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22nd March 2023
Ref: SYD220043

ESD Report

Bella Baia Residential Apartment Building Development

Located at: 57 Banana Street, Redland Bay, QLD 4165

For: *Fortezza Group*

Date	Revision	Issue	Prepared By
13.07.2022	0	ESD Report for DA submission (draft)	AS
23.07.2022	1	ESD Report for DA submission (final draft)	AS
12.03.2023	2	ESD Report (updated to reflect current plans i.e. Issue M)	AS

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Executive Summary

This report supports Development Application (DA) lodgement for Bella Baia, a new 8-storeys apartment building development located at 57 Banana Street, Redland Bay QLD 4165. The development comprises of:

- 17 residential dwelling units;
- Private open space for each dwelling units;
- Rooftop swimming pool;
- Carpark at Basement 1 and Ground level.

The site is Lot 8 on Registered Plan (RP) 80201. As the site is located within the Weinam Creek Priority Development Area (PDA), Economic Development Queensland (EDQ) PDA Guideline no. 08 apply.

This report will address the following design standards requirements outlined under EDQ PDA Guidelines no. 08, Climatic response section:

EDQ PDA Guideline no. 08, Climatic Response Requirements	Responses
a) Building achieves a 5 star rating through the National Australian Built Environment Rating System (NABERS).	Responses have been addressed under Section 1.0 NatHERS rating (in place of NABERS rating)
b) Buildings have generous cross ventilation from balcony areas through habitable rooms and dwelling units.	Responses have been addressed under Section 2.0 Cross Ventilation
c) Orientate buildings to promote seasonal solar heat gain or loss taking into consideration major site views and vistas.	Responses have been addressed under Section 3.0 Orientation, Solar & Sun Shading
d) Large building facades incorporate architectural wall shading to reduce solar heat gain.	
e) External windows have sun shading.	

Table 1: EDQ PDA Guideline No. 08, Climatic Response – Summary of Requirements and Responses

This report summarised the sustainable design principles for the development. Reference and benchmarking are made to the following relevant standard and best practice guidelines, as required:

- National Construction Code (NCC) 2019 Section J;
- Queensland Development Code (QDC) MP4.1 Sustainable Buildings, Version 1.13 Energy & Water section;
- Economic Development Queensland (EDQ) Priority Development Areas (PDA) Guideline no 08, Climatic Response, rev. May 2015;
- NABERS for Apartment Buildings by NSW Department of Planning, Industry and Environment (DPIE);
- Green Star Buildings v1.0 framework by Green Building Council of Australia (GBCA).

References

The following documents, drawings, and specifications have been used to prepare this report:

Architect and Town Planner:

Hayes Anderson Lynch (HAL) Architects Pty Ltd
3/709 Main Street
Kangaroo Point QLD 4169

Project/ Job No.	Rev.	Document/ Drawing Set
H4474BAN	Issue M (dated 07.02.2023)	Building Application Drawings
-	February 203	MCU Town Planning Assessment Report for 57 Banana Street, Redland Bay, QLD 4165

Introduction

Development Overview

This report supports Development Application (DA) lodgement for Bella Baia, a new 8-storeys apartment building development located at 57 Banana Street, Redland Bay QLD 4165. The development comprises of:

- 17 residential dwelling units;
- Private open space for each dwelling;
- Rooftop swimming pool;
- Carpark at Basement 1 and Ground level.

The development is classified as Class 2 building by the Australian Building Codes Board (ABCB), located within **BCA climate zone 2**, and Nationwide House Energy Rating Scheme (**NatHERS**) **climate zone 10**.

TOWN PLANNING DRAWINGS

Proposed Residences - 'Bella Baia'

57 Banana Street, Redland Bay, QLD 4165

KEY PROPOSAL STATISTICS - MULTIPLE DWELLING		
Site Area	834.52 m²	
Frontage:	20.74m + 40.237m + 20.74m	
Number of Storeys:	8	
Maximum Building Height :	29.4m Above NGL	
No. of Dwellings :	17	
Site Cover	601.55 m²	(72%)
Communal Open Space	329.83m²	(39.5%)
Landscaping (incl Deep planting)	181.83 m²	(21.7%)
Deep Planting excluding PMT	47.53 m²	(5.6%)
Total Deep Planting including PMT	80.50 m²	(9.6%)

Car Spaces - Resident	29
Car Spaces - Visitor	2
Total Car Spaces Proposed	31

TOWN PLANNING DRAWINGS

fortezza GROUP

ADAPTABLE UNIT

DEEP PLANTING AREA

HAL HAYES ANDERSON LYNCH ARCHITECTS PTY LTD

ARCHITECTS TOWN PLANNERS INTERIOR DESIGNERS

Apartment Development

57 Banana Street, Redland Bay, QLD 4165

Coversheet

Figure 1: Apartment Development – Coversheet (Source: HAL Architects, Dwg no. TP001 Issue. M)

NatHERS Rating (in place of NABERS rating)

The NatHERS rating provides assessment of new apartment's thermal performance. The scheme provides energy star ratings (out of 10 stars) where higher star rating demonstrates better thermal performance and energy efficient outcome. **The development has achieved an overall average of 6 stars NatHERS rating (beyond the minimum targeted average of 5 stars NatHERS rating). In addition, other relevant sustainability design initiatives have also been taken into consideration for optimised energy and water use during operation.**

Green Star Building Sustainability Framework

The Green Star Buildings v1.0 ("Green Star") is holistic industry recognised building sustainability and environmental performance framework. **While the development is not seeking a formal certification under the Green Star framework with the GBCA, the framework will be used as reference in identifying potential sustainability initiatives for ongoing review and considerations throughout design stages.** This shall ensure holistic sustainability principles are being considered from early design stage, through to construction and on-going operation of the development, where feasible.

National Construction Code (NCC) 2019, Section J Energy Efficiency

The NCC 2019 Section J Volume One Amendment 1 contains mandatory requirements for design of building envelope and features to reduce energy use. Compliance with the NCC is achieved by complying with the Governing Requirements of the NCC and relevant Performance Requirements. There are three options available to demonstrate compliance with the Performance Requirements:

- A Performance Solution,
- A Deemed-to-Satisfy (DTS) Solution, or
- A combination of a Performance Solution and a DTS Solution.

For the purpose of demonstrating compliance, Section J DTS Solution method is used. In Queensland, compliance based on Section J version of BCA 2009 shall apply instead of the NCC 2019 Section J with additional compliance requirements as outlined in the Queensland Development Code (QDC). Where there is any inconsistency between the NCC and the QDC, the QDC prevails.

Queensland Development Code (QDC), MP4.1 Sustainable Buildings – Energy & Water

The Queensland Development Code (QDC) consolidates Queensland-specific building standards into a single development. The QDC MP4.1 Sustainable Buildings outline sustainability requirements specific to Queensland. The QDC MP4.1 covers the Class 1 and Class 2 buildings' Performance Requirements for energy and water efficiency, electricity sub-metering and end-of-trip facilities.

EDQ PDA Guideline No. 08, Climatic Response – Requirements & Responses

1. NatHERS Rating (in place of NABERS rating)

EDQ PDA Requirement

- Building achieves 5 stars rating through the National Australian Built Environment Rating System (NABERS).

Responses

NatHERS Rating

The NatHERS rating provides assessment of new apartment's thermal performance. The scheme provides energy star ratings (out of 10 stars) where higher star rating demonstrates better thermal performance and energy efficient outcome. **The development has achieved an overall average of 6 stars NatHERS rating (beyond the minimum targeted average of 5 stars NatHERS rating). In addition, other relevant sustainability design initiatives have also been taken into consideration for optimised energy and water use during operation.**

The modelled NatHERS results are attached in Appendix A.

Sustainability initiatives taken into consideration during design development are as follows. All common areas including lift lobbies are either mechanically ventilated or naturally ventilated (i.e. non-conditioned).

Building Fabric

Units Building Fabric Elements	Modelled Compliant Material Construction (location of construction is as indicated in Reference documents architectural drawing set)
Floor	Floor cover (all units) • Carpet to all bedrooms (including walk-in-robe) • Tiles to all toilets, laundry, ensuite and bath • Timber to all kitchen/living/dining area Floor construction • Units at Level 2: 200mm concrete slab + R1.0 insulation • Units at Levels 3 – 6: 200mm concrete slab + No insulation • Units at Level 7: 400mm concrete slab + No insulation • All floors exposed to building exterior: R1.0 insulation
Ceiling	Ceiling construction • Units at Level 2-5: 200mm concrete slab • Units at Level 6: 400mm concrete slab • Units at Level 7: 300m concrete slab • Units at Level 7, ceiling exposed to building exterior: R5 insulation

Wall	<u>Wall construction</u>
	• External walls:
	  ○ 190mm concrete/ R2.5 insulation/ 10mm Plasterboard
	  → to achieve total R-value of no less than R2.69
	  ○ 150mm concrete/ R2.5 insulation/ 10mm Plasterboard
	  → to achieve total R-value of no less than R2.66
	
	• Internal walls:
	  ○ 190mm concrete/ No insulation/ 10mm Plasterboard
	  → to achieve total R-value of no less than R0.19
	  ○ 150mm concrete/ No insulation/ 10mm Plasterboard
	  → to achieve total R-value of no less than R0.16
	
	• Party walls:
	  ○ 10mm Plasterboard/ R2 insulation/ Airgap/ 25mm Plasterboard/ Airgap/ R2 insulation/ 10mm Plasterboard
	  → to achieve total R-value of no less than R4.69
	
	• Internal partition:
	  ○ 10mm Plasterboard/ Airgap/ 10mm Plasterboard
	  → to achieve total R-value of no less than R0.28

Glazing	Glazing type has been taking from Reference documents, door and window schedule. Where discrepancies arise between window schedule indicating 'window type' and window symbol indicating in elevations, the window type indicated in elevations drawings takes precedence. Glazing thermal performance specification is selected based on the closest possible selections with proposed specification by Argus Vision. Modelled compliant glazed windows and doors are as follows: • All casement glazing: U-value 6.12 (max); SHGC 0.39 (±5%) • All sliding glazing: U-value 6.04 (max); SHGC 0.49 (±5%) • All awning glazing: U-value 7.16 (max); SHGC 0.40 (±5%) • All fixed glazing: U-value 6.10 (max); SHGC 0.57 (±5%) • All double hung (that forms part of fixed glazing): U-value 6.10 (max); SHGC 0.57 (±5%) *For reference, the data provided by Argus Vision are as follows:* • *Hinged doors: U-value 5.9; SHGC 0.4* • *Sliding doors: U-value 6.03; SHGC 0.48* • *Awning sash: U-value 6.98; SHGC 0.41* • *Fixed windows: U-value 6.1; SHGC 0.57*
Others	• All exhaust fans and downlights must be sealed. • No ceiling fans provision included in all models.

Table 2: NatHERS modelling input for improved thermal performance

Services

The following initiatives have been included for energy efficiency:

Services	Considerations
Mechanical	• Carpark ventilation system coupled with carbon monoxide (CO) and VSD fan control; • Where ventilation system is present (e.g. at common lobby, main switch room or the likes), to include provision of ventilation control such as time clock, BMS or thermostatic control; • All major fans come with VSD control; • Pool pumps comes with timer control.
Electrical	• Gearless traction lift that is powered with variable voltage, variable frequency (VVVF) motor; • LED lighting for all artificial lighting; • Carpark lighting integrated with zoned switching with motion sensor control; • Lighting for all other common area comes with motion and/or daylight sensors control; • Lift car lighting connected to lift call button.
Hydraulics	• Central hot water system – solar or heat pump central hot water system; • Insulated hot water system pipes (min. R1.0 insulation); • Non-potable water use for landscape irrigation and general washing; • Common area sanitary fixtures with high water efficient (WELS); • Drip irrigation with moisture sensor control for landscape irrigation.

Table 3: Sustainability initiatives considerations for energy efficiency

In addition to the above, the development has also:

- Provided electric vehicle (EV) charging points for each residential unit including 1 for visitor. The intent is to encourage uptake in EVs which will subsequently contribute to transport greenhouse gas emissions reduction.

Metering Requirements

Metering provision to be commissioned and capture the following minimum energy and water coverage. Dedicated energy meters provision are as follows:

Services	Metering Provision
Energy	• Common area lighting and power (e.g. lifts, lobbies, fire stairs, carparks, plant room, services room, sprinkler tank room etc); • Exterior lighting (e.g. landscape, open space lighting etc); • Ventilation to common areas; • Water pumping system; • Exterior signage (e.g. Bella Baia signage); • General services (e.g. garbage compactors, plant and garbage room ventilation, security systems, etc.); • Electric vehicle charging; • Apartment energy use.
Water	• Fire services; • Cleaning; • Irrigation within the development site boundary.

Table 4: Metering Provision for Bella Baia

2. Cross Ventilation

EDQ PDA Requirement

- Buildings have generous cross ventilation from balcony areas through habitable rooms and dwelling units.

Responses

Cross Ventilation

To promote cross ventilation, the following has been included in design:

- Each dwelling unit is provided with balcony with sliding door access via living area. As the sliding door comprises of up to 3 openable and 1 fixed panel, this will allow approximately up to 67.5% opening to maximise ventilation opportunity.
- A combination of sliding door (up to 67.5% opening area for ventilation) to living area and a combination of sliding and double hung windows (up to 45% opening area for ventilation) to bedrooms have been included to maximised opening for effective ventilation.

3. Optimised Orientation

EDQ PDA Requirement

- Orientate buildings to promote seasonal solar heat gain or loss taking into consideration major site views and vistas.
- Large building facades incorporate architectural wall shading to reduce solar heat gain.
- External windows have sun shading.

Responses

Orientation, Solar & Sun Shading

The site is located within ABCB climate zone 2, which have warm humid summer and mild winter. Hence, the aim is to ideally eliminate heating demand in winter and reduce cooling demand during summer. The following outline the design features with the site sunpath overlay shown in Figure 5:

- The longer axis of building is North-South facing, hence minimising solar gain from low-angle East-West sun.
- Living areas which are considered a day time zone, are located Northward facing with glazed sliding door. This will maximise daylight access and encourage solar heat gain from low angle sun for passive heating during the cooler winter months. Meanwhile, balcony attached to living areas also serve as large horizontal sun shading device above the fully glazed sliding doors to shade from high angle summer sun throughout the day.
- Bedrooms which are considered as night time zone, and other non-habitable areas which can be used as buffer zones such as lift core and stairwells are located at Southward region of the floor plate. This will assist to reduce solar heat gain particularly during the summer months from direct sun and heating from high thermal mass bricks or concrete during the night (i.e. reducing the need for cooling during the night).

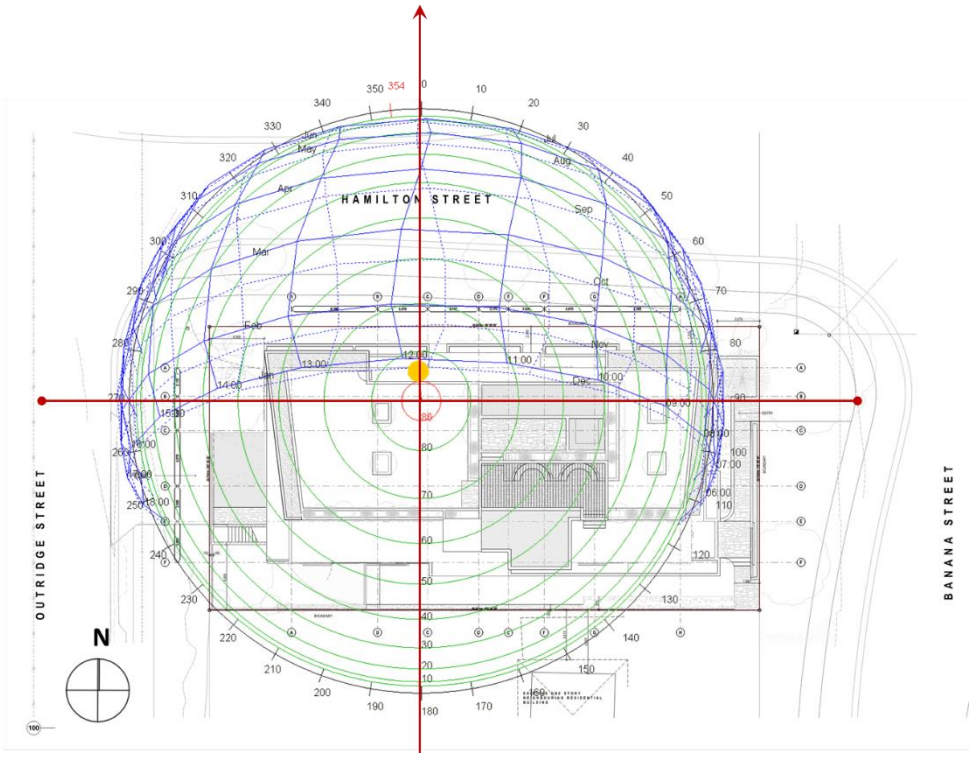


Figure 2: Site Sunpath overlay on Bella Baia apartment site plan

4. Other Sustainability Initiatives Considerations

While the development is not seeking for a formal Green Star certification, the Green Star Buildings framework has been used as a reference. A list of sustainability initiatives is summarised in table below for ongoing review and considerations. The project team shall review progressively these initiatives throughout each key stages for implementation where deemed feasible.

Table 5: Sustainability initiatives for ongoing review and considerations

Category	Sustainability Initiatives
Responsible: *Recognises activities that ensure the building is designed, procured, built & handled over in a responsible manner.*	• Head contractor Environmental Management System certified to **AS/NZS ISO 14001** standard. • Environmental Management Plan (**EMP**) must be developed to cover the scope of construction activities. • Projects must divert at least **90% of construction and demolition** waste from landfill. • **Metering and Monitoring** provided for energy and water metering for all common uses, major uses, and major sources and automatic monitoring that can record consumption, process information and produce reports at user adjustable intervals. • **Services and maintainability** review to be carried out prior to tender. • **Commissioning and tuning** to include air tightness testing. • **Operations and maintenance (O&M)** manual**, building logbook and building users' guide** to be prepared and submitted to building owner at time of practical completion. • Provide **bins or storage containers** to building occupants to enable waste separation. Bins must be labelled and easy to access, and evenly distributed throughout the building. • **Collection of waste streams** must also allow for separating the following as a minimum: – General waste – Recycling stream (i.e. paper & cardboard, glass and plastic) – Once additional waste stream (e.g. organics, e-waste, batteries) – Any other single waste stream (except food waste) that is expected to represent more than 5% of total annual operational waste and resources (by volume) • **Dedicated Waste Storage Area** must be provided and adequately sized based on: – Forecasted waste generated by occupants – Collection frequency for each waste stream • At least **50% of all structural components (by cost)** meet a Green Star Responsible Products Value of at least 10. • At least **60% of all building envelope components (by cost)** meet a Green Star Responsible Products Value of at least 10. • At least **40% of all internal building finishes (by cost)** must meet a Green Star Responsible Products Value of at least 7.
Healthy: *Promotes actions and solutions that improve the physical and*	• Ventilation systems must be designed to comply with Green Star **minimum separation distances** from discharges to outdoor air intakes. • All **ductwork** (if any) that serves the building must be **cleaned** prior to occupation in accordance with a recognised Standard.

mental health of occupants.	• All regularly occupied areas (including living areas and bedrooms in dwelling units) must be provided with **good access to outdoor air**, appropriate for the activities and conditions in line with AS1668.2 and AS1668.4 standards respectively. • **Exhaust pollutants** from kitchen stoves or vehicles direction outside. • **Lighting** within the building meets minimum comfort requirements, minimum Colour Rendering Index (CRI) 85 or higher, in all internal and external applications, lux level and uniformity no less than that specified in AS 1680 standards. • To **limit glare**, bare light sources must be fitted with baffles, louvers, translucent diffusers, ceiling design, or other means that obscures the direct light source from all viewing angles of occupants, including occupants looking directly upwards. • All living rooms and bedrooms in at least 95% of all dwelling units have access to **daylight and view**. • **Maximise daylight** such that 60% of combined living and bedroom area of each dwelling unit to receive high levels of daylight (160 lux during 80% of nominated hours). The high levels of daylight must be present in at least 20% of the area in each bedroom and living area. • For **external glare control**, provide blackout blinds or curtains to all bedrooms as part of standard inclusion. • **Internal ambient noise levels** in regularly occupied areas (exclude those services under the direct control of the occupant) must be no greater than the upper range value relevant to the activity type in each space as recommended in the current AS/NZS 2107:2016. • **Reduce noise transmission** between enclosed spaces within the regularly occupied area: – All walls and floors (excluding riser walls) separating enclosed spaces must exceed the minimum NCC requirements by 5 points. – Party walls separating open plan kitchens (where joinery units are fixed) from another open plan kitchen/living room shall be discontinuous in construction as defined in National Construction Code. – Entry doors must have perimeter and threshold • At least 95% of internally applied paints, adhesives, sealants (by volume) and carpets (by area) must meet stipulated Green Star 'Total Volatile Organic Compounds (**TVOC**) **Limits**. • At least 60% of regularly occupied areas including living and sleeping areas must have a clear line of sight to a high-quality view (e.g. landscaping, sky or frequent movement of people, vehicles or animals).
Resilient: *Encourages solutions that address the capacity of the building to bounce back from short-term shocks and long-term stresses.*	• Carry out **climate change** risk and adaptation assessment.

Positive *Encourages a positive contribution to key environmental issues of carbon, water, and the impact of materials.*	• Reduce upfront carbon emissions by use of sustainable materials and products. • Meet the following **WELS** ratings: – Showers: 4 stars (no more than 7.5L/min) – Kitchen taps: 4 stars (no more than 7.5L/min) – Handwash basin taps: 5 stars (no more than 6L/min) • All **hot water pipes** outside of dwelling units to be R2.0 insulated. • All hot water pipes inside of dwelling units to be R0.5 insulated. • **Domestic hot water system** utilising solar thermal heating system or electric heat pump with minimum COP of 3.0 at 20°C ambient and 65°C leaving temperature. • **Dwelling units heating and cooling** to come with minimum 3 star SEER Heating Star Rating and 3.5 star SEER Cooling Star Rating respectively. • **Ceiling fans** to all bedrooms and living rooms and comply with NCC Section J0.3. • **Lift lobbies and hallways** to be either naturally ventilated or supply/exhaust air only with no air-conditioning heating or cooling. • Provide **pool cover** with minimum R0.075 for the external swimming pool. • Comply with **NCC 2019** Energy Efficiency requirements J3 – J8. • At least **15% potable water savings** when compared to a reference building via water efficient fittings, water reuse systems, low water landscaping and efficient drip irrigation system.
Places *Supports the creation of safe, enjoyable, integrated, and comfortable places.*	• Provision of **bicycle storage** facilities. • Provision of **electric vehicle charging points** to at least 5% of all car parking spaces.
People *Encourages solutions that address the social health of the community.*	• Head Contractor must ensure the following is provided or available on-site: – Separate **gender inclusive** bathroom facilities and changing amenities with a high degree of privacy – Diverse **gender-specific** fit-for-purpose personal protective equipment (**PPE**) for diverse body sizes and types • For common spaces, bathroom facilities, and amenities provided, **design** and construct to be **inclusive** to a diverse range of people with different needs beyond legislative requirements i.e. equal access, diverse wayfinding and provision of inclusive spaces (e.g. parents, family restrooms, emergency rooms, quiet rooms, and social interaction rooms)

Nature *Encourages active connections between people and nature and rewards creating biodiverse green spaces in cities.*	• As per **ecologist assessment**, the building was not built on, or significantly impacted, a site with a high ecological value. • All **outdoor lighting** on the project complies with AS/NZS 4282:2019 Control of the obtrusive effects of outdoor lighting. • No external luminaire on the project has a **ULOR** that exceeds 5%, relative to its actual mounted orientation. • **External landscape** in the building, whether horizontal or vertical must be provided at a ratio of either 15% of the site area or at a ratio of 1:500 of the GFA, whichever is larger. • Greater than 60% of plants must be **indigenous plants**. • Average **annual stormwater discharge reduction** (ML/yr) of 40% across the whole site. • Stormwater management plan design to meet specified **stormwater pollution reduction targets** (in % of post development annual average load) as follows: – Total Suspended Solids 85% – Gross Pollutants 90% – Total Nitrogen 45% – Total Phosphorus 65%

Conclusion

The Bella Baia apartment building development design documentations have been reviewed to identify potential sustainability considerations suitable for the development. This report provides responses to address design standards requirements outlined under the EDQ PDA Guidelines no. 08, Climatic response section.

Appendix A – Average 6 stars NatHERS Rating Group Certificates

Nationwide House Energy Rating Scheme — Class 2 summary

NatHERS Certificate No. DL5QOJFIN1

Generated on 12 Mar 2023 using FirstRate5 v5.3.2b

Property

Address 57 Banana Street, Redland Bay, QLD, 4165

Lot/DP

NatHERS climate zone

Accredited assessor

Annie Sim

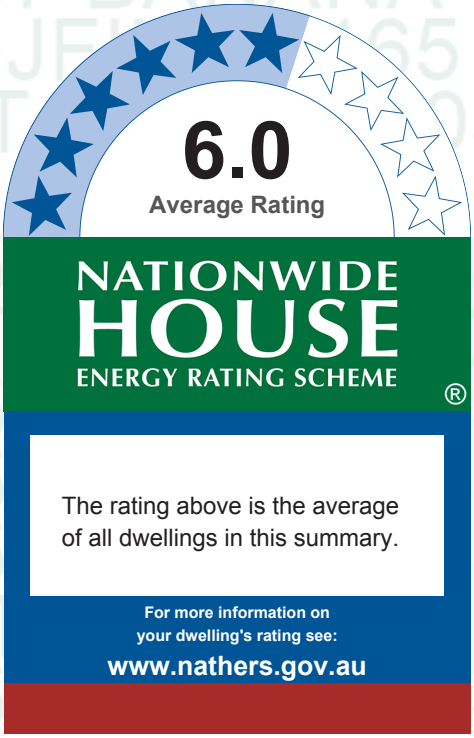
Figtree Consult

annie.sim@figtreeconsult.com

0450141082

Accreditation No. 101554

Assessor Accrediting Organisation ABSA



Verification

To verify this certificate, scan the QR code or visit https://www.fr5.com.au/QRCodeLanding?PublicId=DL5QOJFIN1&GrpCert=1 When using either link, ensure you are visiting www.fr5.com.au.

Summary of all dwellings

Certificate number and link	Unit number	Heating load (MJ/m²/p.a.)	Cooling load (MJ/m²/p.a.)	Total load (MJ/m²/p.a.)	Star rating
KRJRZ8U10V	201	13.4000000000	31.7000000000	45.1000000000	5.8
QGZRKLB1SO	202	10.5000000000	36.3000000000	46.8000000000	5.6
62M7ZA4I5K	203	12.0000000000	38.7000000000	50.7000000000	5.3
GHAQESJPEM	301	7.3000000000	32.8000000000	40.1000000000	6.3
BMG18F9H6V	302	6.4000000000	38.2000000000	44.6000000000	5.8
9HNWI8TDB4	303	5.7000000000	42.3000000000	48.0000000000	5.5
BFWATKY459	401	9.0000000000	24.6000000000	33.6000000000	7

Continued over

National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at www.abcb.gov.au.

State and territory variations and additions to the NCC may also apply.

Summary of and links to all dwellings (continued)

Certificate number and link	Unit number	Heating load (MJ/m²/p.a.)	Cooling load (MJ/m²/p.a.)	Total load (MJ/m²/p.a.)	Star rating
DC35GUE3RP	402	7.8000000000	32.8000000000	40.6000000000	6.2
0TKPZE61N9	403	8.2000000000	30.2000000000	38.4000000000	6.4
CWIE85ZGIY	501	9.3000000000	23.8000000000	33.1000000000	7.1
QFL7R6ORPY	502	8.1000000000	32.6000000000	40.7000000000	6.2
30WVES5GKP	503	8.6000000000	30.2000000000	38.8000000000	6.4
N6Q66R3Z7L	601	10.0000000000	23.1000000000	33.1000000000	7.1
48V38VHN73	602	7.9000000000	32.2000000000	40.1000000000	6.3
ZPMZFLAX9P	603	9.2000000000	29.6000000000	38.8000000000	6.4
AS63KUYPAA	701	8.9000000000	41.3000000000	50.2000000000	5.3
DZUE35F3WT	702	11.7000000000	57.4000000000	69.1000000000	4.1
Average		9.1	34	43	6.0

Explanatory notes

About this report

This summary rating is the average rating of all NCC Class 2 dwellings in a development. The individual dwellings' ratings are a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate the energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances, or energy production of solar panels. For more details about an individual dwelling's assessment, refer to the individual dwelling's NatHERS Certificate (accessible via link).

Accredited Assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO). AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country.

Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content, input and creation of the NatHERS Certificate is by the assessor. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

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