 90% of the relevant building class at least 20% lower than required by clause J7D3(1)(a) and Table J6.2a of the NCC 2022 Vol 1 (Class 2-9)?	
Question	Criteria Achieved ?	
Apartment	Yes	
4.2 Renewable Energy Systems - Solar		100%

Score Contribution	This credit contributes 5.9% towards the category score.	
Criteria	What % of the estimated energy consumption of the building class it supplies does the solar power system provide?	
Output	Solar Power - Energy Generation per year	
Apartment	60,592 kWh	
Output	% of Building's Energy	
Apartment	45 %	
4.4 Renewable Energy Systems - Other		N/A ✦ Scoped Out
No other (non-solar PV) renewable energy is in use.		
This credit was scoped out	No other (non-solar PV) renewable energy is in use.	

IEQ Overall contribution 16.5%

		Minimum required 50%	60% ✔ Pass
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	Use the BESS Deemed to Satisfy (DtS) method for daylight to Dwellings?:	No
	What approach do you want to use for daylight to Dwellings?:	Use the built in calculation tools
	Rooms	

Room Designation:

Bed 1 (01, 02, 03, 04, 05, 09, 10, 11, 12, 14, 15, 16, 17) **Bedroom**
 Bed 2 battleaxe (04, 05, 14, 15, 16, 17)
 Bed 1 + 2 (06, 07, 08)
 Bed 2 battleaxe (10, 11, 12, 13)
 Bed 1 (13)
 Bed 1 + 2 (18)
 Bed 1 (19)
 DOUBLE ASPECT Bed 2 balcony (23)
 Bed 2 battle axe (21, 22, 31, 32, 33, 34, 37, 38, 47, 48)
 DOUBLE ASPECT Bed 1 (31, 32, 33, 34)
 DOUBLE ASPECT Bed 1 (27, 28, 29, 30)
 Bed 2 battle axe (27, 28, 29, 30, 44, 45, 46)
 Bed 1 + 2 + 3 (35)
 Bed 1 + 2 (40, 41, 43)
 Bed 1 (36, 37, 38, 42, 44, 45, 46, 47, 48, 57)
 Bed 1 + 2 (50, 51, 53, 54, 55, 58, 59, 60)
 Bed 1 (20)
 Bed 1 (21, 22)
 Bed 1 (23, 24, 25, 26)
 Bed 2 balcony (24, 25, 26)
 Bed 1 + 2 + 3 (39)
 Bed 1 + 2 (49)
 Bed 3 (49)
 DOUBLE ASPECT Bed 2 + 3 (52)
 Bed 1 (52)
 Bed 3 (56)
 Bed 1 + 2 (56)

Living (01, 02, 03, 04, 05, 14, 15, 16, 17) **Living**
 Living (06, 07, 08, 10, 11, 13)
 Living (09)
 Living (12)
 DOUBLE ASPECT Living (18, 20, 22, 23, 24, 25, 26, 27, 28, 30, 31)
 Living (19)
 Living (21, 32, 33, 34)
 Living (29, 45)
 DOUBLE ASPECT Living (35, 36, 38, 39, 44, 46, 47, 49)
 Living (40, 41)
 Living (42)
 Living (43)
 DOUBLE ASPECT Living (50, 52, 54, 55, 56, 59)
 Living (51, 60)
 Living (57)
 Living (58)

Quantity:	
Bed 1 (01, 02, 03, 04, 05, 09, 10, 11, 12, 14, 15, 16, 17)	13
Living (01, 02, 03, 04, 05, 14, 15, 16, 17)	9
Bed 2 battleaxe (04, 05, 14, 15, 16, 17)	6
Bed 1 + 2 (06, 07, 08)	
Living (06, 07, 08, 10, 11, 13)	
Bed 1 + 2 (40, 41, 43)	
DOUBLE ASPECT Living (50, 52, 54, 55, 56, 59)	
Living (09)	1
Living (12)	
Bed 1 (13)	
Living (19)	
Bed 1 (19)	
DOUBLE ASPECT Bed 2 balcony (23)	
Living (42)	
Living (43)	
Living (57)	
Living (58)	
Bed 1 (20)	
Bed 3 (49)	
Bed 1 (52)	
Bed 3 (56)	
Bed 2 battleaxe (10, 11, 12, 13)	4
Living (21, 32, 33, 34)	
DOUBLE ASPECT Bed 1 (31, 32, 33, 34)	
DOUBLE ASPECT Bed 1 (27, 28, 29, 30)	
Bed 2 battle axe (27, 28, 29, 30, 44, 45, 46)	
Bed 1 (23, 24, 25, 26)	
DOUBLE ASPECT Living (18, 20, 22, 23, 24, 25, 26, 27, 28, 30, 11 31)	
DOUBLE ASPECT Living (35, 36, 38, 39, 44, 46, 47, 49)	
Bed 1 + 2 (18)	2
Living (29, 45)	
Living (40, 41)	
Living (51, 60)	
Bed 1 (21, 22)	
Bed 1 + 2 (49)	
DOUBLE ASPECT Bed 2 + 3 (52)	
Bed 1 + 2 (56)	
Bed 2 battle axe (21, 22, 31, 32, 33, 34, 37, 38, 47, 48)	10
Bed 1 (36, 37, 38, 42, 44, 45, 46, 47, 48, 57)	
Bed 1 + 2 + 3 (35)	3
Bed 2 balcony (24, 25, 26)	
Bed 1 + 2 + 3 (39)	
Bed 1 + 2 (50, 51, 53, 54, 55, 58, 59, 60)	16

Auto-Pass:

Bed 1 (01, 02, 03, 04, 05, 09, 10, 11, 12, 14, 15, 16, 17)	No
Living (01, 02, 03, 04, 05, 14, 15, 16, 17)	
Bed 2 battleaxe (04, 05, 14, 15, 16, 17)	
Bed 1 + 2 (06, 07, 08)	
Living (06, 07, 08, 10, 11, 13)	
Living (09)	
Living (12)	
Bed 2 battleaxe (10, 11, 12, 13)	
Bed 1 (13)	
Living (19)	
Living (21, 32, 33, 34)	
Bed 1 + 2 (18)	
Bed 1 (19)	
Bed 2 battle axe (21, 22, 31, 32, 33, 34, 37, 38, 47, 48)	
Living (29, 45)	
Bed 2 battle axe (27, 28, 29, 30, 44, 45, 46)	
Bed 1 + 2 + 3 (35)	
Living (42)	
Living (43)	
Living (51, 60)	
Living (57)	
Living (58)	
Bed 1 (20)	
Bed 1 (21, 22)	
Bed 1 (23, 24, 25, 26)	
Bed 2 balcony (24, 25, 26)	
Bed 1 + 2 + 3 (39)	
Bed 1 + 2 (49)	
Bed 3 (49)	
DOUBLE ASPECT Bed 2 + 3 (52)	
Bed 1 (52)	
Bed 3 (56)	
Bed 1 + 2 (56)	
DOUBLE ASPECT Living (18, 20, 22, 23, 24, 25, 26, 27, 28, 30, 31)	Yes
DOUBLE ASPECT Bed 2 balcony (23)	
DOUBLE ASPECT Bed 1 (31, 32, 33, 34)	
DOUBLE ASPECT Bed 1 (27, 28, 29, 30)	
DOUBLE ASPECT Living (35, 36, 38, 39, 44, 46, 47, 49)	
Living (40, 41)	
Bed 1 + 2 (40, 41, 43)	
Bed 1 (36, 37, 38, 42, 44, 45, 46, 47, 48, 57)	
DOUBLE ASPECT Living (50, 52, 54, 55, 56, 59)	
Bed 1 + 2 (50, 51, 53, 54, 55, 58, 59, 60)	

Room Floor Area:	
Bed 1 (01, 02, 03, 04, 05, 09, 10, 11, 12, 14, 15, 16, 17)	10.5 m ²
Living (01, 02, 03, 04, 05, 14, 15, 16, 17)	24.0 m ²
Bed 2 battleaxe (04, 05, 14, 15, 16, 17)	12.5 m ²
Bed 1 + 2 (06, 07, 08)	13.0 m ²
Bed 2 battle axe (21, 22, 31, 32, 33, 34, 37, 38, 47, 48)	
Living (06, 07, 08, 10, 11, 13)	30.0 m ²
Living (09)	28.5 m ²
Living (12)	35.0 m ²
Bed 2 battleaxe (10, 11, 12, 13)	13.5 m ²
Bed 1 (13)	9.5 m ²
Bed 1 + 2 + 3 (39)	
DOUBLE ASPECT Living (18, 20, 22, 23, 24, 25, 26, 27, 28, 30, 0.0 m ² 31)	
DOUBLE ASPECT Bed 2 balcony (23)	
DOUBLE ASPECT Bed 1 (31, 32, 33, 34)	
DOUBLE ASPECT Bed 1 (27, 28, 29, 30)	
DOUBLE ASPECT Living (35, 36, 38, 39, 44, 46, 47, 49)	
Living (40, 41)	
Bed 1 + 2 (40, 41, 43)	
Bed 1 (36, 37, 38, 42, 44, 45, 46, 47, 48, 57)	
DOUBLE ASPECT Living (50, 52, 54, 55, 56, 59)	
Bed 1 + 2 (50, 51, 53, 54, 55, 58, 59, 60)	
Living (19)	21.5 m ²
Living (21, 32, 33, 34)	29.0 m ²
Bed 1 + 2 (18)	11.6 m ²
Bed 1 (19)	
Living (29, 45)	33.0 m ²
Living (43)	
Bed 2 battle axe (27, 28, 29, 30, 44, 45, 46)	12.0 m ²
Bed 3 (49)	
DOUBLE ASPECT Bed 2 + 3 (52)	
Bed 1 (52)	
Bed 1 + 2 + 3 (35)	10.0 m ²
Bed 1 (20)	
Living (42)	33.5 m ²
Living (51, 60)	28.0 m ²
Living (58)	
Living (57)	25.0 m ²
Bed 1 (21, 22)	8.8 m ²
Bed 1 (23, 24, 25, 26)	11.0 m ²
Bed 1 + 2 (49)	
Bed 3 (56)	
Bed 1 + 2 (56)	
Bed 2 balcony (24, 25, 26)	9.3 m ²

Vertical Angle:	
Bed 1 (01, 02, 03, 04, 05, 09, 10, 11, 12, 14, 15, 16, 17) Bed 1 (21, 22)	65.0 Angle (degrees)
Living (01, 02, 03, 04, 05, 14, 15, 16, 17) Living (06, 07, 08, 10, 11, 13) Living (09) Living (12)	80.0 Angle (degrees)
Bed 2 battleaxe (04, 05, 14, 15, 16, 17) Bed 1 + 2 (06, 07, 08) Bed 2 battleaxe (10, 11, 12, 13) Bed 1 (13) Bed 2 battle axe (21, 22, 31, 32, 33, 34, 37, 38, 47, 48) Bed 2 battle axe (27, 28, 29, 30, 44, 45, 46) Bed 1 + 2 + 3 (35) Living (51, 60) Living (57) Living (58) Bed 1 + 2 (49) DOUBLE ASPECT Bed 2 + 3 (52) Bed 1 (52) Bed 3 (56) Bed 1 + 2 (56)	90.0 Angle (degrees)
DOUBLE ASPECT Living (18, 20, 22, 23, 24, 25, 26, 27, 28, 30, 31) DOUBLE ASPECT Bed 2 balcony (23) DOUBLE ASPECT Bed 1 (31, 32, 33, 34) DOUBLE ASPECT Bed 1 (27, 28, 29, 30) DOUBLE ASPECT Living (35, 36, 38, 39, 44, 46, 47, 49) Living (40, 41) Bed 1 + 2 (40, 41, 43) Bed 1 (36, 37, 38, 42, 44, 45, 46, 47, 48, 57) DOUBLE ASPECT Living (50, 52, 54, 55, 56, 59) Bed 1 + 2 (50, 51, 53, 54, 55, 58, 59, 60)	0.0 Angle (degrees)
Living (19) Living (21, 32, 33, 34) Living (29, 45) Living (42) Living (43)	30.0 Angle (degrees)
Bed 1 + 2 (18) Bed 1 (19)	55.0 Angle (degrees)
Bed 1 (20)	25.0 Angle (degrees)
Bed 1 (23, 24, 25, 26) Bed 1 + 2 + 3 (39) Bed 3 (49)	70.0 Angle (degrees)
Bed 2 balcony (24, 25, 26)	27.0 Angle (degrees)

Horizontal Angle:	
Bed 1 (01, 02, 03, 04, 05, 09, 10, 11, 12, 14, 15, 16, 17) Bed 1 + 2 (18) Bed 1 (19) Living (58) Bed 3 (56)	140 Angle (degrees)
Living (01, 02, 03, 04, 05, 14, 15, 16, 17) Living (51, 60)	135 Angle (degrees)
Bed 2 battleaxe (04, 05, 14, 15, 16, 17)	53.0 Angle (degrees)
Bed 1 + 2 (06, 07, 08)	175 Angle (degrees)
Living (06, 07, 08, 10, 11, 13) Bed 1 (13) Bed 1 + 2 (49) DOUBLE ASPECT Bed 2 + 3 (52) Bed 1 (52)	180 Angle (degrees)
Living (09) Bed 1 (21, 22) Bed 1 + 2 + 3 (39)	130 Angle (degrees)
Living (12)	85.0 Angle (degrees)
Bed 2 battleaxe (10, 11, 12, 13) Bed 2 battle axe (27, 28, 29, 30, 44, 45, 46)	45.0 Angle (degrees)
DOUBLE ASPECT Living (18, 20, 22, 23, 24, 25, 26, 27, 28, 30, 31) DOUBLE ASPECT Bed 2 balcony (23) DOUBLE ASPECT Bed 1 (31, 32, 33, 34) DOUBLE ASPECT Bed 1 (27, 28, 29, 30) DOUBLE ASPECT Living (35, 36, 38, 39, 44, 46, 47, 49) Living (40, 41) Bed 1 + 2 (40, 41, 43) Bed 1 (36, 37, 38, 42, 44, 45, 46, 47, 48, 57) DOUBLE ASPECT Living (50, 52, 54, 55, 56, 59) Bed 1 + 2 (50, 51, 53, 54, 55, 58, 59, 60)	0.0 Angle (degrees)
Living (19)	70.0 Angle (degrees)
Living (21, 32, 33, 34) Bed 1 (23, 24, 25, 26)	55.0 Angle (degrees)
Bed 2 battle axe (21, 22, 31, 32, 33, 34, 37, 38, 47, 48) Living (57) Bed 1 (20)	50.0 Angle (degrees)
Living (29, 45) Bed 1 + 2 + 3 (35)	28.0 Angle (degrees) 150 Angle (degrees)
Living (42)	110 Angle (degrees)
Living (43)	145 Angle (degrees)
Bed 2 balcony (24, 25, 26)	48.0 Angle (degrees)
Bed 3 (49)	125 Angle (degrees)
Bed 1 + 2 (56)	120 Angle (degrees)

Window Area:	
Bed 1 (01, 02, 03, 04, 05, 09, 10, 11, 12, 14, 15, 16, 17)	2.5 m ²
Living (01, 02, 03, 04, 05, 14, 15, 16, 17) DOUBLE ASPECT Bed 2 + 3 (52) Bed 1 (52)	5.2 m ²
Bed 2 battleaxe (04, 05, 14, 15, 16, 17)	3.4 m ²
Bed 1 + 2 (06, 07, 08) Living (57) Bed 1 + 2 + 3 (39) Bed 3 (49) Bed 1 + 2 (56)	6.0 m ²
Living (06, 07, 08, 10, 11, 13) Living (09) Living (29, 45)	9.0 m ²
Living (12) Living (21, 32, 33, 34)	8.5 m ²
Bed 2 battleaxe (10, 11, 12, 13) Bed 2 battle axe (27, 28, 29, 30, 44, 45, 46) Bed 1 (23, 24, 25, 26) Bed 1 + 2 (49) Bed 3 (56)	3.0 m ²
Bed 1 (13)	3.3 m ²
DOUBLE ASPECT Living (18, 20, 22, 23, 24, 25, 26, 27, 28, 30, 31) DOUBLE ASPECT Bed 2 balcony (23) DOUBLE ASPECT Bed 1 (31, 32, 33, 34) DOUBLE ASPECT Bed 1 (27, 28, 29, 30) DOUBLE ASPECT Living (35, 36, 38, 39, 44, 46, 47, 49) Living (40, 41) Bed 1 + 2 (40, 41, 43) Bed 1 (36, 37, 38, 42, 44, 45, 46, 47, 48, 57) DOUBLE ASPECT Living (50, 52, 54, 55, 56, 59) Bed 1 + 2 (50, 51, 53, 54, 55, 58, 59, 60)	0.0 m ²
Living (19)	10.9 m ²
Bed 1 + 2 (18) Bed 1 (19)	5.7 m ²
Bed 2 battle axe (21, 22, 31, 32, 33, 34, 37, 38, 47, 48)	4.0 m ²
Bed 1 + 2 + 3 (35)	3.6 m ²
Living (42)	8.0 m ²
Living (43) Living (58)	10.0 m ²
Living (51, 60)	6.2 m ²
Bed 1 (20)	9.4 m ²
Bed 1 (21, 22)	2.1 m ²
Bed 2 balcony (24, 25, 26)	7.8 m ²

Window Orientation:

Bed 1 (01, 02, 03, 04, 05, 09, 10, 11, 12, 14, 15, 16, 17) West
 Living (01, 02, 03, 04, 05, 14, 15, 16, 17)
 Bed 2 battleaxe (04, 05, 14, 15, 16, 17)
 Living (19)
 Living (21, 32, 33, 34)
 Bed 1 + 2 (18)
 Bed 1 (19)
 Bed 2 battle axe (21, 22, 31, 32, 33, 34, 37, 38, 47, 48)
 Bed 1 + 2 + 3 (35)
 Living (51, 60)
 Bed 1 (20)
 Bed 1 (21, 22)
 Bed 1 + 2 (49)

Bed 1 + 2 (06, 07, 08) East
 Living (06, 07, 08, 10, 11, 13)
 Living (09)
 Living (12)
 Bed 2 battleaxe (10, 11, 12, 13)
 Living (29, 45)
 Bed 2 battle axe (27, 28, 29, 30, 44, 45, 46)
 Living (57)
 Bed 1 (23, 24, 25, 26)
 Bed 2 balcony (24, 25, 26)
 Bed 1 + 2 + 3 (39)
 DOUBLE ASPECT Bed 2 + 3 (52)
 Bed 1 (52)
 Bed 3 (56)

Bed 1 (13) South
 Living (58)

DOUBLE ASPECT Living (18, 20, 22, 23, 24, 25, 26, 27, 28, 30, -
 31)
 DOUBLE ASPECT Bed 2 balcony (23)
 DOUBLE ASPECT Bed 1 (31, 32, 33, 34)
 DOUBLE ASPECT Bed 1 (27, 28, 29, 30)
 DOUBLE ASPECT Living (35, 36, 38, 39, 44, 46, 47, 49)
 Living (40, 41)
 Bed 1 + 2 (40, 41, 43)
 Bed 1 (36, 37, 38, 42, 44, 45, 46, 47, 48, 57)
 DOUBLE ASPECT Living (50, 52, 54, 55, 56, 59)
 Bed 1 + 2 (50, 51, 53, 54, 55, 58, 59, 60)

Living (42) North
 Living (43)
 Bed 3 (49)
 Bed 1 + 2 (56)

Glass Type:

Bed 1 (01, 02, 03, 04, 05, 09, 10, 11, 12, 14, 15, 16, 17)	Blue Single (VLT 0.40)
Living (01, 02, 03, 04, 05, 14, 15, 16, 17)	
Bed 2 battleaxe (04, 05, 14, 15, 16, 17)	
Bed 1 + 2 (06, 07, 08)	
Living (06, 07, 08, 10, 11, 13)	
Living (09)	
Living (12)	
Bed 2 battleaxe (10, 11, 12, 13)	
Bed 1 (13)	
Living (19)	
Living (21, 32, 33, 34)	
Bed 1 + 2 (18)	
Bed 1 (19)	
Bed 2 battle axe (21, 22, 31, 32, 33, 34, 37, 38, 47, 48)	
Living (29, 45)	
Bed 2 battle axe (27, 28, 29, 30, 44, 45, 46)	
Bed 1 + 2 + 3 (35)	
Living (42)	
Living (43)	
Living (51, 60)	
Living (57)	
Living (58)	
Bed 1 (20)	
Bed 1 (21, 22)	
Bed 1 (23, 24, 25, 26)	
Bed 2 balcony (24, 25, 26)	
Bed 1 + 2 + 3 (39)	
Bed 1 + 2 (49)	
Bed 3 (49)	
DOUBLE ASPECT Bed 2 + 3 (52)	
Bed 1 (52)	
Bed 3 (56)	
Bed 1 + 2 (56)	
DOUBLE ASPECT Living (18, 20, 22, 23, 24, 25, 26, 27, 28, 30, - 31)	
DOUBLE ASPECT Bed 2 balcony (23)	
DOUBLE ASPECT Bed 1 (31, 32, 33, 34)	
DOUBLE ASPECT Bed 1 (27, 28, 29, 30)	
DOUBLE ASPECT Living (35, 36, 38, 39, 44, 46, 47, 49)	
Living (40, 41)	
Bed 1 + 2 (40, 41, 43)	
Bed 1 (36, 37, 38, 42, 44, 45, 46, 47, 48, 57)	
DOUBLE ASPECT Living (50, 52, 54, 55, 56, 59)	
Bed 1 + 2 (50, 51, 53, 54, 55, 58, 59, 60)	

Daylight Criteria Achieved?:

Bed 1 (01, 02, 03, 04, 05, 09, 10, 11, 12, 14, 15, 16, 17) Yes
 Living (01, 02, 03, 04, 05, 14, 15, 16, 17)
 Bed 2 battleaxe (04, 05, 14, 15, 16, 17)
 Bed 1 + 2 (06, 07, 08)
 Living (06, 07, 08, 10, 11, 13)
 Living (09)
 Living (12)
 Bed 2 battleaxe (10, 11, 12, 13)
 Bed 1 (13)
 DOUBLE ASPECT Living (18, 20, 22, 23, 24, 25, 26, 27, 28, 30, 31)
 Bed 1 + 2 (18)
 Bed 1 (19)
 DOUBLE ASPECT Bed 2 balcony (23)
 Bed 2 battle axe (21, 22, 31, 32, 33, 34, 37, 38, 47, 48)
 DOUBLE ASPECT Bed 1 (31, 32, 33, 34)
 DOUBLE ASPECT Bed 1 (27, 28, 29, 30)
 Bed 2 battle axe (27, 28, 29, 30, 44, 45, 46)
 DOUBLE ASPECT Living (35, 36, 38, 39, 44, 46, 47, 49)
 Bed 1 + 2 + 3 (35)
 Living (40, 41)
 Bed 1 + 2 (40, 41, 43)
 Bed 1 (36, 37, 38, 42, 44, 45, 46, 47, 48, 57)
 Living (43)
 DOUBLE ASPECT Living (50, 52, 54, 55, 56, 59)
 Bed 1 + 2 (50, 51, 53, 54, 55, 58, 59, 60)
 Living (51, 60)
 Living (58)
 Bed 1 (20)
 Bed 1 (21, 22)
 Bed 1 (23, 24, 25, 26)
 Bed 2 balcony (24, 25, 26)
 Bed 1 + 2 + 3 (39)
 Bed 1 + 2 (49)
 Bed 3 (49)
 DOUBLE ASPECT Bed 2 + 3 (52)
 Bed 1 (52)
 Bed 3 (56)

Living (19) No
 Living (21, 32, 33, 34)
 Living (29, 45)
 Living (42)
 Living (57)
 Bed 1 + 2 (56)

1.1 Daylight Access - Living Areas




66%

Score Contribution This credit contributes 30% towards the category score.

Criteria What % of living areas achieve a daylight factor greater than 1%

Output Calculated percentage

Apartment 85 %

1.2 Daylight Access - Bedrooms			66%
Score Contribution	This credit contributes 30% towards the category score.		
Criteria	What % of bedrooms achieve a daylight factor greater than 0.5%		
Output	Calculated percentage		
Apartment	98 %		
1.3 Winter Sunlight			0%
Score Contribution	This credit contributes 10% towards the category score.		
Criteria	Do 70% of dwellings receive at least 3 hours of direct sunlight in all Living areas between 9am and 3pm in mid-winter?		
Question	Criteria Achieved ?		
Apartment	No		
2.1 Ventilation - Natural - Apartments			66%
Score Contribution	This credit contributes 30% towards the category score.		
Criteria	What % of dwellings are effectively naturally ventilated?		
Question	Percentage Achieved?		
Apartment	93 %		

Transport Overall contribution 9.0%

		22%
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1.1 Bicycle Parking - Residential 0%

Score Contribution	This credit contributes 22.2% towards the category score.
Criteria	How many secure and undercover bicycle spaces are there for residents?
Question	Bicycle Spaces Provided ?
Apartment	20
Output	Min Bicycle Spaces Required
Apartment	60

1.2 Bicycle Parking - Residential Visitor 0%

Score Contribution	This credit contributes 22.2% towards the category score.
Criteria	How many secure bicycle spaces are there for visitors?
Question	Visitor Bicycle Spaces Provided ?
Apartment	8
Output	Min Visitor Bicycle Spaces Required
Apartment	12

1.3 Bicycle Parking - Convenience Residential 0% Disabled

Credit 1.1 must be achieved first.

This credit is disabled Credit 1.1 must be achieved first.

2.1 Electric Vehicle Infrastructure 100%

Score Contribution	This credit contributes 22.2% towards the category score.
Criteria	Are facilities provided for the charging of electric vehicles?
Question	Criteria Achieved ?
Project	Yes

2.2 Car Share Scheme 0%

Score Contribution	This credit contributes 11.1% towards the category score.
Criteria	Has a formal car sharing scheme been integrated into the development?
Question	Criteria Achieved ?
Project	No

2.3 Motorbikes / Mopeds 0%

Score Contribution	This credit contributes 11.1% towards the category score.
Criteria	Are a minimum of 5% of vehicle parking spaces designed and labelled for motorbikes (must be at least 5 motorbike spaces)?
Question	Criteria Achieved ?
Project	No

Waste & Resource Recovery Overall contribution 5.5%

		66%
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1.1 Construction Waste - Building Re-Use		0%
Score Contribution	This credit contributes 33.3% towards the category score.	
Criteria	If the development is on a site that has been previously developed, has at least 30% of the existing building been re-used?	
Question	Criteria Achieved ?	
Project	No	
2.1 Operational Waste - Food & Garden Waste		100%
Score Contribution	This credit contributes 33.3% towards the category score.	
Criteria	Are facilities provided for on-site management of food and garden waste?	
Question	Criteria Achieved ?	
Project	Yes	
2.2 Operational Waste - Convenience of Recycling		100%
Score Contribution	This credit contributes 33.3% towards the category score.	
Criteria	Are the recycling facilities at least as convenient for occupants as facilities for general waste?	
Question	Criteria Achieved ?	
Project	Yes	

Urban Ecology Overall contribution 5.5%

		55%
<hr/>		
1.1 Communal Spaces		100%
Score Contribution	This credit contributes 11.1% towards the category score.	
Criteria	Is there at least the following amount of common space measured in square meters : * 1m ² for each of the first 50 occupants * Additional 0.5m ² for each occupant between 51 and 250 * Additional 0.25m ² for each occupant above 251?	
Question	Common space provided	
Apartment	349 m ²	
Output	Minimum Common Space Required	
Apartment	88 m ²	
<hr/>		
2.1 Vegetation		50%
Score Contribution	This credit contributes 44.4% towards the category score.	
Criteria	How much of the site is covered with vegetation, expressed as a percentage of the total site area?	
Question	Percentage Achieved ?	
Project	15 %	
<hr/>		
2.2 Green Roofs		0%
Score Contribution	This credit contributes 11.1% towards the category score.	
Criteria	Does the development incorporate a green roof?	
Question	Criteria Achieved ?	
Project	No	
<hr/>		
2.3 Green Walls and Facades		100%
Score Contribution	This credit contributes 11.1% towards the category score.	
Criteria	Does the development incorporate a green wall or green façade?	
Question	Criteria Achieved ?	
Project	Yes	
<hr/>		
2.4 Balconies, Courtyards & Roof terraces		100%
Score Contribution	This credit contributes 11.1% towards the category score.	
Criteria	Is there a tap and floor waste on every balcony and courtyard (including any roof terraces)?	
Question	Criteria Achieved ?	
Apartment	Yes	
<hr/>		
3.1 Food Production - Residential		0%

Score Contribution	This credit contributes 11.1% towards the category score.
Criteria	What area of space per resident is dedicated to food production?
Question	Food Production Area
Apartment	-
Output	Min Food Production Area
Apartment	32 m ²

Innovation Overall contribution 9.0%

	0%
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1.1 Innovation		0%
Score Contribution	This credit contributes 100% towards the category score.	
Criteria	What percentage of the Innovation points have been claimed (10 points maximum)?	

Disclaimer

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Rainwater Tanks



Stormwater Sensitive Homes

How does a rainwater tank help protect our local streams?

Most people install a rainwater tank primarily to harvest stormwater from their roof and conserve their mains water use. In addition to conserving water, a rainwater tank also helps treat stormwater and protect local streams from high storm flows by reducing the volume of stormwater and quantity of pollutants coming from a house block that would otherwise be delivered to the local stream.

What do I use my tank water for?

Garden irrigation, laundry and toilet flushing consume much of our home water use. In most cases these uses do not require the water to be of drinking quality standard that is provided by mains water. By plumbing your rainwater tank to your toilet or laundry and substituting these mains water needs with the rainwater harvested from your roof, you can conserve mains water whilst reducing the amount of stormwater that enters our streams.





Why can't I use my rainwater tank for my garden alone?

So that your tank is not too full to collect rainwater when it rains, you need to be consistently using your tank water all year round.

If tank water is used for your garden alone, your tank will remain full and unused during the winter months when your garden does not require watering. With a full tank, your capacity to capture and store the regular winter rainfall and thus benefit the local waterway is significantly reduced.

By plumbing your rainwater tank to your toilet or laundry, your tank water is used consistently all year round allowing rainfall to refill the tank more often especially in winter. This ultimately reduces the volume of stormwater that is delivered to the stream and the quantity of pollutants that are washed with it.

The Victorian Government has recognised the importance of plumbing your tank to your toilet and offers a cash rebate for the installation of connected rainwater tanks (www.dse.vic.gov.au). In addition, a 5 star energy standard has been introduced that requires a connected 2000Lt rainwater tank or solar hot water service to be installed in all new houses and apartments (class 1 and 2 buildings). (www.buildingcommission.com.au).

How do I choose a rainwater tank?

The most important thing to consider when choosing a rainwater tank is to first identify what you want from your rainwater tank. The size and type of rainwater tank you choose will vary depending on your homes water needs and the reliability you seek from your rainwater tank supply. There are a number of factors that may influence this and the following questions should be considered when planning your tank installation:

- what is the water demand of your home?
- how many people are living in your home?
- what is your intended use of rainwater?
- what reliability do you want from your tank?
- what is the total area of roof draining into your tank?
- what is average rainfall of your area?
- do you need extras like a pressure pump, the ability to top up your tank with drinking water, a backflow prevention device or a first flush device?
- are the materials used on your roof suitable to collect rainwater?
- are there physical constraints of your property that may influence the type of rainwater tank you need?

Once you know how much water you can collect and how much water you are going to use then a tank size can be selected to provide the reliability of water supply that you need.

Types of rainwater tanks

Rainwater tanks come in a variety of materials, shapes and sizes and can be incorporated into building design so they don't impact on the aesthetics of the development. They can be located above ground, underground, under the house or can even be incorporated into fences or walls.

There are three main tank systems to consider and a variety of materials to choose from. Features of these are outlined below and in the pictures above:

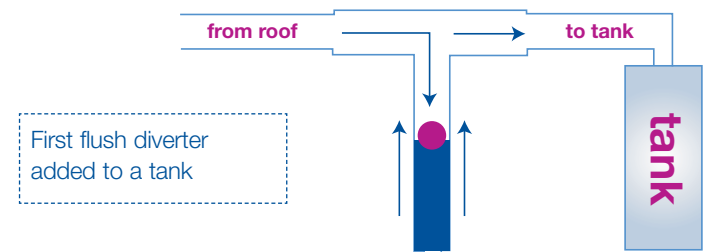
Tank systems:

Gravity Systems - rely on gravity to supply rainwater to the household and the garden by placing the tank on a stand at height.

Dual Supply Systems - top your rainwater tank with mains water when tank level is low ensuring reliable water supply.

Pressure Systems - use a pump to deliver rainwater to household and garden fixtures.

To reduce the amount of sediment and debris entering a tank, mesh screens and 'first flush diverters' can be fitted. A screen will filter large debris such as leaves and sticks while 'first flush diverters' store the 'first flush' of the rainfall that carries the sediment and other pollutants initially washed from your roof (see figure below).



Costs & rebates

Costs of installing a tank vary however a standard 2000Lt tank or bladder will cost around \$1000.

Additional plumbing and/ or.....

- Above ground tanks cost approximately \$250 for a 500 litre tank.
- Below ground tanks cost between \$300-\$600 per 1000 litres of storage
- The costs of pumps start from \$200.

Additional plumbing and/or excavation costs vary on intended use, pipe layout, materials and site accessibility.

The Victorian Government offers a total rebate of \$300 for the installation of a rainwater tank that is plumbed to toilet and connected by a licensed plumber. For further details refer to the Department of Sustainability and Environment website www.dse.vic.gov.au.

For more information:

Melbourne Water's Water Sensitive Urban Design Website: www.wsud.melbournewater.com.au

Municipal Association of Victoria Clearwater Program: www.clearwater.asn.au

Water Sensitive Urban Design in the Sydney Region: www.wsud.org

Urban Stormwater Best Practice Environmental Management Guidelines, Victorian Stormwater Committee, CSIRO publishing, 1999.

WSUD Engineering Procedures: Stormwater, Melbourne Water, 2005.

Delivering Water Sensitive Urban Design: Final Report of Clean Stormwater – a planning framework, ABM, 2004.

Tips for undertaking maintenance

Things to look for and how to fix them.

Leaf litter / debris in gutters	Pump not working
Regularly clear your gutters. Make sure you cover the tank inlet if you're rinsing down the gutters to avoid debris entering the tank.	Check operating instructions for your pump. Check that pumps are kept clear of surface water (flooding), vegetation, and have adequate ventilation. Pumps should be serviced every few years to prolong the pump life.
Blocked downpipe	Mains backup or pump not working
If you see water spilling from the edge of the gutters check that the downpipe is not blocked, removing any debris.	Have you heard the pump operating? If the mains backup switching device fails many people do not notice for a long time. Consider a manual system if the switching device is problematic and you don't mind operating it manually.
First flush diverter clogging	Overflow
To clean out, unscrew the cap at the base of the diverter and remove the filter. Wash the filter with clean water and the flow restrictor inside the cap.	Check that the overflow is not blocked and that there is a clear path for water to safely spill from the tank through the overflow pipe when full. Check that a clean mesh screen is safely in place to prevent mosquitoes entering the tank.
Debris on the mesh cover over inlets / outlets	Sediment / debris build-up in tank (more than 20mm thick)
The fine stainless steel mesh is similar to fly screen mesh. It should be cleaned regularly to ensure it does not become blocked with leaves and other material.	Over time a small amount of fine sediment will collect in the bottom of your tank and this is harmless and natural. It should not be disturbed until it is approx 20 mm thick which may take many years. To clean your tank out simply empty your tank and wash out with a high-pressure washer or hose.
Dirt and debris around the tank base or side.	Base area
Keep leaf build-up, sticks, pot plants and other items off the lid of your tank. Use a hose to remove dust and dirt from the outside of the rainwater tank and ensure there is no debris on the base, bottom lip and walls of your tank.	Tanks must be fully supported by a flat and level base. Check for any movement, cracks or damage to the slab or pavers. If damage is observed, empty the tank to remove the weight and have the fault corrected to prevent damage to the tank. There is no warranty from suppliers for damage to a rainwater tank if the base has failed.
Smelly water or mosquitos	Monitoring the water level
Rainwater tanks can smell if there is debris in the gutters. Check the gutters and leaf strainers are clean. Mosquitos or wrigglers can make their way into your tank if they are small enough to pass through the inlet strainer. A very small amount of chlorine (approx 4 parts per million) can be put in the tank to kill off mosquitos or the bacteria causing odours. The chlorine will disinfect the water and then evaporate. Chlorine tablets from a pool supplier can be used (but check the recommended dose based on your tank capacity).	A range of devices are available to monitor water level. Some simple float systems can be used effectively.

Acknowledgement: Information from PJT Green Plumbing's 'Maintenance Guide for Your Rainwater Tank' was used to develop this fact sheet.



Maintenance manual

Rainwater tanks

Site address: _____

Planning permit number: _____

Rainwater tank maintenance

This manual lists the key tasks required to maintain a domestic rainwater tank and the recommended frequency of each task. This manual can be submitted with planning permit applications for developments that include the installation of a domestic rainwater tank. Once endorsed, the property owner is responsible for continuous implementation of rainwater tank maintenance, in accordance with the guidance in this manual.

Rainwater tanks are an exceptional tool for environmental protection. They collect and store roofwater for use inside and outside the home. This simultaneously reduces the demand on our precious potable mains water and limits the amount of stormwater pollutants that enter our sensitive Bay.

Maintenance of rainwater tanks is relatively easy however it is important to do the following key tasks to ensure the quality of water is high:

- stop leaf litter and debris entering the tank.
- prevent bird droppings and dust building up in the gutters.
- prevent mosquitos and other animals entering the tank.

Tank connected to	toilet only <input type="checkbox"/> toilet & irrigation <input type="checkbox"/> toilet & laundry & irrigation <input type="checkbox"/> toilet & laundry & hot water & irrigation <input type="checkbox"/>
Rainwater tank location	
Planning drawing number showing rainwater tank location	
Rainwater tank construction date	
Date of final building inspection	
Tank volume (litres)	
Area or percentage of the roof that is connected to the tank via gutters and downpipes	

For more information please visit www.portphillip.vic.gov.au or contact the Sustainability team via:

Phone: 03 9209 6777

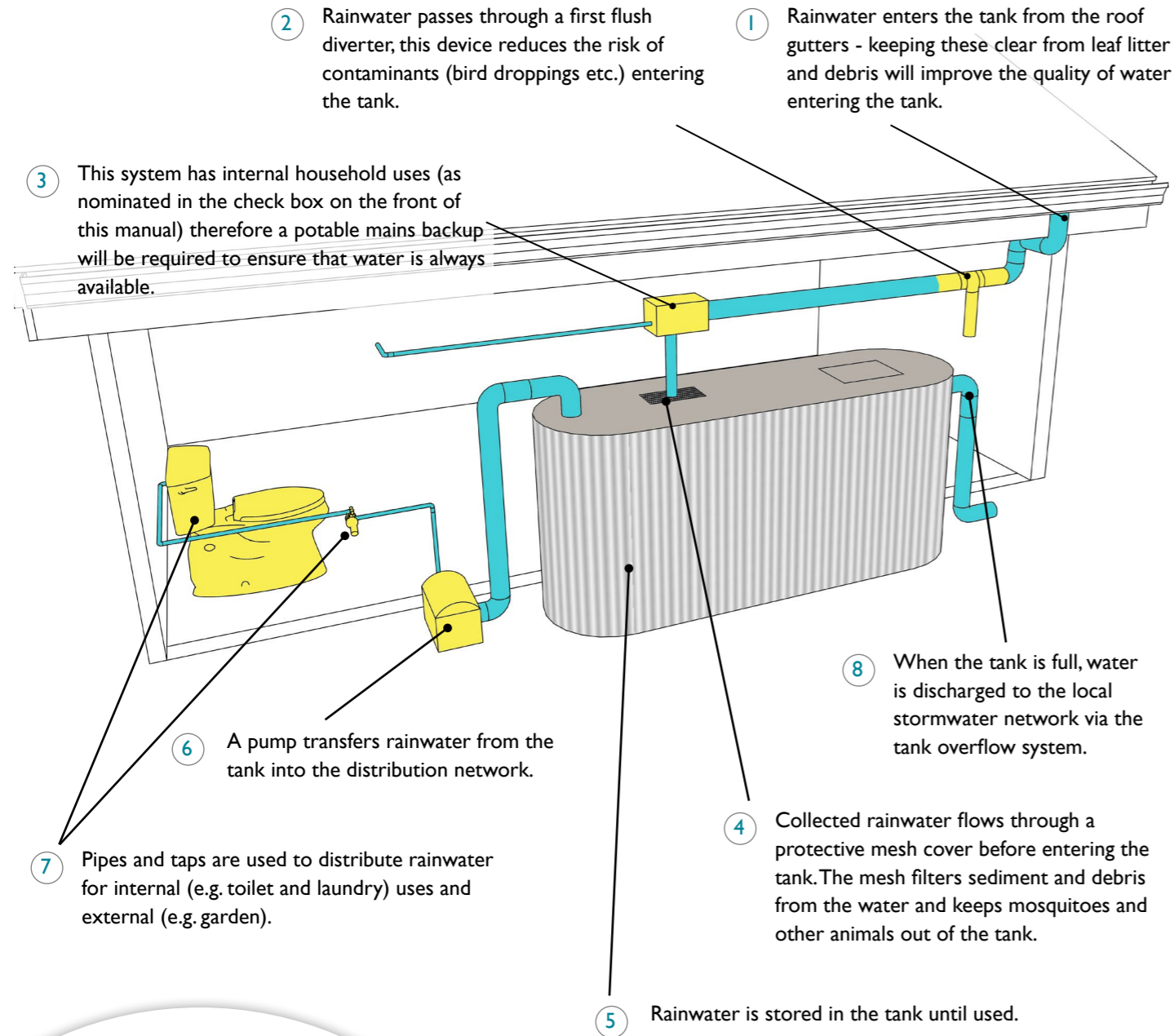
email: sustainabledesign@portphillip.vic.gov.au



Maintenance Overview

Rainwater Tank Maintenance

The following diagram identifies the key items which are important for rainwater tanks and their maintenance.



Maintenance Checklist

The property owner is responsible for checking the maintenance items in this checklist at the recommended frequency at the bottom of the table. The maintenance log at the bottom of the page should be filled in once each maintenance check is complete. Upkeep of this maintenance log should continue throughout the life of the rainwater tank.

Item	Rainwater tank element	Inspection item	Y/N	Likely maintenance task
1	Roof gutters and downpipes	Is there leaf litter or debris in the gutters?		Remove by hand and dispose responsibly.
2	First flush diverter	Is there anything blocking the first flush diverter (leaves etc)?		Remove by hand and dispose responsibly.
3	Potable mains back up device	Is the potable mains back up switch operating correctly?		Repair or replace device. Consider a manual switching device.
4	Mesh cover	Has the mesh cover deteriorated or have any holes in it?		Replace mesh cover.
5	Tank volume	Is there large amounts of sediment or debris sitting in the bottom of the tank, reducing the volume available in the tank to store water?		Remove sediment and dispose responsibly.
6	Pump	Is the pump working effectively? Have you heard it on a regular basis?		Check the potable mains back up is not permanently on. Repair or replace pump.
7	Pipes and taps	Are pipes and taps leaking?		Repair as needed.
8	Overflow	Is the overflow clear and connected to the stormwater network?		Remove blockages and/or restore connections to stormwater network.
9	Supporting base	Are there any cracks or movement of pavers?		Empty the tank to reduce weight then repair any damage to the base.

Maintenance frequency												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
All tasks	x			x			x			x		

Regular maintenance will improve the water quality and extend the life of your system. A well maintained tank isn't likely to need to be cleaned out for up to ten years (when there is more than 20mm of accumulated sediment).

Maintenance Log

Maintenance date	Maintenance undertaken

