DA ENERGY & BASIX REPORT

24-26 Railway Parade, Westmead
DA Energy & BASIX Report

Revision 02

For Drill Pty Ltd

Melbourne Sydney Canberra Brisbane

Revision Information

	24-26 Railway Parade, Westmead
Title	DA Energy & BASIX Report
Client	Drill Pty Ltd
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Revision Schedule

Revision	Date	Issue Name	Author	Authorised
00	31st Oct-2017	For DA Issue	RL	LEP
01	4th Dec-2017	For DA Issue – Revised BASIX and Nathers with DGU	RL	LEP
02	24th May-2018	For DA Issue – Revised Drawings	RL	LEP

Contents

1. Introduction

The proposed development at 24-26 Railway Parade Westmead is a new 15 storey mixed use development comprising of:

- 3 levels of basement car parking
- 4 stories consisting of gym, supermarket, food & beverage, tavern, commercial and retail spaces
- 6 stories of residential apartments (Class 2)
- 5 stories of serviced hotel / apartments (Class 3)

The energy efficiency strategies proposed are designed to assist the development to achieve good environmental performance and meet the regulatory requirements of the National Construction Code Building Code of Australia (BCA), Building Sustainability Index (BASIX), and the development policies of City of Parramatta Council.

2. Reference Design Documentation

This report has been prepared for the 24-26 Railway Parade Westmead project based on the architectural design by Sissons Architects as described in the following drawings:

16-021	DA111 [A]	LB4 Car Park Plan
16-021	DA112 [A]	LB3 Car Park Plan
16-021	DA113 [A]	LB2 Car Park Plan
16-021	DA114 [A]	LB1 Store/Loading Dock Plan
16-021	DA115 [A]	Lower Ground
16-021	DA116 [A]	Upper Ground
16-021	DA117 [A]	Level 01 – Tavern / Food & Beverage
16-021	DA118 [A]	Level 02 – Medical Centre
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16-021	DA122 [A]	Level 09-11 Apartment Floor Type A
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16-021	DA124 [A]	Roof Plan
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3. Energy Efficiency Targets

3.1.Parramatta Council Development Control Plan (DCP) 2011

Part 3 – Development Principles; Section 3.2.4 Energy Efficient Design

Objectives

1. To promote sustainable development which uses energy efficiently and minimises non-renewable energy usage in the construction and use of buildings
2. To ensure that development contributes positively to an overall reduction in energy consumption and greenhouse gas emissions
3. To reduce energy bills and the whole of life cost of energy services

Design Principles

Residential

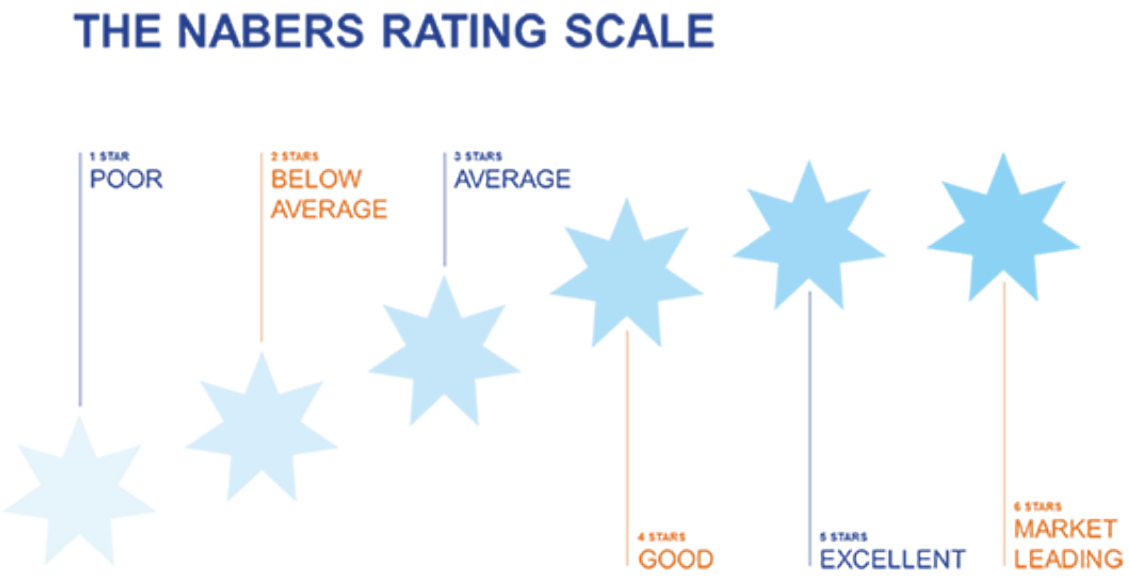
1. Where applicable, development is to demonstrate compliance with the design principles embodied in the Building Sustainability Index (BASIX). All commitments listed on a BASIX certificate must be marked on all relevant plans and specifications.
2. The principles and properties of thermal mass, glazing, insulation and solar energy are to be recognised and incorporated into the design of residential development not subject to BASIX.

Non-Residential Development

3. Improve the control of mechanical space heating and cooling by design heating / cooling systems to target only those spaces which require heating or cooling, not the whole building
4. Improve the efficiency of hot water systems by:
    a. Encourage the use of solar powered hot water systems. Solar and heat pump systems must be eligible for at least 24 Renewable Energy Certificates (RECs) and domestic type gas systems must have a minimum 3.5-star energy efficiency rating;
    b. Insulating hot water system; and
    c. Installing water saving devices, such as flow regulators, 3 stars Water Efficiency Labelling and Standards Scheme (WELS Scheme) rated shower heads, dual flush toilets and tap aerators
5. Reduce reliance on artificial lighting and design lighting systems to target only those spaces which require lighting at any particular 'off peak' time, not the whole building. Incorporate a timing system to automatically control the use of lighting throughout the building
6. All non-residential development Class 5-9 will need to comply with the Building Code of Australia energy efficiency provisions
7. An Energy Efficiency Report from a suitably qualified consultant that demonstrates a commitment to achieve no less than 4 Stars under the National Australian Built Environment Rating System (NABERS) or equivalent must be provided for all commercial and industrial development with a construction cost of over $5 million.

3.2.NABERS

The National Australian Built Environment Rating System (NABERS) is a government initiative to measure and compare the environment performance of Australian buildings. NABERS measures the energy efficiency, water usage, waste management and indoor environment quality of a building or tenancy and its impact on the environment. NSW Office of Environment and Heritage is the NABERS administrator, on behalf of the Commonwealth, state and territory governments.



The commercial component of the development is not likely to exceed the Parramatta Council construction cost limit of over $5 million for a NABERS rating. Notwithstanding this, to meet the City of Parramatta Council's DCP intent, it is proposed that for the non-residential commercial office component of the 24-26 Railway Parade development will be designed such that it should achieve a 4 Stars NABERS rating if it was to be officially rated.

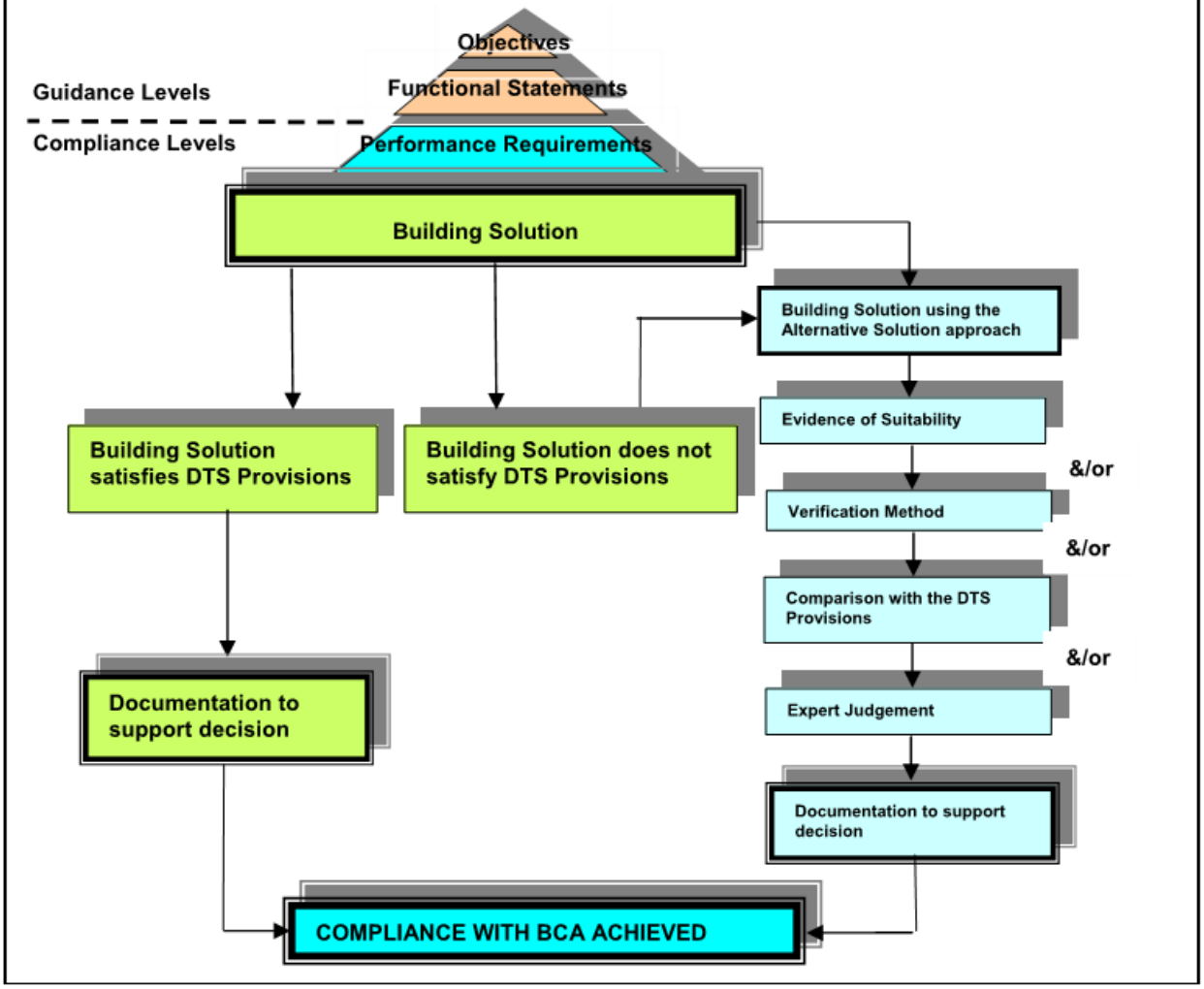
3.3.BCA Section J

The National Construction Code (NCC): Building Code of Australia (BCA) Section J sets minimum energy performance requirements for all new development, which building fabric and Glazing thermal performance, cover air-conditioning, ventilation, lighting, power and hot water.

BCA Section J compliance can be demonstrated by complying with the Deemed-to-satisfy (DTS) provisions stipulated in the BCA or an Alternative Solution Approach.

The figure below, references from the BCA, provides the performance based compliance frameworks for compliance with BCA Section J. The proposed development is being designed to meet these BCA energy efficiency requirements.

Figure 2 – Performance based compliance framework



3.4.BASIX

The Building Sustainability Index (BASIX) contains a number of mandatory provisions and guidance to reduce consumption of potable water, emission of greenhouse gases, and to improve the thermal performance of residential buildings.

The BASIX assessment is divided into three sections, each independently measuring the efficiency of the development. These are:

- Water; a minimum potable water usage reduction of 40% compared to a 'pre-BASIX' home benchmark home.
- Thermal Comfort; the expected level of energy consumption to heat and cool for the whole development (weighted average) must comply with the Thermal Comfort target.
- Energy; the development must achieve an energy reduction target of 25% to units.

4. Proposed ESD Strategy

4.1.Energy Efficiency for the Non-Residential Development

Incorporate a number of ESD strategies which will demonstrate the development's contribution to the Council's sustainability policy of 4 Stars NABERS. The proposed strategy includes:

- High efficiency air conditioning systems
- Dedicated cooling system to serve the commercial office and retail of the development with multiple stages for efficient low load operation.
- High efficiency modular boilers to provide heating hot water.
- Lifts to be provided with regenerative braking.
- High efficiency LED and fluorescent lighting with an average power density reduction of no less than 25% over Part J6 DTS lighting power densities (not considering adjustment factors). Light fitting of types suits to task will be provided in the common / back of house / plant room areas.
- Appropriate lighting control strategy which includes timers, photocells and dimming
- Provision of daylight sensor lighting control to public areas adjacent the façade.
- Provision of high performance façade to serve the non-residential component of the development.
- Provision of dedicated DX air conditioning systems serving 24/7 operation spaces.
- Multi fan carpark ventilation systems each controlled by carbon monoxide sensors.
- Extensive energy meeting to facilitate energy monitoring.
- Natural ventilation of plantrooms where practicable.

The final selection of which of these strategies will be adopted into the design will be dependent upon the conclusion of detailed energy modelling demonstrating the anticipated performance of the development.

The Section J Energy Efficiency report which stipulates the minimum Deemed-to-Satisfy requirements for the 24-26 Railway Parade development is shown in Appendix A.

4.2.Energy Efficiency for the Residential Development

The residential component of the development will be designed to comply with the BASIX and Parramatta DCP requirements.

The following energy efficiency strategies will be assessed to serve the residential development:

- Energy conservation through passive design approaches. The proposed passive design approach responds to the local climate, local sun path and wind profile, reducing the building's demand for active building services systems to provide thermal comfort and lighting and reducing peak energy demand and annual energy consumption.
    - Provision of high thermal performance building envelope (walls, ceiling/roof, floor)
    - Provision of high thermal performance glazing system
- Provision of energy efficient direct expansion (DX) fan coil units sized to cater for the thermal loads serving the main living space and bedrooms
- Use of natural and mixed mode ventilation where applicable
- Provision of high efficiency LED downlights

The BASIX report for the residential component is shown in Appendix B.

Appendix A – BCA Section J Report

THERMAL ENVIRONMENTAL

LCI Consultants

24-26 Railway Parade, Westmead

BCA – SECTION J DTS COMPLIANCE REPORT

Report: S-R2017102600
25th May 2018

REVISION STATUS

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00	Initial Issue – For Review	31/10/2017	AA
01	Issued – For DA	04/12/2017	AA
02	Issued – for DA (updated drawing list)	25/05/2018	AA

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EXECUTIVE SUMMARY

Thermal Environmental has undertaken review of Section J requirements for the proposed mixed use development located at 24-26 Railway Parade, Westmead NSW. The energy efficiency provisions of the section J using the Deemed-to-Satisfy (DTS) method are analysed and presented within this report.

The proposed building fabric performance is detailed in Section 2.4.1 of this report. A summary of building fabric requirements are presented below.

Construction Reference	Location	Required Insulation Rating	Air Cavity (non reflective and un-ventilated)
Roof / Ceiling Construction			
Flat Concrete roof - 200 mm thick	All retail Units on Ground Floor	R2.58	Varies and minimum 100 mm required.
External Wall Construction			
190 mm Concrete Blockwork	External wall	R2.24	20 mm (+ space take by insulation)
Internal Wall Construction			
190 mm Concrete Blockwork	Internal Wall	R1.16	20 mm (+ space take by insulation)
Stud and Plasterboard lining	Internal Wall	R1.27	20 mm (+ space take by insulation)
Floor Construction			
Concrete Floor – 200 mm Concrete	Retail Ground	R1.7	-

The summary of compliant glazing system (glass and frame) for the proposed design using DTS method is summarised in Section 2.4.2 of this report.

Reviews of the Section J provisions that are applicable to the development in the areas of building sealing, air conditioning and ventilation systems, artificial lighting and power, hot water supply and access for maintenance are presented, these needs to be further developed in conjunction with the services design.

1 INTRODUCTION

The proposed development at 24-26 Railway Parade, Westmead NSW, is a mixed use residential building with Retail/Supermarket, Tavern, Gym, Food and Beverage, Office and Hotel. The Section J DTS assessment is carried out for each building classifications of the development.

Under the Building Code of Australia (BCA) building classification we have following building classifications:

- Gym, Retail, Supermarket Trading Floor Food and Beverage and Tavern – Class 6
- Office – Class 5; and
- Hotel – Class 3.

The development has been assessed against the Deemed-to-Satisfy (DTS) requirements of the BCA Section J. The purpose of the report is to assess the design of the facility to establish minimum mandatory requirements and to comply with the BCA 2016 – Section J Energy Efficiency Provisions for building fabric (J1) and external glazing (J2).

Other parts of the Section J such as J3, J5 to J8 to be reviewed by services engineers in the design, specification and equipment selection of mechanical, electrical and hydraulics services to comply with the DTS provision.

This review has not considered the alternative performance methods of demonstrating compliance. The alternative method requires detailed energy simulation of the building fabric and services to be undertaken using verification method (JV3). The verification method is only considered if it is not practical to achieve energy efficiency compliance using DTS provisions.

1.1 METHODOLOGY

The methodology employed in this report includes the following steps:

- Review BCA 2016 – Section J requirements.
- Review proposed building design and construction to assess compliance and identify and non-compliance issues.
- Provide appropriate recommendations for any non-compliance; and
- Review recommendations to determine the most appropriate solution for adoption and compliance.

1.2 DOCUMENTATION

The following documentation shown in Table 1, supplied by SISSONS Architect was used in the preparation of this report:

Table 1: Documentation Supplied

ARCHITECTURAL DRAWINGS		REV
DA001	DRAWING LIST	A
DA005	SITE PLAN	A
DA006	SITE ANALYSIS - EXISTING CONTEXT	A
DA007	SITE ANALYSIS - FUTURE CONTEXT	A
DA008	OVERALL GROUND FLOOR PLAN - DEMOLITION	A
DA009	OVERALL GROUND FLOOR PLAN - PROPOSED	A
DA111	LB4 CAR PARK PLAN	A
DA112	LB3 CAR PARK PLAN	A
DA113	LB2 CAR PARK PLAN	A
DA114	LB1 GYM_STORE_LOADING DOCK PLAN	A
DA115	LOWER GROUND - ASHLEY LANE	A
DA116	UPPER GROUND - RAILWAY PARADE	A
DA117	LEVEL 01 - TAVERN_F&B PRECINCT	A
DA118	LEVEL 02 - MEDICAL CENTRE	A
DA119	LEVEL 03 - HOTEL LOBBY	A
DA120	LEVEL 04- LEVEL 07 - HOTEL	A
DA121	LEVEL 08 - PLANT ROOM	A
DA122	LEVEL 09-11 APARTMENT FLOOR TYPE A	A
DA123	LEVEL 12-14 APARTMENT FLOOR TYPE B	A
DA124	ROOF PLAN	A
DA151	RAILWAY PARADE ELEVATION (SOUTH)	A
DA152	ASHLEY LANE ELEVATION (EAST)	A
DA153	NORTH ELEVATION	A
DA154	WEST ELEVATION	A
DA155	ARCADE ELEVATIONS	A
DA161	SECTION 1	A
DA162	SECTION 2	A
DA163	SECTION 3	A
DA164	SECTION 4	A
DA165	SECTION 5	A

1.3 CLIMATE ZONE

The BCA splits regions of Australia up into eight different climate zones. Energy efficiency provision within the BCA Section J are dependent upon the climate zone a development falls within. The development is located within the Parramatta City Council and therefore falls within Climate Zone 6 according to Part A1 of the BCA.

2 SECTION J ENERGY EFFICIENCY REVIEW

Section J of the BCA sets out a range of measures that requires buildings to be constructed to reduce greenhouse gas emissions. This requires improved building energy performance and ensures the installed services are operated in an efficient manner. Energy efficiency provisions are outlined for building construction and its services (heating, cooling, power, artificial lighting and hot water supply). In addition to this building's heating services, energy is to be obtained from a low greenhouse gas intensity source or an onsite renewable energy source or through another process as reclaimed energy

2.1 BCA SECTION J PERFORMANCE REQUIREMENTS

There are three performance requirements of Section J in the BCA as outlined below:

Performance Requirement – JP1

A building, including its services, must have, to the degree necessary, features that facilitate the efficient use of energy appropriate to:

- The function and use of the building and services;
- The internal environment;
- The geographic location of the building;
- The effects of nearby permanent features such as topography, structures and buildings;
- Solar radiation being:
  - utilised for heating;
  - controlled to minimise energy for cooling;
- The sealing of the building envelope against air leakage;
- The utilisation of air movement to assist heating and cooling;
- The energy source of the services.

Performance Requirement – JP2

A building, including its services, must have, to the degree necessary, features that facilitate the maintenance of systems and components appropriate to the function and use of the building.

Performance Requirement – JP3

Heating such as for a conditioned space must, to the degree necessary, obtain energy from –

- A source that has a greenhouse gas intensity that does not exceed 100 g CO_2-e/MJ of thermal energy load; or
- An on-site renewable energy source; or
- Another process as reclaimed energy.

There are two options to meet the performance requirement of Section J. The design and function of the building must comply with Deemed-to-Satisfy (DTS) provisions (JP1 and JP3) or pass Verification Method. The analysis of this report covers compliance with the Deemed-to-Satisfy provisions of Section J.

If the building design and function does not comply with the Deemed-to-Satisfy provisions, the building design and function must undergo Verification Methods JV3 of the Section J. The Section J Verification Method (JV3) has processes outlined to determine the energy efficiency of a building through the use of a dynamic thermal simulation technique. JV3 is outside the scope of this assessment.

2.2 DEEMED-TO-SATISFY (DTS) PROVISIONS

The DTS provisions within Section J of the BCA outline the following:

- Part J1 Building Fabric – Minimum thermal performance for constructions according to climate zone for roofs, ceilings, roof lights, walls, and floors.
- Part J2 Glazing – Methods outlined to control heat loss and gain in a building through the use of glazed elements within the allowances specified. This applies to both internal and external glazing.
- Part J3 Building Sealing – Provisions to reduce the loss of conditioned air and restrict unwanted infiltration to a building.
- Part J4 Air Movement – No longer relevant. This section has been deleted from the BCA.

- Part J5 Air-Conditioning and Ventilation Systems – Requirements to ensure these services are used in an efficient manner.
- Part J6 Artificial Lighting and Power – Requirements for lighting and power to ensure energy is used efficiently within a building.
- Part J7 Hot Water Supply – Restrictions for hot water supply design except for solar systems within climate zones 1-3.
- Part J8 Access For Maintenance

2.3 BUILDING CLASSIFICATION

The proposed mixed use development has more than one classification for section J assessment:

- Class 3 – Hotel.
- Class 5 – Office ; and
- Class 6 – Retail,

2.4 SECTION J APPLICABLE PARTS REVIEW

Table 2 outlines the Parts of Section J that are applicable to a Class 3, 5 and 6 Building.

Table 2: Applicable Section J Parts

BCA Section J Parts	Class 3, 5 and 6	Responsibility
Part J1 – Building Fabric	Applicable	Architect
Part J2 – External Glazing	Applicable	Architect
Part J3 – Building Sealing	Applicable	Architect and Services Engineers
Part J4 – Air Movement	Not relevant	Not Applicable
Part J5 – Air Conditioning and Ventilation Systems	Applicable	Mechanical Services Engineers
Part J6 – Artificial Lighting and Power	Applicable	Electrical Services Engineers
Part J7 – Hot Water Supply	Applicable	Hydraulic Services Engineers
Part J8 – Access for Maintenance	Applicable	Architect and Services Engineers

Following section outlines the detail description of Section J requirements applicable to the proposed development.

2.4.1 Part J1 – Building Fabric

Part J1 of Section J outlines the requirements for Building Fabric covering Roof and Ceiling Construction, Walls, Floors and Roof Lights (Sky Lights).

Based on the architectural information received, data tables have been compiled below showing the roof, ceiling, wall, floor construction make-ups of the development and the requirements for roof-lights if any used. Adjustments and/or inclusions to the construction make-ups where required in order to achieve the requirements have been outlined. Thermal properties of listed materials within data tables are assumed to be equivalent to those listed in *Specification J1.2 Material Properties* of Section J unless indicated otherwise. Insulation thicknesses quoted are nominal and taken from manufacturer's data for typical insulation products as assumed within the calculation tables.

Roof and Ceiling Construction

The conditioned spaces of the proposed development must achieve a downwards heat flow (heat gain) minimum total thermal resistance (R-Value) of 3.2 m²K/W for a roof/ceiling generally. The minimum thermal resistance required and the absorptance values are as shown in Table 3.

The lighter coloured roof will have higher heat reflection or lower solar absorptance compared to darker roof. The light coloured roof or low solar absorptance will therefore require less minimum overall insulation compared to the medium and dark coloured roof.

The roof colour proposed for the development is a light coloured roof therefore the minimum total resistance required is R-value of 3.2.

Table 3: Roof and Ceiling Minimum Total Thermal Resistance

Solar Absorptance	Absorptance Value	Minimum Resistance (R-Value)
Upper surface solar absorptance.	≤ 0.4 – Light	3.2
	> 0.4 and ≤ 0.6 – Medium	3.7
	> 0.6 – Dark	4.2

The roof or ceiling insulation is required for the conditioned spaces separating a conditioned space from a non-conditioned or an exterior of the building.

Any space within the building that does not form the part of a conditioned space or envelope for Section J assessment, the roof/ceiling insulation requirements does not apply. However the roof/ceiling construction is recommended to have some form of insulation to maintain comfort conditions or provide more habitable space and reduce overall energy consumption. The detailed thermal comfort assessment associated with the level of insulation installed, is outside the scope of this report, and if thermal comfort assessment is required Thermal Environmental can provide a separate report.

The various roof types used within the development as a conditioned space envelope are shown in Table 4. The assessment and the insulation requirements for each of the roof types are detailed in this section.

Table 4: Roof Types Used within the Development

Roof/Ceiling	Roof Pitch	Construction Description	Area Serving
Concrete Slab	Flat (<5°)	Concrete Slab and plasterboard ceiling	Roof/Ceiling of Hotel, Medical Centre

Table 4 shows the detail thermal resistance calculation and the compliance requirements for the various roof constructions of the development as outlined within the architectural documentation.

The associated thermal data of the flat concrete roof construction is shown in Table 5, including the level of insulation required in order to comply with the section J requirements.

Table 5: External Roof/Ceiling Construction – Concrete Flat Roof

Construction Layer	Nominal Thickness (mm)	Thermal Conductivity W/m K	Thermal Resistance (m² K/W)
Outside Air Film (Still air assumed)	–	-	0.04
Concrete Slab	200	1.44	0.14
Air cavity (Non reflective and Unventilated)	Varies	-	0.22
Plasterboard Lining	10	0.17	0.06
Inside Air Film (still air assumed)	–		0.16
Total Thermal Resistance (R-Value) of the Construction			0.62
Deficit from Section J (DTS) Compliance Thermal Resistance(m^2 K/W)			2.58
Recommended Insulation Level			
Minimum Thermal Insulation Required	-	-	*2.58 (Product)*
New Total Thermal Resistance (R-Value)			*3.20*

** Upper surface solar absorptance value to be ≤ 0.4.*

It is seen the total construction thermal resistance adds up to R0.62 falling short of minimum section J requirements by 2.58. In order to meet section J requirements it is recommended that bulk insulation with minimum product rating of R2.58 be installed. With the minimum recommended insulation the roof/ceiling construction adds up to R3.20, which satisfies the minimum section J roof insulation requirements therefore complies with the requirements of the BCA.

Where for operational or safety reasons associated with exhaust fans, flues or recessed downlights, the area of required ceiling insulation is reduced, the loss of insulation must be compensated for by increasing the R-value of the insulation in the remainder of the ceiling accordance with Table 6.

Table 6: Adjustment of Minimum R-value for Loss of Ceiling Insulation

Percentage of ceiling area uninsulated	Minimum R-value of ceiling insulation required to satisfy loss of ceiling insulation									
	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5
	Adjusted minimum R-value of ceiling insulation required to compensate for loss of ceiling insulation area.									
0.5% to less than 1.0%	1.0	1.6	2.2	2.8	3.4	4.0	4.7	5.4	6.2	6.9
1.0% to less than 1.5%	1.1	1.7	2.3	2.9	3.6	4.4	5.2	6.1	7.0	N/A
1.5% to less than 2.0%	1.1	1.7	2.4	3.1	3.9	4.8	5.8	6.8	N/A	N/A
2.0% to less than 2.5%	1.1	1.8	2.5	3.3	4.2	5.3	6.5	N/A	N/A	N/A
2.5% to less than 3.0%	1.2	1.9	2.6	3.6	4.6	5.9	N/A	N/A	N/A	N/A
3.0% to less than 4.0%	1.2	2.0	3.0	4.2	5.7	N/A	N/A	N/A	N/A	N/A
4.0% to less than 5.0%	1.3	2.2	3.4	5.0	N/A	N/A	N/A	N/A	N/A	N/A
5.0% or more	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

More than 5% uninsulated ceiling space is not allowed. Interpolation of insulation values is allowed to determine the adjusted minimum R-value of the roof/ceiling insulation.

Roof Lights (Sky Lights)

There are no roof lights used within the facility, therefore the requirements of roof lights do not apply for the proposed development.

Wall Construction

The external wall constructions of the development forming part of the envelope of conditioned spaces must satisfy one of the following options taken from Table J1.5a for climate zone 5:

a) i) Achieve a minimum Total R-Value of 2.8 m^2K/W.

ii) The minimum total R-Value in (i) is reduced

- for a wall with a surface density of not less than 220 kg/m^2, by R-value of 0.5; and
- for a wall that is facing south orientation the total R-Value can be reduced by R-value of 0.5 or shade the external wall of the storey with a verandah, balcony, eaves, overhang, covered car park, carport or the like, which projects at a minimum angle of 30° by R0.5 or if the shading projects a minimum angle of more than 60° the total R-Value can be reduced by R-value of 1.0.

b) For an external wall where the only space for insulation is provided by a furring channel, top hat section, batten or the like –

i) Achieve a minimum Total R-Value of 1.4 m^2K/W; and
ii) Satisfy glazing energy index option B of Table J2.4a (see Section 2.4.2).

The internal wall construction of the development in climate zone 5 that forms the part of the envelope must achieve followings:

a) R-value of 1.0 with the non-conditioned space (for example a common wall between a conditioned and non-conditioned zones) –

i) enclosed with mechanical ventilation of not more than 1.5 air change per hour of outside air; and

ii) glazing not more than the DTS requirements; or

b) R-value of 1.8 for all other conditions than (a).

The wall construction of the development are shown within Table 7. The assessment and the insulation requirements for each of the wall types are detailed in this section.

Table 7: Wall Types Used within the Development

Wall Types (Tag)	Description	External /Internal	Surface Density (kg/m^2)	Shading Projection
-	190 mm Concrete Blockwork	External	N/A	N/A
-	Metal Stud with Plasterboard on either side	Internal	N/A	N/A
-	190 mm Concrete Blockwork	Internal	N/A	N/A

Options (a) (ii) cannot be used to assess compliance for the external walls as all the external walls also do not meet the surface density requirements. The external walls also do not also satisfy the shading requirements throughout the facility.

Option (b) above has been ignored as it requires the use of Energy Index Option B (EIO-B) for the external glazing (see Section 2.4.2). EIO-B puts the emphasis back onto the glazing elements of the building to obtain the required thermal performance, driving up the performance requirement of the glass.

Option (a) (i) has therefore been used to assess compliance for the external walls of the development within this report. The external wall constructions of the development must achieve a minimum Total R-Value of 2.8m^{2}K/W according to Option (a) (i) above, in order to comply with the Section J.

Internal wall constructions that separate conditioned from non-conditioned spaces that form part of the envelope of the conditioned spaces are required in climate zone 5 to achieve the Total R-value of R1.8m^{2}k/W listed in Table J1.5b of the BCA for internal walls.

Table 8 describes the concrete blockwork external wall construction of the development and the associated thermal data.

Table 8: External Wall – Concrete Blockwork

Construction Layer	Nominal Thickness	Thermal Conductivity	Thermal Resistance
	(mm)	W/m K	(m² K/W)
Outside Air Film (7.0m/s wind assumed)	–	-	0.04
Concrete Blockwork	190	1.1	0.17
Air Cavity (minimum) - Non reflective and Unventilated	20	-	0.17
Plasterboard Lining	10	0.17	0.06
Inside Air Film (still air assumed)	–	-	0.12
Total Thermal Resistance (R-Value) of the Construction			0.56
Deficit from Section J (DTS) Compliance Thermal Resistance(m^2 K/W)			2.24
Recommended Insulation Level			
Minimum Thermal Insulation Required	-	-	*2.24 (Product)*
New Total Thermal Resistance (R-Value)			*2.80*

The external wall construction as shown in Table 8 adds up to a total thermal resistance of 0.54 m^{2}K/W, which falls short of section J requirement by 2.24 m^{2}K/W. In order to meet the section J requirements the wall cavity must contain insulation with a minimum rating of R2.24 within the cavity. With the

recommended minimum insulation, the total construction-value is R2.80, which meets the Section J wall Construction requirements.

Table 9 describes plasterboard lining internal wall construction of the development as outlined within the architectural documentation with the associated thermal data.

Table 9: Internal Wall –Plasterboard Lining

Construction Layer	Nominal Thickness	Thermal Conductivity	Thermal Resistance
	(mm)	W/m K	(m² K/W)
Outside Air Film (7.0m/s wind assumed)	–	-	0.12
Plasterboard Lining	10	0.17	0.06
Air Cavity (Non-reflective and unventilated)	20	-	0.17
Plasterboard Lining	10	0.17	0.06
Inside Air Film (still air assumed)	–	-	0.12
Total Thermal Resistance (R-Value) of the Construction			0.53
Deficit from Section J Compliance Thermal Resistance(m^2 K/W)			1.80
Recommended Insulation Level			
Thermal Insulation (Rigid insulation with reflective lining)	-	-	*1.27 (Product)*
New Total Thermal Resistance (R-Value)			*1.80*

The Internal wall construction as shown in Table 9 adds up to a total thermal resistance of 0.53 m^2K/W, which falls short of section J requirement by 1.27 m^2K/W. In order to meet the section J requirements the wall cavity must contain insulation with a minimum rating of R1.27. With the recommended minimum insulation the total construction-value is R1.80, which meets the Section J wall Construction requirements.

Table 10 describes the internal Blockwork wall construction and the associated thermal data.

Table 10: Internal Wall – Blockwork with Plasterboard Lining

Construction Layer	Nominal Thickness	Thermal Conductivity	Thermal Resistance
	(mm)	W/m K	(m² K/W)
Outside Air Film (7.0m/s wind assumed)	–	-	0.12
Concrete Blockwork	190	1.1	0.17
Air Cavity (minimum) - Non reflective and Unventilated	20	-	0.17
Plasterboard Lining	10	0.17	0.06
Inside Air Film (still air assumed)	–	-	0.12
Total Thermal Resistance (R-Value) of the Construction			0.64
Deficit from Section J (DTS) Compliance Thermal Resistance(m^2 K/W)			1.16
Recommended Insulation Level			
Minimum Thermal Insulation Required	-	-	*1.16 (Product)*
New Total Thermal Resistance (R-Value)			*1.80*

The internal wall construction as shown in Table 10 adds up to a total thermal resistance of 0.64 m^2K/W, which falls short of section J requirement by 1.16 m^2K/W. In order to meet the section J requirements the

wall cavity must contain insulation with a minimum rating of R1.16. With the recommended minimum insulation and the air cavity the total construction-value is R1.80, which meets the Section J wall Construction requirements.

Floor Construction

In climate zone 5, the floor construction that is part of the envelope, that separates a conditioned space and a non-conditioned space without any in-slab heating or cooling system must achieve the total thermal resistance R-value for downward heat flow (heat loss) of 2.0m^{2}K/W as taken from Table J1.6 of Section J.

The suspended floor that is part of the envelope, that separates a conditioned space must achieve the total thermal resistance R-value as described above to satisfy the requirements of Section J.

Table 11: Floor Construction – Concrete Slab

Construction Layer	Nominal Thickness (mm)	Thermal Conductivity W/m K	Thermal Resistance (m² K/W)
Outside Air Film (7.0m/s wind assumed)	–	-	0.04
Solid Concrete (2400 kg/m^3)	200	1.44	0.14
Inside Air Film (still air assumed)	–	-	0.12
Total Thermal Resistance (R-Value) of the Construction			0.30
Deficit from Section J Compliance Thermal Resistance(m^2 K/W)			1.70
Recommended Insulation Level			
Product Insulation	-	-	*1. 70(Product)*
New Total Thermal Resistance (R-Value)			*2.0*

The floor construction as shown in Table 11 adds up to a total thermal resistance of 0.30m^{2}K/W falling short of the Section J requirement by 1.70 m^{2}K/W. In order to achieve the Section J DTS requirement. It is recommended that this construction contain thermal insulation with minimum rating of R1.70 to meet section J minimum floor insulation requirements.

2.4.2 Part J2 –Glazing

The external glazing forming a part of the conditioned space envelope of the development must control the heat loss and gain in accordance with Clause J2.4 of Part J2. Clause J2.4 states the air conditioning energy value assigned to the glazing must not exceed the allowance from Table J2.4a multiplied by the façade area, as outlined in Table 12:

Table 12: Energy Index Option Parameter

Application	Energy Index Option	Air Conditioning Energy Value
Class 6	A	0.220
	B	0.191
Class 5	A	116
	B	0.082
Class 3	A	0.09
	B	0.061

Energy Index Option B is included in Part J2 to allow for a lower wall resistance value for wall constructions that have limited space only provided by a furring channel for insulation. However this is not the case for the facility. Therefore for the purposes of glazing assessment within this report, it has been assumed that the wall construction will contain more space for insulation than that provided by a furring channel. Assessment of the external glazing has been conducted using Energy Index Option A as option B would be more stringent to achieve DTS compliance in-terms of the glazing size and performance requirements.

The heat gain through a glazing unit can be theoretically calculated using the glazing system properties of thermal conductivity (U-Value) and Solar Heat Gain Co-efficient (SHGC) including any adjustments due to

the type of framing. The section J DTS assessment has been carried out as a means of selecting a DTS Section J compliant glazing system for each façade of the development. The glazing and façade areas for the development are only applicable to this development. Appendix 3.1 Summarises the Glazing outcome and compliance with the DTS assessment for various building classifications of the development.

2.4.3 Part J3 – Building Sealing

Part J3 of Section J outlines construction provisions to limit unconditioned air infiltrating into conditioned spaces and also limit conditioned air from escaping.

Clause J3.4 outlines that a seal to restrict air infiltration must be fitted to each edge of doors, openable windows or the like that separate conditioned spaces from non-conditioned spaces or external areas. This provision is not required for windows complying with Australian Standard AS 2047, roller doors, and fire doors, roller shutter grilles, security doors or device installed out of hours service. The seal required may be a foam or rubber compressible strip, fibrous seal or the like.

The main entrance to the development must have an airlock, self-closing door, revolving door or the like, where the conditioned space has a floor area of more than 50 m^2 or where a café, restaurant, open shop front or the like has a 3 m deep unconditioned zone between the main entrance.

Clause J3.5 outlines that any miscellaneous exhaust systems must be fitted with a sealing device such as a self-closing damper when serving a conditioned space or habitable room.

Clause J3.6 outlines for the conditioned areas that the roofs, walls floors and any openings such as for doors and windows must be constructed to minimise air leakage. The construction must enclose conditioned spaces by close fitting internal lining systems at the ceiling, wall and floor junctions or by sealing through caulking, skirting, architraves, cornices or the like. The requirements of this clause do not apply to openings, grilles and the like necessary for smoke hazard management.

Clause J3.7 outlines that if evaporative cooling is used, the system must be fitted with self-closing non-return dampers. This Clause is not applicable as there are no evaporative coolers being used for the proposed development.

It is recommended, Architects along with the project's head contractor to document the building sealing requirements as to show how Part J3 of the BCA has been satisfied.

2.4.4 Part J5 – Air Conditioning and Ventilation Systems

Part J5 of Section J outlines the provisions that apply to mechanical ventilation and air conditioning systems to ensure these services are used in an efficient manner. Mechanical services design to be in accordance with the requirements of the Section J5.

The following list outlines the applicable parts of Clause J5.2 to the development:

- The air conditioning system must be capable of being inactivated when the building or part of the building is un-occupied;
- Any motorised outside air or return air dampers must be closed when corresponding systems are switched off;
- The supply and return ductwork must be insulated and sealed in accordance with Specification J5.2, shown in the Appendix 3.2;
- Each air conditioning system must thermostatically control the temperature of each zone, served by that system;
- Each air conditioning system must not use mixed heated and cooled air to control temperature, if the system serves more than one air conditioning zone;
- Each air conditioning system must not utilise more reheat capacity corresponding to a temperature rise of 7.5 K for the design fixed flow rate, if the system serves more than one air conditioning zone;
- Each air conditioning system must not utilise more reheat capacity corresponding to a temperature rise of 7.5 K for the variable flow rate at nominal supply rate, but increased or decreased at the same rate that the supply air rate is respectively decreased or increased when serving more than one air conditioning zone;

- Other than packaged air conditioning unit, the air conditioning system to have a variable speed fan when the supply air quantity is varied;
- Use of direct economy cycle must be used to provide mechanical ventilation for other than process related applications and applications where humidity control is not required. Economy cycle to be installed for air conditioning unit with a capacity is over 35 kWr in climate zones 4, 5, 6, 7 and 8;
- The motor shaft power of all fans within each air conditioning system of the development must be limited to as per Table 13. This requirement is not applicable for un-ducted systems with a supply flow rate less than 1,000L/s, outdoor air preconditioning systems (such as air to air heat exchanges) and for process related components that uses HEPA filters;

Table 13– Maximum Fan Power Limit

Air Conditioning Sensible Heat Load (W/m^2 of the floor area of the Conditioned Space)	Maximum Fan Power (W/m^2 of the Floor Area of the Conditioned Space)	
	For an Air Conditioning System Serving not more than 500 m^2	For an Air Conditioning System Serving more than 500 m^2
Up to 100	5.3	8.3
101 - 150	9.5	13.5
151 - 200	13.7	18.3
201 - 300	22.2	28.0
301 - 400	30.7	37.0
For more than 400 W/m^2 sensible heat load – · In a building of not more than 500 m^2 floor area, use 0.09 W of fan power for each Watt of internal sensible heat load · In a building of more than 500 m^2 floor area use 0.12 W of fan power for each Watt of internal sensible heat load.		

- Mechanical ventilation systems must be capable of being switched off when the part of the building being served is unoccupied;
- Mechanical ventilation systems serving conditioned spaces must not ventilate greater than 20% more than required by Part F4 of the BCA. This requirement is not applicable when the additional outside air provides free cooling, balances required or process exhaust, or is preconditioned by an energy reclaiming system;
- In other than climate zone 2, where the number of person per m^2 is one or less as specified in D1.13 and the air flow rate is more than 1,000 L/s, have and energy recovery system to precondition outdoor air or have the ability to modulate the mechanical ventilation required by Part F4 in proportion to the number of occupants;
- The mechanical ventilation systems that exceed 1,000 L/s must have a fan motor shaft power to air flow rate ratio of 0.65 W/(L/s) without filters or 0.98 W/(L/s) with filters. For carpark exhaust, when serving a carpark with more than 40 vehicle spaces, be controlled by an atmospheric contaminant monitoring system in accordance with AS 1668.2. The fan motor shaft power to air flow rate ratio must not inhibit the operation of smoke hazard management and operation and essential ventilation such as garbage room, lift motor room, gas meter enclosure or gas regulator enclosure or the like. The requirement is not applicable for energy reclaiming system that preconditions outside air, process related components and miscellaneous exhaust that comply with J5.5.

Clause J5.3 outlines that the power supply to any air conditioning or heating systems with capacity greater than 10 kW(r)/(heating) and ventilation systems greater than 1,000 L/s must be controlled by a time switch in accordance with Specification J6 as shown in the Appendix 3.3.2. These requirements do not apply to air conditioning and ventilation system serving 24 hour occupancy such as a manufacturing process or emergency services.

Clause J5.4 outlines the following requirements for systems that provide heating or cooling for air-conditioning systems:

- Any piping, vessels, heat exchangers or tanks containing heated or chilled fluid, other than those with insulation levels covered by the Minimum Energy Performance Standards (MEPS), must be provided with insulation in accordance with Specification J5.4;
- For water flow rates greater than 2 L/s, the total motor shaft power to these systems pumps must not exceed as per Table 14;

Table 14– Maximum Pump Power Limit

Cooling or Heating Load (W/m^2 of the floor area of the conditioned space)	Maximum Pump Power (W/m^2 of the Floor Area of the Conditioned Space)		
	Chilled Water	Condenser Water	Heating Water
Up to 100	1.3	0.9	1.0
101 – 150	1.9	1.2	1.3
151 – 200	2.2	2.2	1.7
201 – 300	4.3	3.0	2.5
301 – 400	5.0	3.6	3.2
More than 400	5.6	5.6	3.6

- Each pump must be capable of varying the shaft speed when the rated capacity is more than 3 kW of pump power, except where the pump is needed to run at full speed for safe or efficient operation;
- For a system containing more than one water heater for heating a building, chiller or coil, must be capable of stopping the flow of water to those that are not operating.

For heating a space via water, such as boiler, that is a part of an air conditioning system, must achieve minimum thermal efficiency requirements as per Table 5.4b, when tested in accordance with BS 7190.

When gas is available use reticulated gas at the allotment boundary. The minimum thermal efficiency of a water heater taken from Table 5.4b is shown in Table 15.

Table 15– Minimum Thermal Efficiency for a Water Heater

Fuel Type	Rated Capacity ($kW_{heating}$)	Minimum Gross Thermal Efficiency (%)
Gas	Not more than 750	80
	More than 750	83
Oil	All Capacities	80

For heating a space other than via water, must be –

- A solar water heater; or
- A gas heater; or
- An oil heater, but only if reticulated gas in not available at the allotment boundary; or
- Heat pump heater; or
- A solid fuel burning heater; or
- A heater using reclaimed heat from another process such as reject heat from a refrigeration plant;
- In the case of electric heating only following requirements apply:
  - In climate zone 3 to 7 the electric heating capacity is as per Table 16 taken from Table J5.4c where reticulated gas in not available at the allotment boundary; or
  - The annual energy consumption for heating is not more than 15 kWh/m^2 of the floor area of the conditioned space in climate zones 1 to 5; or
  - Use of duct heaters that complies with followings:
    - For a fixed supply air rate, a 7.5 K temperature rise; and

- For a variable supply air rate, a 7.5 K rise in temperature at the nominal supply air rate but increased or decreased at the same rate that the supply air rate is respectively decreased or increased; or

- A combination of all of the above.

Table 16– Minimum Thermal Efficiency for a Water Heater

Floor Area of the Conditioned Space	BCA Climate Zone				
	3	4	5	6	7
	W/m^2 of Floor Area				
Not more than 500 m^2	50	60	55	65	70
More than 500 m^2	40	50	45	55	60

- Any outdoor heating appliances must be controlled to automatically turn off when not needed by an outdoor air temperature sensor, timer, motion detector, or the like.

Table 17 taken from Clause J5.4, Table J5.4d outlines the minimum energy efficiency ratios for packaged air-conditioning equipment with a capacity of not less than 65 kWr, including split units and heat pumps as tested in accordance with AS/NZS 3823.1.2 at test condition T1.

Table 17– Minimum Energy Efficiency Ratio for Packaged Air-conditioning Equipment

Equipment	Minimum Energy Efficiency Ratio (W_r / $W_{input\ power}$)	
	65kWr – 95kWr capacity	More than 95kWr capacity
Air Conditioner – Cooling	2.70	2.80
Heat Pump – Cooling	2.60	2.70

Table 18 taken from Clause J5.4, Table J5.4e outlines the minimum energy efficiency ratios for refrigerant chillers up to 350 kWr capacity when determined in accordance with ARI 550/590.

Table 18– Minimum Energy Efficiency Ratio for Refrigerant Chillers

Equipment	Minimum Energy Efficiency Ratio (W_r / $W_{input\ power}$)	
	For Full Load Operation	For Integrated Part Load
Water Cooled Chiller	4.2	5.2
Air Cooled or Evaporatively Cooled Chiller	2.5	3.4

Clause J5.4 outlines the following for heat rejection systems:

- An air cooled condenser fan motor that is part of an air conditioning system except part of packaged air conditioning equipment or part of refrigerant chillers must not use more than 42 W of fan motor power for each kW of heat rejected from the refrigerant when determined in accordance with ARI 460.
- The propeller or axial type of fan of a cooling tower that is part of an air conditioning system must not use more than 310 W of fan motor power for each L/s of cooling water circulated. For centrifugal fan the fan power should not exceed 590 W for each L/s of cooling water circulated.
- The propeller or axial fan of a closed circuit cooler that is part of an air conditioning system must not use more than 500 W of fan power for each L/s of cooled liquid fluid circulated. For centrifugal fan the fan power should not exceed 670 W of fan power for each L/s of cooled fluid circulated.
- The propeller or axial fan of an evaporative condenser that is part of an air conditioning system must not use more than 18W of fan power for each kW of heat rejected and if the fan is centrifugal the fan power should not exceed 22 W for each kW of heat rejected.
- The spray water pump of a closed circuit cooler or evaporative condenser must not use more than 150W of pump motor shaft power for each L/s of spray water circulated.

Clause J5.5 outlines that any miscellaneous exhaust system with an air flow greater than 1,000 L/s of the proposed development having a variable demand must be capable of:

- Having the operator reduce energy consumption such as with a variable speed drive;
- Being stopped when not required for operation.

These exhaust systems must be designed to minimise the exhausting of conditioned air. The requirements of Clause J5.5 do not apply to exhaust systems needed to balance required ventilation or where airflow must be maintained for safe operation.

2.4.5 Part J6 – Artificial Lighting and Power

Part J6 outlines provisions that apply to artificial lighting and power to ensure energy is used efficiently. Electrical services design to be in accordance with the requirements of the Section J6.

Clause J6.2 of Part J6 outlines the requirements for interior artificial lighting design. For the proposed development, the aggregate illumination power load must not exceed the power load allowance that is a function of the lighting areas, lighting levels and controls. Table 19 outlines the maximum illumination power densities for different applications within the proposed development.

The requirements of allowable power density do not apply to followings:

- Emergency lighting in accordance with Part E4.
- Signage and display lighting within cabinets and display cases that are fixed in place.
- A heater where the heater also emits light such as in bathrooms.
- Lighting of a specialist process nature such as in an operating theatre, fume cupboard or clean workstation.
- Lighting performance such as theatrical or sporting.
- Lighting for the permanent display and preservation of works of art or objects in a museum or gallery other than for retail sale, purchase or auction.

Table 19– Lighting Power Density Allowances

Lighting Application	Maximum Illumination Power Density (W/m^2)
Board Room and Conference Room	10
Carpark – general	6
Carpark – entry zone (first 20 m of travel)	25
Corridors and Circulation Space	8
Staff Change Room	6
Entry Lobby from Outside the Building	15
Common Room	8
Control Room, Switch Room and the Like	9
Kitchen and Food Preparation Area	8
Office (artificially lit to 200 lux or more)	9
Office (artificially lit to less than 200 lux)	7
Plant Room	5
Restaurant, Café and a Space for the Serving and Consumption of food or drinks	18
Retail Space	22
Storage with Shelving no Higher than 75% of the height of	8

Lighting Application	Maximum Illumination Power Density (W/m^2)
the aisle lighting	
Storage with Shelving Higher than 75% of the height of the aisle lighting	10
Service Area, Cleaners Room	5
Toilet, Locker Room, Staff Room, Rest Room and the Like	6
Wholesale storage and display area	10

For areas not listed in Table 19, the maximum illumination power density can be calculated from the required illuminance level for the space as follows:

- For an illuminance level of not more than 80 lux, 7.5 W/m^2; and
- For an illuminance level of more than 80 lux and not more than 160 lux, 9 W/m^2; and
- For an illuminance level of more than 160 lux and not more than 240 lux, 10 W/m^2; and
- For an illuminance level of more than 240 lux and not more than 320 lux, 11 W/m^2; and
- For an illuminance level of more than 320 lux and not more than 400 lux, 12 W/m^2; and
- For an illuminance level of more than 400 lux and not more than 480 lux, 13 W/m^2; and
- For an illuminance level of more than 480 lux and not more than 540 lux, 14 W/m^2; and
- For an illuminance level of more than 540 lux and not more than 620 lux, 15 W/m^2;

For an illuminance levels greater than 620 lux the average light source efficacy must not be less than 80 Lumens/W.

The allowable maximum illumination power densities as shown in Table 19 can be increased if control strategies are utilised to use energy more efficiently. The assessment of increases to the illumination power densities should be detailed further as the lighting designs are developed and for detail refer to lighting design engineer's compliance certificate. Clause J6.3 outlines methods for the control of interior artificial lighting and power. The applicable parts of this clause are shown in the following list:

- Artificial lighting of a room or space must be individually operated by a switch or other control device.
- An occupant activated device, such as a room security device, a motion detector in accordance with Specification J6 or the like.
- An artificial lighting switch must be located in a visible position within the room being switched or adjacent room where the lighting being switched is visible.
- An artificial lighting switch must not operate an area greater than 250 m^2 if in a class 5 building or not operate lighting for an area of more than 250m^2 for a space of not more than 2,000 m^2 or 1,000 m^2 for a space of more than 2,000 m^2 if in a 6 building.
- 95% of the light fittings in a building, other than a class 2 or 3 building or a class 4 part of a building, of more than 250m^2 must be controlled by:
  - A time switch in accordance with Specification J6; or
  - An occupant sensing device such as – a security card reader that registers a person entering and leaving the building; or a motion detector in accordance with Specification J6.
- In class 5 and 6 building of more than 250m^2, artificial lighting in a natural lighting zone adjacent to windows must be separately controlled from artificial lighting not in a natural lighting zone in the same storey except where –
  - The room containing the natural lighting zone is less than 20m^2; or
  - The room's natural lighting zone contains less than 4 luminaries; or
  - 70% or more of the luminaries in the room are in the natural lighting zone.

The provisions outlined above for artificial lighting are not applicable to emergency lighting systems that are in accordance with Part E4 of the BCA.

Clause J6.4 outlines the provisions applicable to interior decorative and display lighting. Within the following list the applicable parts of this Clause are shown:

- Interior decorative and display lighting must be controlled separately from other artificial lighting.
- Each area of interior decorative and display lighting must have a specific manual switch if the areas of display are to operate at separate times.
- A time switch in accordance with Specification J6, outlined in the Appendix 3.3.2, must control display lighting that exceeds 1 kW.
- Window display lighting must be controlled separately from other display lighting.

Clause J6.5 contains provisions for artificial lighting around the perimeter of a building. The following list outlines the applicable parts of this Clause:

- Artificial lighting around the perimeter of a building must be controlled by a daylight sensor or a time switch in accordance with Specification J6, shown in the Appendix 3.3.2.
- When the artificial lighting around the perimeter of a building exceeds 100W, the average light source efficacy must not be less than 60 Lumens/W or be controlled by a motion detector in accordance with Specification J6, shown in the Appendix 3.3.3. (Not applicable to emergency lighting).
- Decorative perimeter artificial lighting must be controlled by a time switch in accordance with Specification J6.

Clause J6.6 outlines a provision for power to boiling water and chilled water units, stating each unit must be controlled by a time switch in accordance with Specification J6, shown in the Appendix 3.3.2.

2.4.6 Part J7 – Hot Water Supply

Part J7 of Section J outlines the provisions for the energy efficient use of hot water supply systems. Hydraulic services design to be in accordance with the requirements of the Section J7.

Clause J7.2 of Part J7 states that a hot water supply system for food preparation or sanitary purposes must be designed and installed in accordance with Section 8 of AS/NZS 3500.4.

2.4.7 Part J8 – Access for Maintenance

Part J8 outlines the provisions applicable to providing sufficient access for maintenance in order to satisfy the performance requirement JP2 as outlined in Section 2.1 of this report. Clause J8.2 of Part J8 states that access for maintenance must be provided to plant, equipment and components that require maintenance in accordance with Part I2.

Clause J8.3 of Part J8 requires facilities for energy monitoring for a building or sole occupancy unit with a floor area of more than 500 m^2 must have the facility to record the consumption of gas and electricity. A building with a floor area of more than 2500 m^2 must have the facility to record individually the energy consumption of following:

- Air conditioning plant including, where appropriate, heating plant, cooling plant and air handling fans and
- Artificial lighting; and
- Appliance power; and
- Central hot water supply; and
- Internal transport devices including lifts, escalators and travelators where there is more than one serving the building; and
- Other ancillary plant.

3 APPENDICES

3.1 GLAZING CALCULATOR OUTCOME –

Class – 6 Building (GYM)

BCA VOLUME ONE GLAZING CALCULATOR (first issued with BCA 2010) HELP

Building name/description: 24-26 Railway Pde Westmead (GYM) | Application: shop display | Climate zone: 6

Storey: Lower Ground

Facade areas

	N	NE	E	SE	S	SW	W	NW	internal
Option A			51.2m²		196m²				
Option B									n/a

Glazing area (A) ..... 21.1m² 30.6m²

Number of rows preferred in table below: 3 (as currently displayed)

GLAZING ELEMENTS, ORIENTATION SECTOR, SIZE and PERFORMANCE CHARACTERISTICS								SHADING		CALCULATED OUTCOMES OK (if inputs are valid)					
Glazing element		Facing sector		Size			Performance			Shading		Multipliers		Size	Outcomes
ID	Description (optional)	Option A facades	Option B facades	Height (m)	Width (m)	Area (m²)	Total U-Value (AFRC)	SHGC (AFRC)	P (m)	H (m)	P/H	G (m)	Heating (S_H)	Cooling (S_C)	Area used (m²)	Element share of % of allowance used
1	Gym Entrance	E		2.50	5.00		5.2	0.47				0.00	1.00	1.00	12.50	59% of 100%
2	Gym	E		2.50	3.45		5.2	0.47				0.00	1.00	1.00	8.63	41% of 100%
3	Gym	S				30.60	8.0	1.00				0.00	1.00	1.00	30.60	100% of 51%

IMPORTANT NOTICE AND DISCLAIMER IN RESPECT OF THE GLAZING CALCULATOR

The Glazing Calculator has been developed by the ABCB to assist in developing a better understanding of glazing energy efficiency parameters. While the ABCB believes that the Glazing Calculator, if used correctly, will produce accurate results, it is provided "as is" and without any representation or warranty of any kind, including that it is fit for any purpose or of merchantable quality, or functions as intended or at all. Your use of the Glazing Calculator is entirely at your own risk and the ABCB accepts no liability of any kind.

if inputs are valid

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Class – 6 Building (Lower Ground – Retail)

BCA VOLUME ONE GLAZING CALCULATOR (first issued with BCA 2010) HELP

Building name/description: 24-26 Railway Pde Westmead (Tenancy) | Application: shop display | Climate zone: 6

Storey: Lower Ground

Facade areas

	N	NE	E	SE	S	SW	W	NW	internal
Option A			9.54m²						
Option B									n/a

Glazing area (A) 9.18m²

Number of rows preferred in table below: 1 (as currently displayed)

GLAZING ELEMENTS, ORIENTATION SECTOR, SIZE and PERFORMANCE CHARACTERISTICS								SHADING		CALCULATED OUTCOMES OK (if inputs are valid)					
Glazing element		Facing sector		Size			Performance			Shading		Multipliers		Size	Outcomes
ID	Description (optional)	Option A facades	Option B facades	Height (m)	Width (m)	Area (m²)	Total U-Value (AFRC)	SHGC (AFRC)	P (m)	H (m)	P/H	G (m)	Heating (S_H)	Cooling (S_C)	Area used (m²)	Element share of % of allowance used
1	Tenancy	E		2.55	3.60		2.8	0.18				0.00	1.00	1.00	9.18	100% of 100%

IMPORTANT NOTICE AND DISCLAIMER IN RESPECT OF THE GLAZING CALCULATOR

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Class – 6 Building (Upper Ground – Retail/Supermarket)

BCA VOLUME ONE GLAZING CALCULATOR (first issued with BCA 2010) HELP

Building name/description: 24-26 Railway Pde Westmead (Supermarket) | Application: shop display | Climate zone: 6

Storey: Upper Ground

Facade areas

	N	NE	E	SE	S	SW	W	NW	internal
Option A			203.8m²		122.8m²		176.4m²		
Option B									n/a
Glazing area (A)			*119m²*		*85.6m²*		*124m²*		

Number of rows preferred in table below: 11 *(as currently displayed)*

GLAZING ELEMENTS, ORIENTATION SECTOR, SIZE and PERFORMANCE CHARACTERISTICS									SHADING		CALCULATED OUTCOMES OK (if inputs are valid)					
Glazing element		Facing sector		Size			Performance		P&H or device		Shading	Multipliers			Size	Outcomes
ID	Description (optional)	Option A facades	Option B facades	Height (m)	Width (m)	Area (m²)	Total U-Value (AFRC)	SHGC (AFRC)	P (m)	H (m)	P/H	G (m)	Heating (S_H)	Cooling (S_C)	Area used (m²)	Element share of % of allowance used
1	Supermaket Trading Floo	E		3.10	17.00		3.2	0.35				0.00	1.00	1.00	52.70	44% of 100%
2	Supermaket Trading Floo	E		3.10	3.25		3.2	0.35				0.00	1.00	1.00	10.08	8% of 100%
3	Tenancy 1	E		3.00	9.00		3.2	0.35				0.00	1.00	1.00	27.00	23% of 100%
4	Tenancy 2	E		3.00	9.75		3.2	0.35				0.00	1.00	1.00	29.25	25% of 100%
5	Supermaket Trading Floo	S		3.10	24.00		3.2	0.35				0.00	1.00	1.00	74.40	87% of 98%
6	Supermaket Trading Floo	S		3.10	2.80		3.2	0.35				0.00	1.00	1.00	8.68	10% of 98%
7	Supermaket Trading Floo	S		3.10	0.80		3.2	0.35				0.00	1.00	1.00	2.48	3% of 98%
8	Superkarket Entry	W		3.00	9.50		2.9	0.35				0.00	1.00	1.00	28.50	23% of 99%
9	Tenancy 3	W		3.00	5.00		2.9	0.35				0.00	1.00	1.00	15.00	12% of 99%
10	Supermarket Exit, Café a	W		3.00	14.60		2.9	0.35				0.00	1.00	1.00	43.80	35% of 99%
11	Tenancy 3	W		3.00	12.10		2.9	0.35				0.00	1.00	1.00	36.30	29% of 99%

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Class – 5 (Level 1 – F&B)

NCC VOLUME ONE GLAZING CALCULATOR (first issued with NCC 2014) HELP

Building name/description: 24-26 Railway Pde Westmead (F&B) | Application: shop display | Climate zone: 6

Storey: Level 1

Facade areas

	N	NE	E	SE	S	SW	W	NW	internal
Option A			78.88m²				108.1m²		
Option B									n/a
Glazing area (A)			*63.8m²*				*89m²*		

Number of rows preferred in table below: 4 *(as currently displayed)*

GLAZING ELEMENTS, ORIENTATION SECTOR, SIZE and PERFORMANCE CHARACTERISTICS									SHADING		CALCULATED OUTCOMES OK (if inputs are valid)					
Glazing element		Facing sector		Size			Performance		P&H or device		Shading	Multipliers			Size	Outcomes
ID	Description (optional)	Option A facades	Option B facades	Height (m)	Width (m)	Area (m²)	Total System U-Value (AFRC)	Total System SHGC (AFRC)	P (m)	H (m)	P/H	G (m)	Heating (S_H)	Cooling (S_C)	Area used (m²)	Element share of % of allowance used
1	F&B	E		2.75	23.20		3.0	0.22				0.00	1.00	1.00	63.80	100% of 98%
2	F&B	W		2.80	31.80		2.5	0.30				0.00	1.00	1.00	89.04	100% of 100%
3																
4																

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Class – 5 (Level 2 – Medical)

BCA VOLUME ONE GLAZING CALCULATOR (first issued with BCA 2010) HELP

Building name/description: 24-26 Railway Pde Westmead (Medical) | Application: other | Climate zone: 6

Storey: Level 2

Facade areas

	N	NE	E	SE	S	SW	W	NW	internal
Option A	161.4m²		291.6m²		161.4m²		249.5m²		
Option B									n/a
Glazing area (A)	41.9m²		166m²		129m²		157m²		

Number of rows preferred in table below: 8 (as currently displayed)

GLAZING ELEMENTS, ORIENTATION SECTOR, SIZE and PERFORMANCE CHARACTERISTICS										SHADING		CALCULATED OUTCOMES OK (if inputs are valid)					
Glazing element		Facing sector		Size			Performance			P&H or device		Shading	Multipliers			Size	Outcomes
ID	Description (optional)	Option A facades	Option B facades	Height (m)	Width (m)	Area (m²)	Total U-Value (AFRC)	SHGC (AFRC)		P (m)	H (m)	P/H	G (m)	Heating (S_H)	Cooling (S_C)	Area used (m²)	Element share of % of allowance used
1	Medical/Commerical	N		3.15	7.30		2.1	0.10					0.00	1.00	1.00	23.00	48% of 25%
2	Bridge	N		3.15	6.00		1.4	0.12					0.00	1.00	1.00	18.90	52% of 25%
3	Medical/Commerical	E		3.15	52.80		2.5	0.12					0.00	1.00	1.00	166.32	100% of 85%
4	Medical/Commerical	S		3.15	27.50		3.0	0.63					0.00	1.00	1.00	86.63	67% of 97%
5	Bridge	S		3.15	6.00		3.0	0.63					0.00	1.00	1.00	18.90	15% of 97%
6	Medical/Commerical	S		3.15	7.30		3.0	0.63					0.00	1.00	1.00	23.00	18% of 97%
7	Medical/Commerical	W		3.15	15.20		2.0	0.10					0.00	1.00	1.00	47.88	31% of 99%
8	Medical/Commerical	W		3.15	34.50		2.0	0.10					0.00	1.00	1.00	108.68	69% of 99%

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Class – 6 (Level 1 – Tavern)

BCA VOLUME ONE GLAZING CALCULATOR (first issued with BCA 2010) HELP

Building name/description: 24-26 Railway Pde Westmead (Tavern + Tenancies) | Application: shop display | Climate zone: 6

Storey: Level 1

Facade areas

	N	NE	E	SE	S	SW	W	NW	internal
Option A	26m²		86.7m²		123m²		37.4m²		
Option B									n/a
Glazing area (A)	20.4m²		70.1m²		101m²		30.8m²		

Number of rows preferred in table below: 6 (as currently displayed)

GLAZING ELEMENTS, ORIENTATION SECTOR, SIZE and PERFORMANCE CHARACTERISTICS										SHADING		CALCULATED OUTCOMES OK (if inputs are valid)					
Glazing element		Facing sector		Size			Performance			P&H or device		Shading	Multipliers			Size	Outcomes
ID	Description (optional)	Option A facades	Option B facades	Height (m)	Width (m)	Area (m²)	Total U-Value (AFRC)	SHGC (AFRC)		P (m)	H (m)	P/H	G (m)	Heating (S_H)	Cooling (S_C)	Area used (m²)	Element share of % of allowance used
1	Tavern	E		2.75	25.50		3.2	0.2					0.00	1.00	1.00	70.13	100% of 100%
2	Tavern	S		2.75	3.70		2.8	0.5					0.00	1.00	1.00	10.18	8% of 96%
3	Tavern	S		3.00	23.60		2.8	0.5		4.200	2.800	1.50	-0.20	0.62	0.58	70.80	76% of 96%
4	Tavern	W		2.80	11.00		2.7	0.2					0.00	1.00	1.00	30.80	100% of 98%
5	Tenancy 4	S		2.80	7.30		2.8	0.5					0.00	1.00	1.00	20.44	16% of 96%
6	Tenancy 5	N		2.80	7.30		3.8	0.3					0.00	1.00	1.00	20.44	100% of 99%

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Class – 3 (Level 3 - Hotel)

BCA VOLUME ONE GLAZING CALCULATOR (first issued with BCA 2010) HELP

Building name/description: 24-26 Railway Pde Westmead (Hotel) | Application: Class 3 | Climate zone: 6

Storey: Level 3

Facade areas

	N	NE	E	SE	S	SW	W	NW	internal
Option A	64.5m²		130m²		50.5m²		123m²		
Option B									n/a
Glazing area (A)	35m²		75.1m²		20.6m²		74.1m²		

Number of rows preferred in table below: 8 (as currently displayed)

GLAZING ELEMENTS, ORIENTATION SECTOR, SIZE and PERFORMANCE CHARACTERISTICS								SHADING		CALCULATED OUTCOMES OK (if inputs are valid)					
Glazing element		Facing sector		Size			Performance			Shading		Multipliers		Size	Outcomes
ID	Description (optional)	Option A facades	Option B facades	Height (m)	Width (m)	Area (m²)	Total U-Value (AFRC)	SHGC (AFRC)	P (m)	H (m)	P/H	G (m)	Heating (S_H)	Cooling (S_C)	Area used (m²)	Element share of % of allowance used
1	Meeting Room	N		2.50	7.00		4.5	0.38	1.150	2.500	0.46	0.00	0.76	0.59	17.50	60% of 97%
2	Back of House	N		2.50	7.00		4.5	0.38	1.150	0.500	2.30	-2.00	0.00	0.30	17.50	40% of 97%
3	Meeting Rooms	E		2.50	9.40		3.2	0.11				0.00	1.00	1.00	23.50	37% of 99%
4	Reception and Breakfas	E		2.50	20.65		3.2	0.11	5.800	2.600	2.23	0.10	0.01	0.29	51.63	63% of 99%
5	Reception	S		2.50	1.60		3.0	0.63				0.00	1.00	1.00	4.00	19% of 65%
6	Hotel Rooms	S		2.50	6.65		3.0	0.63				0.00	1.00	1.00	16.63	81% of 65%
7	Hotel Rooms	W		2.50	20.37		1.5	0.12				0.00	1.00	1.00	50.93	69% of 99%
8	Back of House	W		2.50	9.25		1.5	0.12				0.00	1.00	1.00	23.13	31% of 99%

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Class – 3 (Level 4-7 - Hotel)

BCA VOLUME ONE GLAZING CALCULATOR (first issued with BCA 2010) HELP

Building name/description: 24-26 Railway Pde Westmead (Hotel) | Application: Class 3 | Climate zone: 6

Storey: Level 4-7

Facade areas

	N	NE	E	SE	S	SW	W	NW	internal
Option A	64.5m²		126m²		41.9m²		126m²		
Option B									n/a
Glazing area (A)	4.5m²		77.4m²		16.3m²		50.9m²		

Number of rows preferred in table below: 5 (as currently displayed)

GLAZING ELEMENTS, ORIENTATION SECTOR, SIZE and PERFORMANCE CHARACTERISTICS								SHADING		CALCULATED OUTCOMES OK (if inputs are valid)					
Glazing element		Facing sector		Size			Performance			Shading		Multipliers		Size	Outcomes
ID	Description (optional)	Option A facades	Option B facades	Height (m)	Width (m)	Area (m²)	Total U-Value (AFRC)	SHGC (AFRC)	P (m)	H (m)	P/H	G (m)	Heating (S_H)	Cooling (S_C)	Area used (m²)	Element share of % of allowance used
1	Hotel Rooms	N		2.50	1.80		8.0	1.00				0.00	1.00	1.00	4.50	100% of 84%
2	Hotel Rooms	E		2.50	10.35		1.2	0.13				0.00	1.00	1.00	25.88	33% of 96%
3	Hotel Rooms	E		2.50	20.60		1.2	0.13				0.00	1.00	1.00	51.50	67% of 96%
4	Hotel Rooms	S		2.50	6.50		3.0	0.45				0.00	1.00	1.00	16.25	100% of 99%
5	Hotel Rooms	W		2.50	20.35		2.2	0.15				0.00	1.00	1.00	50.88	100% of 95%

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Specification j5.2 – Ductwork insulation and sealing

3.1.1 Ductwork Sealing

Heating or cooling ductwork and fittings must be sealed against air loss by:

- Closing all openings in the surface, joints and seams of ductwork with adhesives, mastics, sealants or gaskets in accordance with the duct sealing requirements of AS 4254 for the static pressure in the system.
- Having a draw band encased with adhesive tape for flexible ductwork at an operating pressure of less than 500 Pa.

These requirements do not apply to ductwork and fittings located within the last conditioned space served.

3.1.2 Ductwork Insulation

Ductwork and fittings for heating or cooling, including evaporative cooling must be thermally insulated with insulation complying with AS/NZS 4859.1 to:

- Achieve the Total R-Value specified in Table 21.

Table 20– Ductwork and Fittings – Minimum Total R-Value

Location of Duct Work and Fittings	Minimum *Total R-Value* for Ductwork and fittings in each *climate* zone		
	1, 2, 3 and 5	4, 6 and 7	8
Within a Conditioned Space	1.2	1.2	1.6
Where exposed to direct sunlight	3.0	3.0	3.4
All Other Locations	2.0	2.0	2.4

- For flexible ductwork of no more than 3 m in length to an outlet or from an inlet, achieve a minimum material R-value of 1.0;
- Insulation on ductwork conveying cold air must be protected by a vapour barrier on the outside of the insulation and where the vapour barrier in a membrane, overlapping adjoining sheets of the membrane by 50 mm and bonding or taping the sheets together;
- Ductwork insulation must be protected against the effects of weather and sunlight and abut adjoining insulation to form a continuous barrier and be installed so that it maintains its position and thickness, other than at flanges and supports;
- The required R-Value of the insulation as per Table 21 above do not apply to heating and cooling ductwork and fittings located within the only or last room that is served by the system, air registers, diffusers, outlets, grilles and flexible fan connections;
- The required R-value of the insulation as per Table 21 above do not apply to ductwork outside air and exhaust air associated with a heating or cooling system, floor of an in-situ air handling unit and package air conditioning equipment complying with Minimum Energy Performance Standard (MEPS).

3.2 SPECIFICATION J6 – LIGHTING AND POWER CONTROL DEVICES

3.2.1 Lighting Timers

A lighting timer must –

- Be located within 2 m of every entry door to the space; and
- Have an indicator light that is illuminated when the artificial lighting is off; and
- Not control more than an area of 100 m^2 with a single push button timer and 95% of the light in spaces of area more than 25 m^2.
- Be capable of maintaining the artificial lighting for not less than 5 minute and not more than 15 minutes unless it is reset and without interruption if the timer is reset.

3.2.2 Time Switch

A time switch must be capable of switching on and off electric power systems;

- At variable pre-programmed times and on variable pre-programmed days.
- A time switch must be capable of being overridden by a manual switch or an occupant sensing device that on sensing a person's presence, overrides by a period of up to 2 hours, after which there is no further presence detected, the time switch must resume control.
- An occupant sensing device that overrides the time switch upon a person's entry and returns control to the time switch upon the person's exiting, such as a security card reader and a manual "OFF" switch.

A time switch for external lighting must be capable of:

- limiting the period the system is switched on to between 30 minutes before sunset and 30 minutes after sunrise is determined or detected including any pre-programmed period between these times; and
- being overridden by a manual switch or a security access system for a period of up to 30 minutes after which the time switch must resume control.

A time switch for boiling water and chilled water storage units must be capable of being overridden by a manual switch or a security access system that senses a person's presence, overrides for a period of up to 2 hours, after which if there is no further presence detected, the time switch must resume control.

3.2.3 Motion Detectors

In a Class 5 and 6 building, a motion detector must;

- Be capable of sensing movement such as by infra-red, ultrasonic or microwave detection or by a combination of these means.
- Be capable of detecting a person before they have entered 1 m into the space; and movement of 500mm within the useable part of the space.
- Not control more than in other than a carpark, an area of 500 m^2 with a single sensor or group of parallel sensors and 75% of the lights in spaces using high intensity discharge lights.
- Be capable of maintaining the artificial lighting when activated for a maximum of 30 minutes unless it is reset and without interruption if the motion detector is reset by movement.
- Not be overridden by a manual switch to permanently leave lights the lights on.

When outside a building, a motion detector must;

- Be capable of sensing movement such as by infra-red, ultrasonic or microwave detection or by a combination of these means.
- Be capable of detecting a person within a distance from the light equal to twice the mounting height or 80% of the ground area covered by the light's beam.
- Not control more than five lights.

- Be operated in series with a photoelectric cell or astronomical time switch so that the light will not operate in daylight hours.
- Be capable of maintaining the lighting for a maximum of 10 minutes unless it is reset.
- Have a manual override which is reset after a maximum period of 4 hours.

3.2.4 Daylight Sensor and Dynamic Lighting Control Device

A daylight sensor and dynamic control device for artificial lighting must for switching ON and OFF

- Be capable of having the switching level set point adjusted between 50 and 100 Lux;
- Have a delay of more than 2 minutes and a differential of more than 100 Lux for a sensor controlling high pressure discharge lighting and 50 Lux for a sensor controlling other than high pressure discharge lighting;
- For dimmed or stepped switching, be capable of reducing the power consumed by the controlled lighting in proportion to the incident daylight on the working plane either continuously down to a power consumption that is less than 50% of full power or in no less than 4 steps down to a power consumption that is less than 50% of full power;
- Where a daylight sensor and dynamic control device has a manual override switch, the manual override switch must not be able to switch the lights permanently on or bypass the lighting controls.

Appendix B – BASIX Report

BASIX® Certificate

Building Sustainability Index www.basix.nsw.gov.au

Multi Dwelling

Certificate number: 867945M_02

This certificate confirms that the proposed development will meet the NSW government's requirements for sustainability, if it is built in accordance with the commitments set out below. Terms used in this certificate, or in the commitments, have the meaning given by the document entitled "BASIX Definitions" dated 06/10/2017 published by the Department. This document is available at www.basix.nsw.gov.au

Secretary
Date of issue: Friday, 08 June 2018
To be valid, this certificate must be lodged within 3 months of the date of issue.

NSW GOVERNMENT Planning & Environment

Project summary	
Project name	Residential at 24-26 Railway Parade _02
Street address	24-26 Railway Parade Westmead 2145
Local Government Area	Parramatta City Council
Plan type and plan number	deposited 952720
Lot no.	1,1&10
Section no.	-
No. of residential flat buildings	1
No. of units in residential flat buildings	33
No. of multi-dwelling houses	0
No. of single dwelling houses	0

Project score		
Water	✔ 42	Target 40
Thermal Comfort	✔ Pass	Target Pass
Energy	✔ 26	Target 25

Certificate Prepared by
Name / Company Name: Energia Design Concepts
ABN (if applicable): 55 490 808 108

Description of project

Project address	
Project name	Residential at 24-26 Railway Parade _02
Street address	24-26 Railway Parade Westmead 2145
Local Government Area	Parramatta City Council
Plan type and plan number	deposited 952720
Lot no.	1,1&10
Section no.	-
Project type	
No. of residential flat buildings	1
No. of units in residential flat buildings	33
No. of multi-dwelling houses	0
No. of single dwelling houses	0
Site details	
Site area (m²)	2512
Roof area (m²)	650
Non-residential floor area (m²)	-
Residential car spaces	39
Non-residential car spaces	-

Common area landscape		
Common area lawn (m²)	80.0	
Common area garden (m²)	0.0	
Area of indigenous or low water use species (m²)	-	
Assessor details		
Assessor number	20594	
Certificate number	DJR73BX9ET	
Climate zone	28	
Project score		
Water	✔ 42	Target 40
Thermal Comfort	✔ Pass	Target Pass
Energy	✔ 26	Target 25

Description of project

The tables below describe the dwellings and common areas within the project

Residential flat buildings - Building1, 33 dwellings, 14 storeys above ground

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
0901	2	72.6	2.3	0.0	0.0
0905	2	73.7	2.3	0.0	0.0
1003	1	47.5	4.7	0.0	0.0
1101	2	72.6	2.3	0.0	0.0
1105	2	73.7	2.3	0.0	0.0
1203	1	47.5	4.7	0.0	0.0
1302	2	72.6	2.3	0.0	0.0
1401	2	72.6	2.3	0.0	0.0
1405	3	138.2	3.6	0.0	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
0902	2	72.6	2.3	0.0	0.0
0906	1	47.5	4.7	0.0	0.0
1004	2	73.7	2.3	0.0	0.0
1102	2	72.6	2.3	0.0	0.0
1106	1	47.5	2.3	0.0	0.0
1204	2	73.7	2.3	0.0	0.0
1303	1	47.5	4.7	0.0	0.0
1402	2	72.6	2.3	0.0	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
0903	1	47.5	4.7	0.0	0.0
1001	2	72.6	2.3	0.0	0.0
1005	2	73.7	2.3	0.0	0.0
1103	1	47.5	4.7	0.0	0.0
1201	2	72.6	2.3	0.0	0.0
1205	3	138.2	3.6	0.0	0.0
1304	2	73.7	2.3	0.0	0.0
1403	1	47.5	4.7	0.0	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
0904	2	73.7	2.3	0.0	0.0
1002	2	72.6	2.3	0.0	0.0
1006	1	47.5	2.3	0.0	0.0
1104	2	73.7	2.3	0.0	0.0
1202	2	72.6	2.3	0.0	0.0
1301	2	72.6	2.3	0.0	0.0
1305	3	138.2	3.6	0.0	0.0
1404	2	73.7	2.3	0.0	0.0

Description of project

The tables below describe the dwellings and common areas within the project

Common areas of unit building - Building1

Common area	Floor area (m²)
B4	2000.0
Garbage room (No. 1)	37.0
Lobby-L10	78.0
Lobby-L13	78.0

Common area	Floor area (m²)
Lift car (No.1)	-
Staircase	17.0
Lobby-L11	78.0
Lobby-L14	78.0

Common area	Floor area (m²)
Lift car (No.2)	-
Lobby-L9	78.0
Lobby-L12	78.0

Schedule of BASIX commitments

1. Commitments for Residential flat buildings - Building1
    (a) Dwellings
        (i) Water
        (ii) Energy
        (iii) Thermal Comfort
    (b) Common areas and central systems/facilities
        (i) Water
        (ii) Energy

2. Commitments for multi-dwelling houses

3. Commitments for single dwelling houses

4. Commitments for common areas and central systems/facilities for the development (non-building specific)
        (i) Water
        (ii) Energy

Schedule of BASIX commitments

The commitments set out below regulate how the proposed development is to be carried out. It is a condition of any development consent granted, or complying development certificate issued, for the proposed development, that BASIX commitments be complied with.

1. Commitments for Residential flat buildings - Building1

(a) Dwellings

(i) Water	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must comply with the commitments listed below in carrying out the development of a dwelling listed in a table below.			
(b) The applicant must plant indigenous or low water use species of vegetation throughout the area of land specified for the dwelling in the "Indigenous species" column of the table below, as private landscaping for that dwelling. (This area of indigenous vegetation is to be contained within the "Area of garden and lawn" for the dwelling specified in the "Description of Project" table).	✔	✔	
(c) If a rating is specified in the table below for a fixture or appliance to be installed in the dwelling, the applicant must ensure that each such fixture and appliance meets the rating specified for it.		✔	✔
(d) The applicant must install an on demand hot water recirculation system which regulates all hot water use throughout the dwelling, where indicated for a dwelling in the "HW recirculation or diversion" column of the table below.		✔	✔
(e) The applicant must install: (aa) a hot water diversion system to all showers, kitchen sinks and all basins in the dwelling, where indicated for a dwelling in the "HW recirculation or diversion" column of the table below; and (bb) a separate diversion tank (or tanks) connected to the hot water diversion systems of at least 100 litres. The applicant must connect the hot water diversion tank to all toilets in the dwelling.		✔ ✔	✔ ✔
(e) The applicant must not install a private swimming pool or spa for the dwelling, with a volume exceeding that specified for it in the table below.	✔	✔	
(f) If specified in the table, that pool or spa (or both) must have a pool cover or shading (or both).		✔	
(g) The pool or spa must be located as specified in the table.	✔	✔	
(h) The applicant must install, for the dwelling, each alternative water supply system, with the specified size, listed for that dwelling in the table below. Each system must be configured to collect run-off from the areas specified (excluding any area which supplies any other alternative water supply system), and to divert overflow as specified. Each system must be connected as specified.	✔	✔	✔

	Fixtures					Appliances		Individual pool				Individual spa		
Dwelling no.	All shower-heads	All toilet flushing systems	All kitchen taps	All bathroom taps	HW recirculation or diversion	All clothes washers	All dish-washers	Volume (max volume)	Pool cover	Pool location	Pool shaded	Volume (max volume)	Spa cover	Spa shaded
All dwellings	4 star (> 4.5 but <= 6 L/min)	4 star	4 star	4 star	-	-	4 star	-	-	-	-	-	-	-

	Alternative water source							
Dwelling no.	Alternative water supply systems	Size	Configuration	Landscape connection	Toilet connection (s)	Laundry connection	Pool top-up	Spa top-up
None	-	-	-	-	-	-	-	-

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must comply with the commitments listed below in carrying out the development of a dwelling listed in a table below.			
(b) The applicant must install each hot water system specified for the dwelling in the table below, so that the dwelling's hot water is supplied by that system. If the table specifies a central hot water system for the dwelling, then the applicant must connect that central system to the dwelling, so that the dwelling's hot water is supplied by that central system.	✔	✔	✔
(c) The applicant must install, in each bathroom, kitchen and laundry of the dwelling, the ventilation system specified for that room in the table below. Each such ventilation system must have the operation control specified for it in the table.		✔	✔
(d) The applicant must install the cooling and heating system/s specified for the dwelling under the "Living areas" and "Bedroom areas" headings of the "Cooling" and "Heating" columns in the table below, in/for at least 1 living/bedroom area of the dwelling. If no cooling or heating system is specified in the table for "Living areas" or "Bedroom areas", then no systems may be installed in any such areas. If the term "zoned" is specified beside an air conditioning system, then the system must provide for day/night zoning between living areas and bedrooms.		✔	✔
(e) This commitment applies to each room or area of the dwelling which is referred to in a heading to the "Artificial lighting" column of the table below (but only to the extent specified for that room or area). The applicant must ensure that the "primary type of artificial lighting" for each such room in the dwelling is fluorescent lighting or light emitting diode (LED) lighting. If the term "dedicated" is specified for a particular room or area, then the light fittings in that room or area must only be capable of being used for fluorescent lighting or light emitting diode (LED) lighting.		✔	✔

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(f) This commitment applies to each room or area of the dwelling which is referred to in a heading to the "Natural lighting" column of the table below (but only to the extent specified for that room or area). The applicant must ensure that each such room or area is fitted with a window and/or skylight.	✔	✔	✔
(g) This commitment applies if the applicant installs a water heating system for the dwelling's pool or spa. The applicant must:			
(aa) install the system specified for the pool in the "Individual Pool" column of the table below (or alternatively must not install any system for the pool). If specified, the applicant must install a timer, to control the pool's pump; and		✔	
(bb) install the system specified for the spa in the "Individual Spa" column of the table below (or alternatively must not install any system for the spa). If specified, the applicant must install a timer to control the spa's pump.		✔	
(h) The applicant must install in the dwelling:			
(aa) the kitchen cook-top and oven specified for that dwelling in the "Appliances & other efficiency measures" column of the table below;		✔	
(bb) each appliance for which a rating is specified for that dwelling in the "Appliances & other efficiency measures" column of the table, and ensure that the appliance has that minimum rating; and		✔	✔
(cc) any clothes drying line specified for the dwelling in the "Appliances & other efficiency measures" column of the table.		✔	
(i) If specified in the table, the applicant must carry out the development so that each refrigerator space in the dwelling is "well ventilated".		✔	

	Hot water	Bathroom ventilation system		Kitchen ventilation system		Laundry ventilation system	
Dwelling no.	Hot water system	Each bathroom	Operation control	Each kitchen	Operation control	Each laundry	Operation control
All dwellings	central hot water system 1	individual fan, ducted to façade or roof	manual switch on/off	individual fan, ducted to façade or roof	manual switch on/off	individual fan, ducted to façade or roof	manual switch on/off

	Cooling		Heating		Artificial lighting						Natural lighting	
Dwelling no.	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or dining rooms	Each kitchen	All bathrooms/ toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
1205, 1305, 1405	1-phase airconditioning 4.5 Star	1-phase airconditioning 4.5 Star	1-phase airconditioning 4.5 Star	1-phase airconditioning 4.5 Star	3 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	-
0903, 0906, 1003, 1006, 1103, 1106, 1203, 1303, 1403	1-phase airconditioning 4.5 Star	1-phase airconditioning 4.5 Star	1-phase airconditioning 4.5 Star	1-phase airconditioning 4.5 Star	1 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	-
All other dwellings	1-phase airconditioning 4.5 Star	1-phase airconditioning 4.5 Star	1-phase airconditioning 4.5 Star	1-phase airconditioning 4.5 Star	2 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	-

	Individual pool		Individual spa		Appliances & other efficiency measures							
Dwelling no.	Pool heating system	Timer	Spa heating system	Timer	Kitchen cooktop/oven	Refrigerator	Well ventilated fridge space	Dishwasher	Clothes washer	Clothes dryer	Indoor or sheltered clothes drying line	Private outdoor or unsheltered clothes drying line
All dwellings	-	-	-	-	gas cooktop & electric oven	-	yes	4.5 star	-	4.5 star	-	-

(iii) Thermal Comfort	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must attach the certificate referred to under "Assessor details" on the front page of this BASIX certificate (the "Assessor Certificate") to the development application and construction certificate application for the proposed development (or, if the applicant is applying for a complying development certificate for the proposed development, to that application). The applicant must also attach the Assessor Certificate to the application for a final occupation certificate for the proposed development.			

(iii) Thermal Comfort	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(b) The Assessor Certificate must have been issued by an Accredited Assessor in accordance with the Thermal Comfort Protocol.			
(c) The details of the proposed development on the Assessor Certificate must be consistent with the details shown in this BASIX Certificate, including the details shown in the "Thermal Loads" table below.			
(d) The applicant must show on the plans accompanying the development application for the proposed development, all matters which the Thermal Comfort Protocol requires to be shown on those plans. Those plans must bear a stamp of endorsement from the Accredited Assessor, to certify that this is the case.	✔		
(e) The applicant must show on the plans accompanying the application for a construction certificate (or complying development certificate, if applicable), all thermal performance specifications set out in the Assessor Certificate, and all aspects of the proposed development which were used to calculate those specifications.		✔	
(f) The applicant must construct the development in accordance with all thermal performance specifications set out in the Assessor Certificate, and in accordance with those aspects of the development application or application for a complying development certificate which were used to calculate those specifications.		✔	✔
(g) Where there is an in-slab heating or cooling system, the applicant must: (aa) Install insulation with an R-value of not less than 1.0 around the vertical edges of the perimeter of the slab; or (bb) On a suspended floor, install insulation with an R-value of not less than 1.0 underneath the slab and around the vertical edges of the perimeter of the slab.	✔	✔	✔
(h) The applicant must construct the floors and walls of the development in accordance with the specifications listed in the table below.	✔	✔	✔

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
0901	48.3	35.0
0902	50.0	42.6
0903	24.2	43.8
0904	30.8	46.7
0905	30.4	57.6
0906	25.6	53.3
1001	49.7	49.4
1002	53.5	53.6

	Thermal loads	
Dwelling no.	**Area adjusted heating load (in mJ/m²/yr)**	**Area adjusted cooling load (in mJ/m²/yr)**
1003	26.2	54.4
1004	29.0	45.5
1005	31.6	56.6
1006	25.9	53.1
1101	49.8	49.4
1102	53.6	53.5
1103	26.3	54.2
1104	31.8	60.3
1105	31.7	56.4
1106	26.0	52.5
1201	49.9	49.4
1202	53.7	53.2
1203	26.3	53.5
1204	31.9	60.3
1205	26.7	63.2
1301	46.7	35.9
1302	54.0	52.9
1303	26.5	53.2
1304	32.1	59.8
1305	27.2	52.3
1401	58.3	40.8
1402	57.2	45.0
1403	26.0	42.4
1404	32.8	50.3
All other dwellings	34.7	62.7

(b) Common areas and central systems/facilities

(i) Water	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) If, in carrying out the development, the applicant installs a showerhead, toilet, tap or clothes washer into a common area, then that item must meet the specifications listed for it in the table.		✔	✔
(b) The applicant must install (or ensure that the development is serviced by) the alternative water supply system(s) specified in the "Central systems" column of the table below. In each case, the system must be sized, be configured, and be connected, as specified in the table.	✔	✔	✔
(c) A swimming pool or spa listed in the table must not have a volume (in kLs) greater than that specified for the pool or spa in the table.	✔	✔	
(d) A pool or spa listed in the table must have a cover or shading if specified for the pool or spa in the table.		✔	
(e) The applicant must install each fire sprinkler system listed in the table so that the system is configured as specified in the table.		✔	✔
(f) The applicant must ensure that the central cooling system for a cooling tower is configured as specified in the table.		✔	✔

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	no common facility	no common facility	4 star	no common laundry facility

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) If, in carrying out the development, the applicant installs a ventilation system to service a common area specified in the table below, then that ventilation system must be of the type specified for that common area, and must meet the efficiency measure specified.		✔	✔
(b) In carrying out the development, the applicant must install, as the "primary type of artificial lighting" for each common area specified in the table below, the lighting specified for that common area. This lighting must meet the efficiency measure specified. The applicant must also install a centralised lighting control system or Building Management System (BMS) for the common area, where specified.		✔	✔
(c) The applicant must install the systems and fixtures specified in the "Central energy systems" column of the table below. In each case, the system or fixture must be of the type, and meet the specifications, listed for it in the table.	✔	✔	✔

	Common area ventilation system		Common area lighting		
Common area	**Ventilation system type**	**Ventilation efficiency measure**	**Primary type of artificial lighting**	**Lighting efficiency measure**	**Lighting control system/BMS**
B4	ventilation exhaust only	carbon monoxide monitor + 2-speed fan	compact fluorescent	motion sensors	No
Lift car (No.1)	-	-	compact fluorescent	connected to lift call button	No
Lift car (No.2)	-	-	compact fluorescent	connected to lift call button	No
Garbage room (No. 1)	ventilation exhaust only	-	compact fluorescent	motion sensors	No
Staircase	ventilation exhaust only	time clock or BMS controlled	compact fluorescent	daylight sensor and motion sensor	No
Lobby-L9	ventilation exhaust only	time clock or BMS controlled	light-emitting diode	daylight sensor and motion sensor	No
Lobby-L10	ventilation exhaust only	time clock or BMS controlled	light-emitting diode	daylight sensor and motion sensor	No
Lobby-L11	ventilation exhaust only	time clock or BMS controlled	light-emitting diode	daylight sensor and motion sensor	No
Lobby-L12	ventilation exhaust only	time clock or BMS controlled	light-emitting diode	daylight sensor and motion sensor	No
Lobby-L13	ventilation exhaust only	time clock or BMS controlled	light-emitting diode	daylight sensor and motion sensor	No
Lobby-L14	ventilation exhaust only	time clock or BMS controlled	light-emitting diode	daylight sensor and motion sensor	No

Central energy systems	Type	Specification
Central hot water system (No. 1)	solar - gas boosted	Solar collector area (minimum, in square metres): 100.0 Piping insulation (ringmain & supply risers): (a) Piping external to building: R1.0 (~38 mm); (b) Piping internal to building: R1.0 (~38 mm)
Lift (No. 1)	gearless traction with V V V F motor	Number of levels (including basement): 19
Lift (No. 2)	gearless traction with V V V F motor	Number of levels (including basement): 19

4. Commitments for common areas and central systems/facilities for the development (non-building specific)

(b) Common areas and central systems/facilities

(i) Water	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) If, in carrying out the development, the applicant installs a showerhead, toilet, tap or clothes washer into a common area, then that item must meet the specifications listed for it in the table.		✔	✔
(b) The applicant must install (or ensure that the development is serviced by) the alternative water supply system(s) specified in the "Central systems" column of the table below. In each case, the system must be sized, be configured, and be connected, as specified in the table.	✔	✔	✔
(c) A swimming pool or spa listed in the table must not have a volume (in kLs) greater than that specified for the pool or spa in the table.	✔	✔	
(d) A pool or spa listed in the table must have a cover or shading if specified for the pool or spa in the table.		✔	
(e) The applicant must install each fire sprinkler system listed in the table so that the system is configured as specified in the table.		✔	✔
(f) The applicant must ensure that the central cooling system for a cooling tower is configured as specified in the table.		✔	✔

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	no common facility	no common facility	4 star	no common laundry facility

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) If, in carrying out the development, the applicant installs a ventilation system to service a common area specified in the table below, then that ventilation system must be of the type specified for that common area, and must meet the efficiency measure specified.		✔	✔
(b) In carrying out the development, the applicant must install, as the "primary type of artificial lighting" for each common area specified in the table below, the lighting specified for that common area. This lighting must meet the efficiency measure specified. The applicant must also install a centralised lighting control system or Building Management System (BMS) for the common area, where specified.		✔	✔
(c) The applicant must install the systems and fixtures specified in the "Central energy systems" column of the table below. In each case, the system or fixture must be of the type, and meet the specifications, listed for it in the table.	✔	✔	✔

Notes

1. In these commitments, "applicant" means the person carrying out the development.
2. The applicant must identify each dwelling, building and common area listed in this certificate, on the plans accompanying any development application, and on the plans and specifications accompanying the application for a construction certificate / complying development certificate, for the proposed development, using the same identifying letter or reference as is given to that dwelling, building or common area in this certificate.
3. This note applies if the proposed development involves the erection of a building for both residential and non-residential purposes (or the change of use of a building for both residential and non-residential purposes). Commitments in this certificate which are specified to apply to a "common area" of a building or the development, apply only to that part of the building or development to be used for residential purposes.
4. If this certificate lists a central system as a commitment for a dwelling or building, and that system will also service any other dwelling or building within the development, then that system need only be installed once (even if it is separately listed as a commitment for that other dwelling or building).
5. If a star or other rating is specified in a commitment, this is a minimum rating.
6. All alternative water systems to be installed under these commitments (if any), must be installed in accordance with the requirements of all applicable regulatory authorities. NOTE: NSW Health does not recommend that stormwater, recycled water or private dam water be used to irrigate edible plants which are consumed raw, or that rainwater be used for human consumption in areas with potable water supply.

Legend

1. Commitments identified with a "✔" in the "Show on DA plans" column must be shown on the plans accompanying the development application for the proposed development (if a development application is to be lodged for the proposed development).
2. Commitments identified with a "✔" in the "Show on CC/CDC plans and specs" column must be shown in the plans and specifications accompanying the application for a construction certificate / complying development certificate for the proposed development.
3. Commitments identified with a "✔" in the "Certifier check" column must be certified by a certifying authority as having been fulfilled. (Note: a certifying authority must not issue an occupation certificate (either interim or final) for a building listed in this certificate, or for any part of such a building, unless it is satisfied that each of the commitments whose fulfilment it is required to monitor in relation to the building or part, has been fulfilled).

Nationwide House Energy Rating Scheme* — Class 2 summary

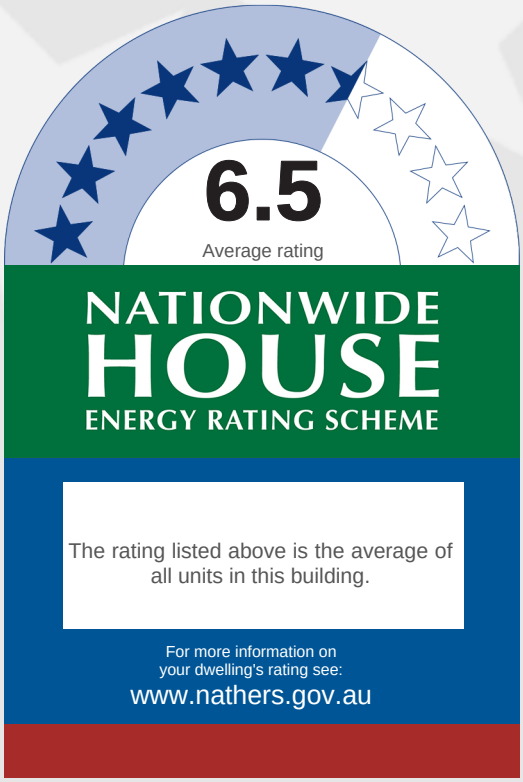
Certificate Number: **DJR73BX9ET** Date of Certificate: **4 Dec 2017** ★ Average star rating: **6.5**

Assessor details

Accreditation number:	**20594**
Name:	**Suruchi Pathak**
Organisation:	
Email:	**suruchipathak@gmail.com**
Phone:	**0434220286**
Declaration of interest:	**No potential conflicts of interest to declare**
Software:	**FirstRate5 v5.2.7**
AAO:	**ABSA**

Dwelling details

Address:	**24-26 Railway Parade**
Suburb:	**Westmead**
State:	**NSW**
Postcode:	**2145**



Summary of all dwellings

Certification details

		Annual thermal performance loads (MJ/m2)			
Certificate number	Unit number	Heating load	Cooling load	Total load	Star rating
HKMI7FBQPL	0901	48.3	35	83.3	6.2
HYSZNH6SGX	0902	50	42.6	92.6	5.8
02KOMMJJ7B	0903	24.2	43.8	68	6.9
NILMPV74FF	0904	30.8	46.7	77.5	6.4
4TTQ4T2W4Z	0905	28.4	39.8	68.2	6.9
KCMA3GI3U3	0906	26	36.6	62.6	7.2
UWPI248T1G	1001	45.5	36.7	82.2	6.2
HWNBPHGJ8O	1002	47.2	42.2	89.4	5.9
AORGHH21D3	1003	24.3	42.9	67.2	6.9
A2OCPOH9YH	1004	29	45.5	74.5	6.6
VVBZW7IN2U	1005	28	40.4	68.4	6.9
YYVMG8OYFE	1006	26.3	36.4	62.7	7.2
VB973N8LMM	1101	46.4	36.1	82.5	6.2
HVFXPUZMIN	1102	48.2	42.6	90.8	5.8
MWQMVFI999	1103	22.4	41.6	64	7.1
1YDRZ68L4W	1104	29.1	45.5	74.6	6.6

continued

* Nationwide House Energy Rating Scheme (NatHERS) is an initiative of the Australian, state and territory governments. For more details see www.nathers.gov.au

Nationwide House Energy Rating Scheme* — Class 2 summary

Certificate Number: **DJR73BX9ET** Date of Certificate: **4 Dec 2017** ★ Average star rating: **6.5**

Summary of all dwellings continued

Certification details continued

		Annual thermal performance loads (MJ/m2)			
Certificate number	**Unit number**	**Heating load**	**Cooling load**	**Total load**	**Star rating**
LZNJSSGDP5	1105	28	40.1	68.1	6.9
A1WM3QMZ6U	1106	26.4	36.1	62.5	7.2
33U84OIKWB	1201	46.5	36.2	82.7	6.2
9HU12ON1UJ	1202	48.3	42.5	90.8	5.8
8P8SFMHC6R	1203	24.5	42.7	67.2	6.9
9T4TN2BC5H	1204	29.1	45.4	74.5	6.6
VXE5GN4B3S	1205	20.6	35.7	56.3	7.4
GGOECQMBNA	1301	46.7	35.9	82.6	6.2
NK5MUAYI7Y	1302	48.4	42.2	90.6	5.8
G8EU1M0Z1T	1303	24.7	42.6	67.3	6.9
HD259JXDVL	1305	20.9	35.8	56.7	7.4
817LG390T2	1401	59.1	34.5	93.6	5.7
IAV536T26H	1402	59.6	40.2	99.8	5.4
YMN3W7VDO1	1403	33.3	40.7	74	6.6
09CEBEVIK9	1304	31.8	35.8	67.6	6.9
LBD288B07H	1404	35.3	42.2	77.5	6.4
04GOWVOEYJ	1405	31	35.5	66.5	6.9
			This building achieves an average star rating of:		**6.5**

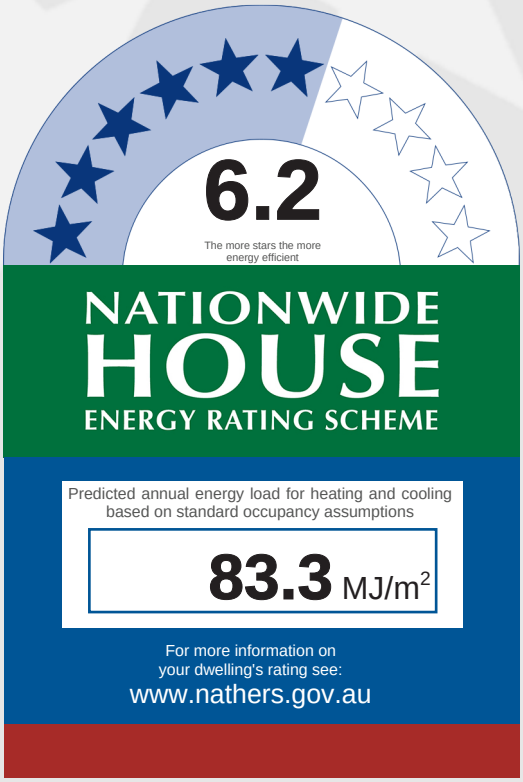
* Nationwide House Energy Rating Scheme (NatHERS) is an initiative of the Australian, state and territory governments. For more details see www.nathers.gov.au

Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **HKMI7FBQPL** Date of Certificate: **29 Nov 2017** ★ Star rating: **6.2**

Assessor details

Accreditation number:	**20594**
Name:	**Suruchi Pathak**
Organisation:	**Suruchi Pathak**
Email:	**suruchipathak@gmail.com**
Phone:	**0434220286**
Declaration of interest:	**No potential conflicts of interest to declare**
Software:	**FirstRate5: 5.2.7 (3.13)**
AAO:	**ABSA**



Overview

Dwelling details

Address:	**0901, 24-26 Railway Parade**		
Suburb:	**Westmead**		
State:	**NSW**	Postcode:	**2145**
Type:	**New Home**	NCC Class:	**Class 2**
Lot/DP number:	**1/952720**	NatHERS climate zone:	**28**
Exposure:	**exposed**		

Key construction and insulation materials

(see following pages for details)

Construction:	Wall:	**Alucobond Panel,Conc100+PB**
	Roof:	**Neighbour above**
	Floor:	**Concrete**
Insulation:	Wall:	**R2.5(Added to all external)**
	Roof:	**NA**
	Floor:	**R2.5(floor with air below)**
Glazing:		**Aluminum**
		Refer detailed report

Ceiling penetrations

(see following pages for details)

Sealed:	**26**
Unsealed:	**0**
TOTAL:**	**26**

Principal downlight type: **LED**

NOTE: This total is the maximum number of ceiling penetrations allowed to a ceiling (under a roof) for this certificate. **If this number is exceded in construction then this certificate IS NOT VALID and a new certificate is required. Loss of ceiling insulation for the penetrations listed has been taken into account with the rating.

Net floor area (m^2)

Conditioned:	**72.6**
Unconditioned:	**2.3**
Garage:	**-**
TOTAL:	**74.9**

Annual thermal performance loads (MJ/m^2)

Heating:	**48.3**
Cooling:	**35**
TOTAL:	**83.3**

Window selection - default windows only

Note on allowable window values: Only a 5% tolerance to the nominated SHGC window values shown on page 2 can be used with this rating.

Note: Only a +/-5% SHGC tolerance is allowed with this rating.

NB: This tolerance ONLY applies to SHGC, the U-value can always be lower but not higher than the values stated on page 2.

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Scan to access this certificate online and confirm this is valid.

https://www.fr5.com.au/QRCodeLanding?PublicId=HKMI7FBQPL

Plan documents

Plan ref/date:	**16-021 DA151-Rev5-3.10.2017**
Prepared by:	**Sissons Architects**

Building Features

Windows type and performance value

Window ID	Window type	U-value	SHGC
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27
ATB-003-04 B	Al Thermally Broken A DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27

Windows schedule

Window ID	Window no.	Height (mm)	Width (mm)	Orientation	Zone name	Outdoor shade
ATB-004-04 B	Opening 1	2660	1200	SSW	Kitchen/Living	No
ATB-003-04 B	Opening 2	2660	1220	SSW	Kitchen/Living	No
ATB-003-04 B	Opening 18	2660	1210	SSW	Kitchen/Living	No
ATB-004-04 B	Opening 16	2660	1355	ESE	Kitchen/Living	No
ATB-004-04 B	Opening 24	2100	1354	ESE	Kitchen/Living	No
ATB-004-04 B	Opening 8	2660	2200	NNE	Kitchen/Living	No
ATB-004-04 B	Opening 5	2660	2960	ESE	Bedroom 2	No
ATB-004-04 B	Opening 19	2660	1560	SSW	Circulation	No
ATB-004-04 B	Opening 3	2660	1075	SSW	Bedroom 1	No
ATB-003-04 B	Opening 20	2660	1075	SSW	Bedroom 1	No

Roof windows and skylight type and performance value

ID	Window type	U-value	SHGC

Roof window and skylight schedule

ID	Roof window/ skylight no.	Area (m^2)	Orientation	Zone name	Outdoor shade	Indoor shade/ diffuser

External wall type

Type	Insulation	Wall wrap
1 : Alcubond	Polystyrene extruded: R2.5 (R2.5)	No
2 : FR5 - Cast Concrete	Polystyrene extruded: R2.5 (R2.5)	No
3 : FR5 - Concrete Block Solid/Core Filled		No

External wall schedule

Wall type	Area (m^2)	Orientation	Zone name	Fixed shade	Eaves
1 : Alcubond	15.9	SSW	Kitchen/Living	No	No
1 : Alcubond	10.6	ESE	Kitchen/Living	No	No

Building Features

2 : FR5 - Cast Concrete	6.4	NNE	Kitchen/Living	Yes	Yes
2 : FR5 - Cast Concrete	3.6	ESE	Kitchen/Living	Yes	Yes
2 : FR5 - Cast Concrete	3.1	WNW	Kitchen/Living	Yes	No
2 : FR5 - Cast Concrete	7.9	ESE	Bedroom 2	Yes	Yes
3 : FR5 - Concrete Block Solid/Core Filled	9.5	NNE	Bedroom 2	No	No
2 : FR5 - Cast Concrete	4.3	SSW	Circulation	Yes	No
3 : FR5 - Concrete Block Solid/Core Filled	4.1	NNE	Circulation	No	No
1 : Alcubond	8.5	SSW	Bedroom 1	No	No
2 : FR5 - Cast Concrete	3.1	ESE	Bedroom 1	Yes	No
3 : FR5 - Concrete Block Solid/Core Filled	9.5	WNW	Bedroom 1	No	No
3 : FR5 - Concrete Block Solid/Core Filled	4.9	WNW	ENS	No	No
3 : FR5 - Concrete Block Solid/Core Filled	5.1	NNE	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	2.3	WNW	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	3.3	NNE	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	4.9	WNW	Bath	No	No

Internal wall type

Type	Area (m^2)	Insulation
1 : FR5 - Internal Plasterboard Stud Wall	72	

Floors

Location	Construction	Area (m^2)	Sub floor ventilation	Added insulation	Covering
Kitchen/Living	SuspSlab : 150mm: 150mm concrete slab	18.8	Enclosed	0.0	floattimber
Kitchen/Living	SuspSlab : 150mm: 150mm concrete slab	9.3	Elevated	2.5	floattimber
Bedroom 2	SuspSlab : 150mm: 150mm concrete slab	10.7	Enclosed	0.0	Carpet
Circulation	SuspSlab : 150mm: 150mm concrete slab	11.4	Enclosed	0.0	floattimber
Bedroom 1	SuspSlab : 150mm: 150mm concrete slab	7.6	Enclosed	0.0	Carpet
Bedroom 1	SuspSlab : 150mm: 150mm concrete slab	3.6	Elevated	2.5	Carpet
ENS	SuspSlab : 150mm: 150mm concrete slab	5.1	Enclosed	0.0	Tiles
Bath	SuspSlab : 150mm: 150mm concrete	6	Enclosed	0.0	Tiles

Building Features

	slab				
L'dry	SuspSlab : 150mm: 150mm concrete slab	2.3	Enclosed	0.0	Tiles

Ceiling type

Location	Material	Added insulation	Roof space above

Ceiling penetrations

Location	Number	Type	Width (mm)	Length (mm)	Seal/ unsealed
Kitchen/Living	12	Downlights	50	50	Sealed
Kitchen/Living	1	Exhaust Fans	180	180	Sealed
Bedroom 2	4	Downlights	50	50	Sealed
Circulation	4	Downlights	50	50	Sealed
Bedroom 1	4	Downlights	50	50	Sealed
Bath	1	Exhaust Fans	180	180	Sealed

Ceiling fans

Location	Number	Diameter (mm)

Roof type

Material	Added insulation	Roof colour
Ceil: Ceiling	0.0	light

Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **HKMI7FBQPL** Date of Certificate: **29 Nov 2017** ★ Star rating: **6.2**

Additional information

Explanatory notes

About this report

Residential energy ratings address the quality of the building fabric i.e. walls, windows, floors and roof/ceilings. Ratings do not cover the energy or water efficiency of appliances including heating and cooling, hot water, dishwashers, ovens, fridges, TVs etc. or solar panel or water tank requirements. The efficiency or specification of these items is generally covered by other regulations, standards or guidelines.

General Information

A NatHERS House Energy Rating is a comprehensive, dynamic computer modelling evaluation of the floorplans, elevations and specifications to predict an energy load of a home. Not all of us use our homes in the same way, so ratings are generated using standard assumptions. This means homes can be compared across the country.

The actual energy consumption of your home may vary significantly from the predicted energy load figures in this report depending on issues such as the size of your household and your personal preferences, e.g. in terms of heating or cooling.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparative purposes between different house designs and for demonstrating that the design meets the required regulatory compliance.

Homes that are energy efficient use less energy, are warmer in winter, cooler in summer and cost less to run. The higher the star rating the more energy efficient.

This NatHERS House Energy Rating report was carefully prepared by your assessor on the basis of comprehensive modelling using standard procedures to rate your home using an underlying engine developed by the Australian Commonwealth Scientific and Industrial Research Organisation (CSIRO).

All information relating to energy loads presented in this report is based on a range of standard assumptions in order to allow for comparisons with reports prepared for other homes and to demonstrate minimum regulatory compliance. The standard assumptions include figures for occupancy, indoor air temperature and are based on a unique climate file for your region.

Accredited Assessors

To ensure you get a high-quality, professional NatHERS House Energy Rating report, you should always use an accredited assessor, 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. Non-accredited assessors do not have this level of quality assurance or any on-going training requirements.

If you have any questions or concerns about this report, please direct them to your assessor in the first instance.

If your assessor is unable to address your questions or concerns, please contact their AAO listed under ‘assessor details’. You can also find a range of information about accredited assessors on the AAO websites.

Disclaimer

The energy values quoted are for comparison purposes only; they are not a prediction of actual energy use. This rating only applies to the floor plan, construction details, orientation and climate as submitted and included in the attached drawing set that bears a stamp with the same number as this certificate. Changes to any of these details could affect the rating.

Contact

For more information on the Nationwide House Energy Rating Scheme (NatHERS), visit www.nathers.gov.au

For more information on energy efficient design and insulation visit www.yourhome.gov.au

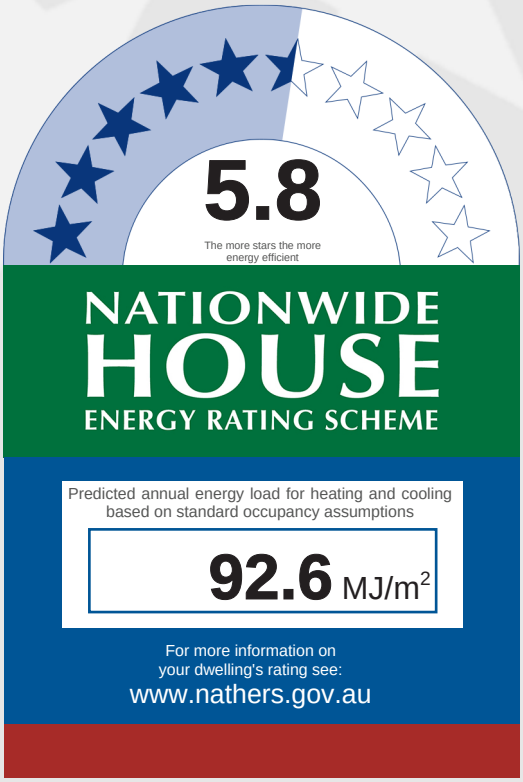
* Nationwide House Energy Rating Scheme (NatHERS) is an initiative of the Australian, state and territory governments. For more details see www.nathers.gov.au

Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **HYSZNH6SGX** Date of Certificate: **29 Nov 2017** ★ Star rating: **5.8**

Assessor details

Accreditation number:	**20594**
Name:	**Suruchi Pathak**
Organisation:	**Suruchi Pathak**
Email:	**suruchipathak@gmail.com**
Phone:	**0434220286**
Declaration of interest:	**No potential conflicts of interest to declare**
Software:	**FirstRate5: 5.2.7 (3.13)**
AAO:	**ABSA**



Overview

Dwelling details

Address:	**0902, 24-26 Railway Parade**		
Suburb:	**Westmead**		
State:	**NSW**	Postcode:	**2145**
Type:	**New Home**	NCC Class:	**Class 2**
Lot/DP number:	**1/952720**	NatHERS climate zone:	**28**
Exposure:	**exposed**		

Key construction and insulation materials

(see following pages for details)

Construction:	Wall:	**Alucobond Panel,Conc100+PB**
	Roof:	**Neighbour above**
	Floor:	**Concrete**
Insulation:	Wall:	**R2.5(Added to all external)**
	Roof:	**NA**
	Floor:	**R2.5(floor with air below)**
Glazing:		**Aluminum**
		Refer detailed report

Ceiling penetrations

(see following pages for details)

Sealed:	**26**
Unsealed:	**0**
TOTAL:**	**26**

Principal downlight type: **LED**

NOTE: This total is the maximum number of ceiling penetrations allowed to a ceiling (under a roof) for this certificate. **If this number is exceded in construction then this certificate IS NOT VALID and a new certificate is required. Loss of ceiling insulation for the penetrations listed has been taken into account with the rating.

Net floor area (m^2)

Conditioned:	**72.6**
Unconditioned:	**2.3**
Garage:	**-**
TOTAL:	**74.9**

Annual thermal performance loads (MJ/m^2)

Heating:	**50**
Cooling:	**42.6**
TOTAL:	**92.6**

Window selection - default windows only

Note on allowable window values: Only a 5% tolerance to the nominated SHGC window values shown on page 2 can be used with this rating.

Note: Only a +/-5% SHGC tolerance is allowed with this rating.

NB: This tolerance ONLY applies to SHGC, the U-value can always be lower but not higher than the values stated on page 2.

If any of the windows selected are outside the 5% tolerance then this certificate is no longer valid and the dwelling will need to be rerated to confirm compliance.

Scan to access this certificate online and confirm this is valid.

https://www.fr5.com.au/QRCodeLanding?PublicId=HYSZNH6SGX

Plan documents

Plan ref/date:	**16-021 DA151-Rev5-3.10.2017**
Prepared by:	**Sissons Architects**

Building Features

Windows type and performance value

Window ID	Window type	U-value	SHGC
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27
ATB-003-04 B	Al Thermally Broken A DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27

Windows schedule

Window ID	Window no.	Height (mm)	Width (mm)	Orientation	Zone name	Outdoor shade
ATB-004-04 B	Opening 8	2660	2200	NNE	Kitchen/Living	No
ATB-004-04 B	Opening 16	2660	1355	WNW	Kitchen/Living	No
ATB-004-04 B	Opening 24	2660	1365	WNW	Kitchen/Living	No
ATB-004-04 B	Opening 1	2660	1067	SSW	Kitchen/Living	No
ATB-003-04 B	Opening 2	2660	1220	SSW	Kitchen/Living	No
ATB-003-04 B	Opening 18	2660	1210	SSW	Kitchen/Living	No
ATB-004-04 B	Opening 5	2660	2954	WNW	Bedroom 2	No
ATB-004-04 B	Opening 19	2660	1541	SSW	Circulation	No
ATB-004-04 B	Opening 3	2660	1075	SSW	Bedroom 1	No
ATB-003-04 B	Opening 20	2660	1075	SSW	Bedroom 1	No

Roof windows and skylight type and performance value

ID	Window type	U-value	SHGC

Roof window and skylight schedule

ID	Roof window/ skylight no.	Area (m^2)	Orientation	Zone name	Outdoor shade	Indoor shade/ diffuser

External wall type

Type	Insulation	Wall wrap
1 : FR5 - Cast Concrete	Polystyrene extruded: R2.5 (R2.5)	No
2 : Alcubond	Polystyrene extruded: R2.5 (R2.5)	No
3 : FR5 - Concrete Block Solid/Core Filled		No

External wall schedule

Wall type	Area (m^2)	Orientation	Zone name	Fixed shade	Eaves
1 : FR5 - Cast Concrete	3.1	ESE	Kitchen/Living	Yes	No
1 : FR5 - Cast Concrete	3.6	WNW	Kitchen/Living	No	Yes

Building Features

1 : FR5 - Cast Concrete	6.4	NNE	Kitchen/Living	Yes	Yes
2 : Alcubond	10.6	WNW	Kitchen/Living	No	No
2 : Alcubond	15.9	SSW	Kitchen/Living	No	No
3 : FR5 - Concrete Block Solid/Core Filled	9.5	NNE	Bedroom 2	No	No
1 : FR5 - Cast Concrete	7.9	WNW	Bedroom 2	No	Yes
3 : FR5 - Concrete Block Solid/Core Filled	4.1	NNE	Circulation	No	No
1 : FR5 - Cast Concrete	4.3	SSW	Circulation	Yes	No
3 : FR5 - Concrete Block Solid/Core Filled	9.5	ESE	Bedroom 1	No	No
1 : FR5 - Cast Concrete	3.1	WNW	Bedroom 1	Yes	No
2 : Alcubond	8.5	SSW	Bedroom 1	No	No
3 : FR5 - Concrete Block Solid/Core Filled	4.9	ESE	ENS	No	No
3 : FR5 - Concrete Block Solid/Core Filled	4.9	ESE	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	3.3	NNE	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	2.3	ESE	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	5.1	NNE	Bath	No	No

Internal wall type

Type	Area (m^2)	Insulation
1 : FR5 - Internal Plasterboard Stud Wall	72	

Floors

Location	Construction	Area (m^2)	Sub floor ventilation	Added insulation	Covering
Kitchen/Living	SuspSlab : 150mm: 150mm concrete slab	18.8	Enclosed	0.0	floattimber
Kitchen/Living	SuspSlab : 150mm: 150mm concrete slab	9.3	Elevated	2.5	floattimber
Bedroom 2	SuspSlab : 150mm: 150mm concrete slab	10.7	Enclosed	0.0	Carpet
Circulation	SuspSlab : 150mm: 150mm concrete slab	11.4	Enclosed	0.0	floattimber
Bedroom 1	SuspSlab : 150mm: 150mm concrete slab	7.6	Enclosed	0.0	Carpet
Bedroom 1	SuspSlab : 150mm: 150mm concrete slab	3.6	Elevated	2.5	Carpet
ENS	SuspSlab : 150mm: 150mm concrete slab	5.1	Enclosed	0.0	Tiles
Bath	SuspSlab : 150mm: 150mm concrete	6	Enclosed	0.0	Tiles

Building Features

	slab				
L'dry	SuspSlab : 150mm: 150mm concrete slab	2.3	Enclosed	0.0	Tiles

Ceiling type

Location	Material	Added insulation	Roof space above

Ceiling penetrations

Location	Number	Type	Width (mm)	Length (mm)	Seal/ unsealed
Kitchen/Living	12	Downlights	50	50	Sealed
Kitchen/Living	1	Exhaust Fans	180	180	Sealed
Bedroom 2	4	Downlights	50	50	Sealed
Circulation	4	Downlights	50	50	Sealed
Bedroom 1	4	Downlights	50	50	Sealed
Bath	1	Exhaust Fans	180	180	Sealed

Ceiling fans

Location	Number	Diameter (mm)

Roof type

Material	Added insulation	Roof colour
Ceil: Ceiling	0.0	light

Additional information

Explanatory notes

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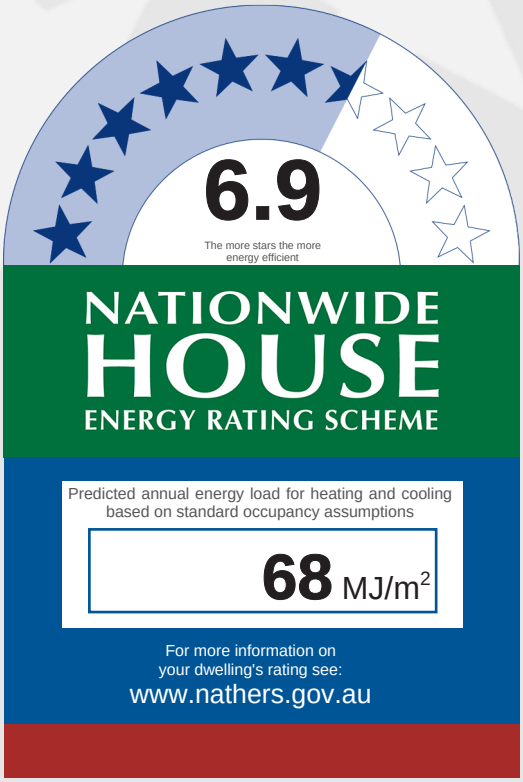
Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **02KOMMJJ7B** Date of Certificate: **29 Nov 2017** ★ Star rating: **6.9**

Assessor details

Accreditation number:	**20594**
Name:	**Suruchi Pathak**
Organisation:	**Suruchi Pathak**
Email:	**suruchipathak@gmail.com**
Phone:	**0434220286**
Declaration of interest:	**No potential conflicts of interest to declare**
Software:	**FirstRate5: 5.2.7 (3.13)**
AAO:	**ABSA**



Overview

Dwelling details

Address:	**0903, 24-26 Railway Parade**		
Suburb:	**Westmead**		
State:	**NSW**	Postcode:	**2145**
Type:	**New Home**	NCC Class:	**Class 2**
Lot/DP number:	**1/952720**	NatHERS climate zone:	**28**
Exposure:	**exposed**		

Key construction and insulation materials

(see following pages for details)

Construction:	Wall:	**Alucobond Panel,Conc100+PB**
	Roof:	**Neighbour above**
	Floor:	**Concrete**
Insulation:	Wall:	**R2.5(Added to all external)**
	Roof:	**NA**
	Floor:	**R2.5(floor with air below)**
Glazing:		**Aluminum**
		Refer detailed report

Ceiling penetrations

(see following pages for details)

Sealed:	**20**
Unsealed:	**0**
TOTAL:**	**20**

Principal downlight type: **LED**

NOTE: This total is the maximum number of ceiling penetrations allowed to a ceiling (under a roof) for this certificate. **If this number is exceded in construction then this certificate IS NOT VALID and a new certificate is required. Loss of ceiling insulation for the penetrations listed has been taken into account with the rating.

Net floor area (m^2)

Conditioned:	**47.5**
Unconditioned:	**4.7**
Garage:	**-**
TOTAL:	**52.2**

Annual thermal performance loads (MJ/m^2)

Heating:	**24.2**
Cooling:	**43.8**
TOTAL:	**68**

Window selection - default windows only

Note on allowable window values: Only a 5% tolerance to the nominated SHGC window values shown on page 2 can be used with this rating.

Note: Only a +/-5% SHGC tolerance is allowed with this rating.

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Scan to access this certificate online and confirm this is valid.

https://www.fr5.com.au/QRCodeLanding?PublicId=02KOMMJJ7B

Plan documents

Plan ref/date:	**16-021 DA151-Rev5-3.10.2017**
Prepared by:	**Sissons Architects**

Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **02KOMMJJ7B** Date of Certificate: **29 Nov 2017** ★ Star rating: **6.9**

Building Features

Windows type and performance value

Window ID	Window type	U-value	SHGC
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27
ATB-003-04 B	Al Thermally Broken A DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27

Windows schedule

Window ID	Window no.	Height (mm)	Width (mm)	Orientation	Zone name	Outdoor shade
ATB-004-04 B	Opening 49	2660	3000	WNW	Kitchen/Living 8	No
ATB-004-04 B	Opening 41	2660	2220	NNE	Kitchen/Living 8	No
ATB-003-04 B	Opening 28	2660	1415	WNW	Kitchen/Living 8	No
ATB-004-04 B	Opening 52	2660	1385	WNW	Kitchen/Living 8	No
ATB-003-04 B	Opening 29	2660	1080	WNW	Bedroom	No
ATB-004-04 B	Opening 51	2660	1070	WNW	Bedroom	No

Roof windows and skylight type and performance value

ID	Window type	U-value	SHGC

Roof window and skylight schedule

ID	Roof window/ skylight no.	Area (m^2)	Orientation	Zone name	Outdoor shade	Indoor shade/ diffuser

External wall type

Type	Insulation	Wall wrap
1 : FR5 - Cast Concrete	Polystyrene extruded: R2.5 (R2.5)	No
2 : FR5 - Concrete Block Solid/Core Filled		No
3 : Alcubond	Polystyrene extruded: R2.5 (R2.5)	No

External wall schedule

Wall type	Area (m^2)	Orientation	Zone name	Fixed shade	Eaves
1 : FR5 - Cast Concrete	3.2	SSW	Kitchen/Living 8	No	No
2 : FR5 - Concrete Block Solid/Core Filled	12.8	SSW	Kitchen/Living 8	No	No
2 : FR5 - Concrete Block Solid/Core Filled	19.5	ESE	Kitchen/Living 8	No	No
2 : FR5 - Concrete Block Solid/Core Filled	2	NNE	Kitchen/Living 8	No	No
1 : FR5 - Cast Concrete	8.5	WNW	Kitchen/Living 8	Yes	Yes
1 : FR5 - Cast Concrete	6.4	NNE	Kitchen/Living 8	Yes	Yes

Building Features

3 : Alcubond	11	WNW	Kitchen/Living 8	No	No
1 : FR5 - Cast Concrete	6.4	SSW	Bedroom	Yes	No
2 : FR5 - Concrete Block Solid/Core Filled	3.2	NNE	Bedroom	No	No
1 : FR5 - Cast Concrete	6.4	NNE	Bedroom	No	No
3 : Alcubond	8.1	WNW	Bedroom	No	No
2 : FR5 - Concrete Block Solid/Core Filled	8	ESE	Bath	No	No
2 : FR5 - Concrete Block Solid/Core Filled	4.1	NNE	Bath	No	No

Internal wall type

Type	Area (m^2)	Insulation
1 : FR5 - Internal Plasterboard Stud Wall	15.4	

Floors

Location	Construction	Area (m^2)	Sub floor ventilation	Added insulation	Covering
Kitchen/Living 8	SuspSlab : 150mm: 150mm concrete slab	36.5	Enclosed	0.0	floattimber
Bedroom	SuspSlab : 150mm: 150mm concrete slab	11	Enclosed	0.0	Carpet
Bath	SuspSlab : 150mm: 150mm concrete slab	4.7	Enclosed	0.0	Tiles

Ceiling type

Location	Material	Added insulation	Roof space above

Ceiling penetrations

Location	Number	Type	Width (mm)	Length (mm)	Seal/ unsealed
Kitchen/Living 8	1	Exhaust Fans	180	180	Sealed
Kitchen/Living 8	14	Downlights	50	50	Sealed
Bedroom	4	Downlights	50	50	Sealed
Bath	1	Exhaust Fans	180	180	Sealed

Ceiling fans

Location	Number	Diameter (mm)

Roof type

Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **02KOMMJJ7B** Date of Certificate: **29 Nov 2017** ★ Star rating: **6.9**

Building Features

Material	Added insulation	Roof colour
Ceil: Ceiling	0.0	medium

* Nationwide House Energy Rating Scheme (NatHERS) is an initiative of the Australian, state and territory governments. For more details see www.nathers.gov.au

Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **02KOMMJJ7B** Date of Certificate: **29 Nov 2017** ★ Star rating: **6.9**

Additional information

Explanatory notes

About this report

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Contact

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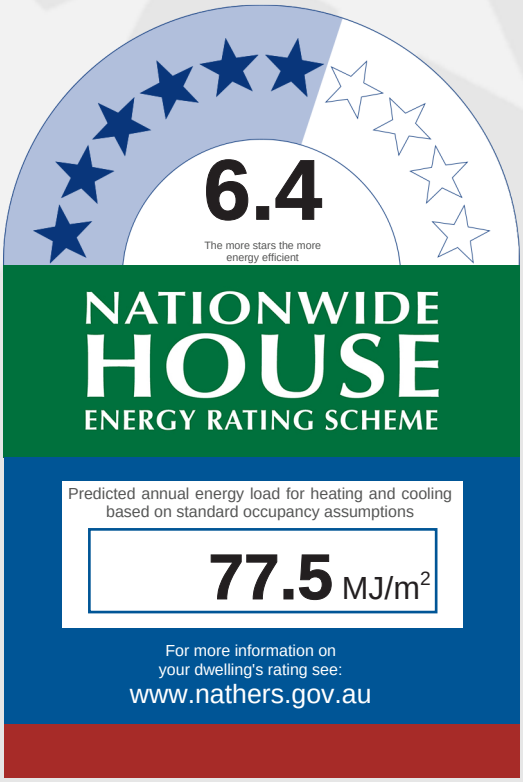
For more information on energy efficient design and insulation visit www.yourhome.gov.au

Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **NILMPV74FF** Date of Certificate: **29 Nov 2017** ★ Star rating: **6.4**

Assessor details

Accreditation number:	**20594**
Name:	**Suruchi Pathak**
Organisation:	**Suruchi Pathak**
Email:	**suruchipathak@gmail.com**
Phone:	**0434220286**
Declaration of interest:	**No potential conflicts of interest to declare**
Software:	**FirstRate5: 5.2.7 (3.13)**
AAO:	**ABSA**



Overview

Dwelling details

Address:	**0904, 24-26 Railway Parade**		
Suburb:	**Westmead**		
State:	**NSW**	Postcode:	**2145**
Type:	**New Home**	NCC Class:	**Class 2**
Lot/DP number:	**1/952720**	NatHERS climate zone:	**28**
Exposure:	**exposed**		

Key construction and insulation materials

(see following pages for details)

Construction:	Wall:	**Alucobond Panel,Conc100+PB**
	Roof:	**Neighbour above**
	Floor:	**Concrete**
Insulation:	Wall:	**R2.5(Added to all external)**
	Roof:	**NA**
	Floor:	**R2.5(floor with air below)**
Glazing:		**Aluminum**
		Refer detailed report

Ceiling penetrations

(see following pages for details)

Sealed:	**26**
Unsealed:	**0**
TOTAL:**	**26**

Principal downlight type: **LED**

NOTE: This total is the maximum number of ceiling penetrations allowed to a ceiling (under a roof) for this certificate. **If this number is exceded in construction then this certificate IS NOT VALID and a new certificate is required. Loss of ceiling insulation for the penetrations listed has been taken into account with the rating.

Net floor area (m^2)

Conditioned:	**73.7**
Unconditioned:	**2.3**
Garage:	**-**
TOTAL:	**76**

Annual thermal performance loads (MJ/m^2)

Heating:	**30.8**
Cooling:	**46.7**
TOTAL:	**77.5**

Window selection - default windows only

Note on allowable window values: Only a 5% tolerance to the nominated SHGC window values shown on page 2 can be used with this rating.

Note: Only a +/-5% SHGC tolerance is allowed with this rating.

NB: This tolerance ONLY applies to SHGC, the U-value can always be lower but not higher than the values stated on page 2.

If any of the windows selected are outside the 5% tolerance then this certificate is no longer valid and the dwelling will need to be rerated to confirm compliance.

Plan documents

Plan ref/date:	**16-021 DA151-Rev5-3.10.2017**
Prepared by:	**Sissons Architects**

Scan to access this certificate online and confirm this is valid.

https://www.fr5.com.au/QRCodeLanding?PublicId=NILMPV74FF

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Building Features

Windows type and performance value

Window ID	Window type	U-value	SHGC
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27
ATB-003-04 B	Al Thermally Broken A DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27

Windows schedule

Window ID	Window no.	Height (mm)	Width (mm)	Orientation	Zone name	Outdoor shade
ATB-004-04 B	Opening 1	2660	1067	NNE	Kitchen/Living	No
ATB-003-04 B	Opening 2	2660	1220	NNE	Kitchen/Living	No
ATB-003-04 B	Opening 18	2660	1210	NNE	Kitchen/Living	No
ATB-004-04 B	Opening 16	2660	1355	WNW	Kitchen/Living	No
ATB-004-04 B	Opening 24	2660	1365	WNW	Kitchen/Living	No
ATB-004-04 B	Opening 8	2660	2200	SSW	Kitchen/Living	No
ATB-004-04 B	Opening 5	2660	2954	WNW	Bedroom 2	No
ATB-004-04 B	Opening 19	2660	1541	NNE	Circulation	No
ATB-004-04 B	Opening 3	2660	1075	NNE	Bedroom 1	No
ATB-003-04 B	Opening 20	2660	1075	NNE	Bedroom 1	No

Roof windows and skylight type and performance value

ID	Window type	U-value	SHGC

Roof window and skylight schedule

ID	Roof window/ skylight no.	Area (m^2)	Orientation	Zone name	Outdoor shade	Indoor shade/ diffuser

External wall type

Type	Insulation	Wall wrap
1 : Alcubond	Polystyrene extruded: R2.5 (R2.5)	No
2 : FR5 - Cast Concrete	Polystyrene extruded: R2.5 (R2.5)	No
3 : FR5 - Concrete Block Solid/Core Filled		No

External wall schedule

Wall type	Area (m^2)	Orientation	Zone name	Fixed shade	Eaves
1 : Alcubond	15.9	NNE	Kitchen/Living	No	No
1 : Alcubond	10.6	WNW	Kitchen/Living	No	No

Building Features

2 : FR5 - Cast Concrete	6.4	SSW	Kitchen/Living	Yes	Yes
2 : FR5 - Cast Concrete	3.6	WNW	Kitchen/Living	Yes	Yes
2 : FR5 - Cast Concrete	3.1	ESE	Kitchen/Living	Yes	No
2 : FR5 - Cast Concrete	7.9	WNW	Bedroom 2	Yes	Yes
3 : FR5 - Concrete Block Solid/Core Filled	9.5	SSW	Bedroom 2	No	No
2 : FR5 - Cast Concrete	4.3	NNE	Circulation	Yes	No
3 : FR5 - Concrete Block Solid/Core Filled	4.1	SSW	Circulation	No	No
1 : Alcubond	8.5	NNE	Bedroom 1	No	No
2 : FR5 - Cast Concrete	3.1	WNW	Bedroom 1	Yes	No
3 : FR5 - Concrete Block Solid/Core Filled	9.5	ESE	Bedroom 1	No	No
3 : FR5 - Concrete Block Solid/Core Filled	4.9	ESE	ENS	No	No
3 : FR5 - Concrete Block Solid/Core Filled	8.5	SSW	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	7.1	ESE	Bath	No	No

Internal wall type

Type	Area (m^2)	Insulation
1 : FR5 - Internal Plasterboard Stud Wall	72	

Floors

Location	Construction	Area (m^2)	Sub floor ventilation	Added insulation	Covering
Kitchen/Living	SuspSlab : 150mm: 150mm concrete slab	18.8	Enclosed	0.0	floattimber
Kitchen/Living	SuspSlab : 150mm: 150mm concrete slab	9.3	Elevated	2.5	floattimber
Bedroom 2	SuspSlab : 150mm: 150mm concrete slab	10.7	Enclosed	0.0	Carpet
Circulation	SuspSlab : 150mm: 150mm concrete slab	11.4	Enclosed	0.0	floattimber
Bedroom 1	SuspSlab : 150mm: 150mm concrete slab	7.6	Enclosed	0.0	Carpet
Bedroom 1	SuspSlab : 150mm: 150mm concrete slab	3.6	Elevated	2.5	Carpet
ENS	SuspSlab : 150mm: 150mm concrete slab	5.1	Enclosed	0.0	Tiles
Bath	SuspSlab : 150mm: 150mm concrete slab	7.1	Enclosed	0.0	Tiles
L'dry	SuspSlab : 150mm: 150mm concrete slab	2.3	Enclosed	0.0	Tiles

Building Features

Ceiling type

Location	Material	Added insulation	Roof space above

Ceiling penetrations

Location	Number	Type	Width (mm)	Length (mm)	Seal/ unsealed
Kitchen/Living	11	Downlights	50	50	Sealed
Kitchen/Living	2	Exhaust Fans	180	180	Sealed
Bedroom 2	4	Downlights	50	50	Sealed
Circulation	4	Downlights	50	50	Sealed
Bedroom 1	4	Downlights	50	50	Sealed
Bath	1	Exhaust Fans	180	180	Sealed

Ceiling fans

Location	Number	Diameter (mm)

Roof type

Material	Added insulation	Roof colour
Ceil: Ceiling	0.0	light

Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **NILMPV74FF** Date of Certificate: **29 Nov 2017** ★ Star rating: **6.4**

Additional information

Explanatory notes

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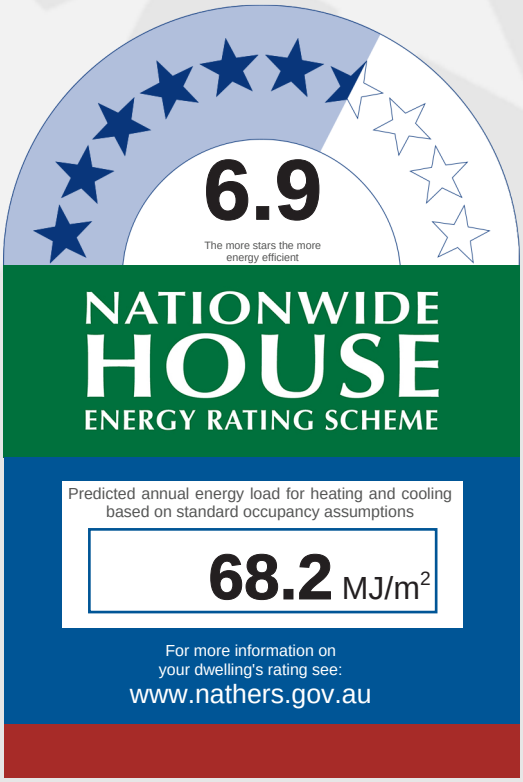
Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **4TTQ4T2W4Z** Date of Certificate: **29 Nov 2017** ★ Star rating: **6.9**

Assessor details

Accreditation number:	**20594**
Name:	**Suruchi Pathak**
Organisation:	**Suruchi Pathak**
Email:	**suruchipathak@gmail.com**
Phone:	**0434220286**
Declaration of interest:	**No potential conflicts of interest to declare**
Software:	**FirstRate5: 5.2.7 (3.13)**
AAO:	**ABSA**



Overview

Dwelling details

Address:	**0905, 24-26 Railway Parade**		
Suburb:	**Westmead**		
State:	**NSW**	Postcode:	**2145**
Type:	**New Home**	NCC Class:	**Class 2**
Lot/DP number:	**1/952720**	NatHERS climate zone:	**28**
Exposure:	**exposed**		

Key construction and insulation materials

(see following pages for details)

Construction:	Wall:	**Alucobond Panel,Conc100+PB**
	Roof:	**Neighbour above**
	Floor:	**Concrete**
Insulation:	Wall:	**R2.5(Added to all external)**
	Roof:	**NA**
	Floor:	**R2.5(floor with air below)**
Glazing:		**Aluminum**
		Refer detailed report

Ceiling penetrations

(see following pages for details)

Sealed:	**26**
Unsealed:	**0**
TOTAL:**	**26**

Principal downlight type: **LED**

NOTE: This total is the maximum number of ceiling penetrations allowed to a ceiling (under a roof) for this certificate. **If this number is exceded in construction then this certificate IS NOT VALID and a new certificate is required. Loss of ceiling insulation for the penetrations listed has been taken into account with the rating.

Net floor area (m^2)

Conditioned:	**73.7**
Unconditioned:	**2.3**
Garage:	**-**
TOTAL:	**76**

Annual thermal performance loads (MJ/m^2)

Heating:	**28.4**
Cooling:	**39.8**
TOTAL:	**68.2**

Plan documents

Plan ref/date:	**16-021 DA151-Rev5-3.10.2017**
Prepared by:	**Sissons Architects**

Window selection - default windows only

Note on allowable window values: Only a 5% tolerance to the nominated SHGC window values shown on page 2 can be used with this rating.

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Building Features

Windows type and performance value

Window ID	Window type	U-value	SHGC
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27
ATB-003-04 B	Al Thermally Broken A DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27

Windows schedule

Window ID	Window no.	Height (mm)	Width (mm)	Orientation	Zone name	Outdoor shade
ATB-004-04 B	Opening 8	2660	2200	SSW	Kitchen/Living	No
ATB-004-04 B	Opening 16	2660	1355	ESE	Kitchen/Living	No
ATB-004-04 B	Opening 24	2660	1365	ESE	Kitchen/Living	No
ATB-004-04 B	Opening 1	2660	1067	NNE	Kitchen/Living	No
ATB-003-04 B	Opening 2	2660	1220	NNE	Kitchen/Living	No
ATB-003-04 B	Opening 18	2660	1210	NNE	Kitchen/Living	No
ATB-004-04 B	Opening 5	2660	2954	ESE	Bedroom 2	No
ATB-004-04 B	Opening 19	2660	1541	NNE	Circulation	No
ATB-004-04 B	Opening 3	2660	1075	NNE	Bedroom 1	No
ATB-003-04 B	Opening 20	2660	1075	NNE	Bedroom 1	No

Roof windows and skylight type and performance value

ID	Window type	U-value	SHGC

Roof window and skylight schedule

ID	Roof window/ skylight no.	Area (m^2)	Orientation	Zone name	Outdoor shade	Indoor shade/ diffuser

External wall type

Type	Insulation	Wall wrap
1 : FR5 - Cast Concrete	Polystyrene extruded: R2.5 (R2.5)	No
2 : Alcubond	Polystyrene extruded: R2.5 (R2.5)	No
3 : FR5 - Concrete Block Solid/Core Filled		No

External wall schedule

Wall type	Area (m^2)	Orientation	Zone name	Fixed shade	Eaves
1 : FR5 - Cast Concrete	3.1	WNW	Kitchen/Living	Yes	No
1 : FR5 - Cast Concrete	3.6	ESE	Kitchen/Living	No	Yes

Building Features

1 : FR5 - Cast Concrete	6.4	SSW	Kitchen/Living	Yes	Yes
2 : Alcubond	10.6	ESE	Kitchen/Living	No	No
2 : Alcubond	15.9	NNE	Kitchen/Living	No	No
3 : FR5 - Concrete Block Solid/Core Filled	9.5	SSW	Bedroom 2	No	No
1 : FR5 - Cast Concrete	7.9	ESE	Bedroom 2	No	Yes
3 : FR5 - Concrete Block Solid/Core Filled	4.1	SSW	Circulation	No	No
1 : FR5 - Cast Concrete	4.3	NNE	Circulation	Yes	No
3 : FR5 - Concrete Block Solid/Core Filled	9.5	WNW	Bedroom 1	No	No
1 : FR5 - Cast Concrete	3.1	ESE	Bedroom 1	Yes	No
2 : Alcubond	8.5	NNE	Bedroom 1	No	No
3 : FR5 - Concrete Block Solid/Core Filled	4.9	WNW	ENS	No	No
3 : FR5 - Concrete Block Solid/Core Filled	7.1	WNW	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	8.5	SSW	Bath	No	No

Internal wall type

Type	Area (m^2)	Insulation
1 : FR5 - Internal Plasterboard Stud Wall	72	

Floors

Location	Construction	Area (m^2)	Sub floor ventilation	Added insulation	Covering
Kitchen/Living	SuspSlab : 150mm: 150mm concrete slab	18.8	Enclosed	0.0	floattimber
Kitchen/Living	SuspSlab : 150mm: 150mm concrete slab	9.3	Elevated	2.5	floattimber
Bedroom 2	SuspSlab : 150mm: 150mm concrete slab	10.7	Enclosed	0.0	Carpet
Circulation	SuspSlab : 150mm: 150mm concrete slab	11.4	Enclosed	0.0	floattimber
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Bedroom 1	SuspSlab : 150mm: 150mm concrete slab	3.6	Elevated	2.5	Carpet
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Bath	SuspSlab : 150mm: 150mm concrete slab	7.1	Enclosed	0.0	Tiles
L'dry	SuspSlab : 150mm: 150mm concrete slab	2.3	Enclosed	0.0	Tiles

Building Features

Ceiling type

Location	Material	Added insulation	Roof space above

Ceiling penetrations

Location	Number	Type	Width (mm)	Length (mm)	Seal/ unsealed
Kitchen/Living	12	Downlights	50	50	Sealed
Kitchen/Living	1	Exhaust Fans	180	180	Sealed
Bedroom 2	4	Downlights	50	50	Sealed
Circulation	4	Downlights	50	50	Sealed
Bedroom 1	4	Downlights	50	50	Sealed
Bath	1	Exhaust Fans	180	180	Sealed

Ceiling fans

Location	Number	Diameter (mm)

Roof type

Material	Added insulation	Roof colour
Ceil: Ceiling	0.0	light

Additional information

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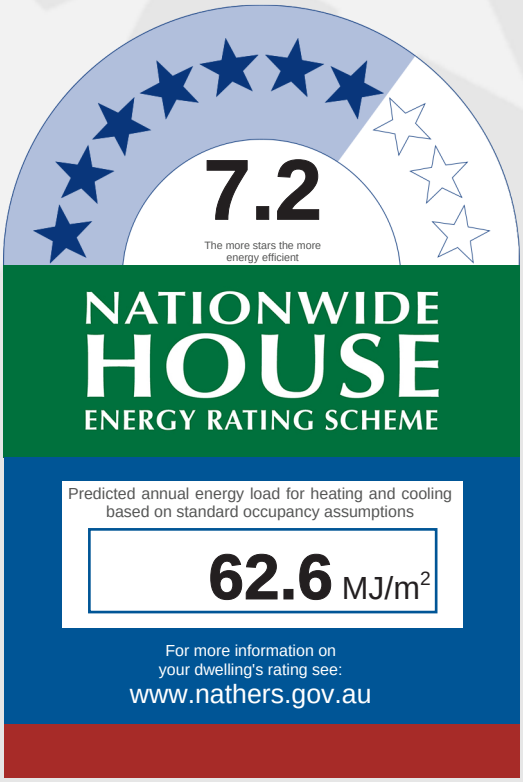
Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **KCMA3GI3U3** Date of Certificate: **29 Nov 2017** ★ Star rating: **7.2**

Assessor details

Accreditation number:	**20594**
Name:	**Suruchi Pathak**
Organisation:	**Suruchi Pathak**
Email:	**suruchipathak@gmail.com**
Phone:	**0434220286**
Declaration of interest:	**No potential conflicts of interest to declare**
Software:	**FirstRate5: 5.2.7 (3.13)**
AAO:	**ABSA**



Overview

Dwelling details

Address:	**0906, 24-26 Railway Parade**		
Suburb:	**Westmead**		
State:	**NSW**	Postcode:	**2145**
Type:	**New Home**	NCC Class:	**Class 2**
Lot/DP number:	**1/952720**	NatHERS climate zone:	**28**
Exposure:	**exposed**		

Key construction and insulation materials

(see following pages for details)

Construction:	Wall:	**Alucobond Panel,Conc100+PB**
	Roof:	**Neighbour above**
	Floor:	**Concrete**
Insulation:	Wall:	**R2.5(Added to all external)**
	Roof:	**NA**
	Floor:	**R2.5(floor with air below)**
Glazing:		**Aluminum**
		Refer detailed report

Ceiling penetrations

(see following pages for details)

Sealed:	**20**
Unsealed:	**0**
TOTAL:**	**20**

Principal downlight type: **LED**

NOTE: This total is the maximum number of ceiling penetrations allowed to a ceiling (under a roof) for this certificate. **If this number is exceded in construction then this certificate IS NOT VALID and a new certificate is required. Loss of ceiling insulation for the penetrations listed has been taken into account with the rating.

Net floor area (m^2)

Conditioned:	**47.5**
Unconditioned:	**4.7**
Garage:	**-**
TOTAL:	**52.2**

Annual thermal performance loads (MJ/m^2)

Heating:	**26**
Cooling:	**36.6**
TOTAL:	**62.6**

Plan documents

Plan ref/date:	**16-021 DA151-Rev5-3.10.2017**
Prepared by:	**Sissons Architects**

Window selection - default windows only

Note on allowable window values: Only a 5% tolerance to the nominated SHGC window values shown on page 2 can be used with this rating.

Note: Only a +/-5% SHGC tolerance is allowed with this rating.

NB: This tolerance ONLY applies to SHGC, the U-value can always be lower but not higher than the values stated on page 2.

If any of the windows selected are outside the 5% tolerance then this certificate is no longer valid and the dwelling will need to be rerated to confirm compliance.

Scan to access this certificate online and confirm this is valid.

https://www.fr5.com.au/QRCodeLanding?PublicId=KCMA3GI3U3

* Nationwide House Energy Rating Scheme (NatHERS) is an initiative of the Australian, state and territory governments. For more details see www.nathers.gov.au

Building Features

Windows type and performance value

Window ID	Window type	U-value	SHGC
ATB-003-04 B	Al Thermally Broken A DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27

Windows schedule

Window ID	Window no.	Height (mm)	Width (mm)	Orientation	Zone name	Outdoor shade
ATB-003-04 B	Opening 28	2660	1395	ESE	Kitchen/Living 8	No
ATB-004-04 B	Opening 52	2660	1385	ESE	Kitchen/Living 8	No
ATB-004-04 B	Opening 41	2660	2098	NNE	Kitchen/Living 8	No
ATB-004-04 B	Opening 49	2660	3000	ESE	Kitchen/Living 8	No
ATB-003-04 B	Opening 29	2660	1080	ESE	Bedroom	No
ATB-004-04 B	Opening 50	2660	1070	ESE	Bedroom	No

Roof windows and skylight type and performance value

ID	Window type	U-value	SHGC

Roof window and skylight schedule

ID	Roof window/ skylight no.	Area (m^2)	Orientation	Zone name	Outdoor shade	Indoor shade/ diffuser

External wall type

Type	Insulation	Wall wrap
1 : Alcubond	Polystyrene extruded: R2.5 (R2.5)	No
2 : FR5 - Cast Concrete	Polystyrene extruded: R2.5 (R2.5)	No
3 : FR5 - Concrete Block Solid/Core Filled		No

External wall schedule

Wall type	Area (m^2)	Orientation	Zone name	Fixed shade	Eaves
1 : Alcubond	11	ESE	Kitchen/Living 8	No	No
2 : FR5 - Cast Concrete	6.4	NNE	Kitchen/Living 8	Yes	No
2 : FR5 - Cast Concrete	8.5	ESE	Kitchen/Living 8	Yes	Yes
3 : FR5 - Concrete Block Solid/Core Filled	2	NNE	Kitchen/Living 8	No	No
3 : FR5 - Concrete Block Solid/Core Filled	19.5	WNW	Kitchen/Living 8	No	No
3 : FR5 - Concrete Block Solid/Core Filled	12.8	SSW	Kitchen/Living 8	No	No

Building Features

2 : FR5 - Cast Concrete	3.2	SSW	Kitchen/Living 8	No	No
1 : Alcubond	8.1	ESE	Bedroom	No	No
2 : FR5 - Cast Concrete	6.4	NNE	Bedroom	No	No
3 : FR5 - Concrete Block Solid/Core Filled	3.2	NNE	Bedroom	No	No
2 : FR5 - Cast Concrete	6.4	SSW	Bedroom	Yes	No
3 : FR5 - Concrete Block Solid/Core Filled	4.1	NNE	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	8	WNW	Bath	No	No

Internal wall type

Type	Area (m^2)	Insulation
1 : FR5 - Internal Plasterboard Stud Wall	15.4	

Floors

Location	Construction	Area (m^2)	Sub floor ventilation	Added insulation	Covering
Kitchen/Living 8	SuspSlab : 150mm: 150mm concrete slab	36.5	Enclosed	0.0	floattimber
Bedroom	SuspSlab : 150mm: 150mm concrete slab	11	Enclosed	0.0	Carpet
Bath	SuspSlab : 150mm: 150mm concrete slab	4.7	Enclosed	0.0	Tiles

Ceiling type

Location	Material	Added insulation	Roof space above

Ceiling penetrations

Location	Number	Type	Width (mm)	Length (mm)	Seal/ unsealed
Kitchen/Living 8	1	Exhaust Fans	180	180	Sealed
Kitchen/Living 8	14	Downlights	50	50	Sealed
Bedroom	4	Downlights	50	50	Sealed
Bath	1	Exhaust Fans	180	180	Sealed

Ceiling fans

Location	Number	Diameter (mm)

Roof type

Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **KCMA3GI3U3** Date of Certificate: **29 Nov 2017** ★ Star rating: **7.2**

Building Features

Material	Added insulation	Roof colour
Ceil: Ceiling	0.0	medium

Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **KCMA3GI3U3** Date of Certificate: **29 Nov 2017** ★ Star rating: **7.2**

Additional information

Explanatory notes

About this report

Residential energy ratings address the quality of the building fabric i.e. walls, windows, floors and roof/ceilings. Ratings do not cover the energy or water efficiency of appliances including heating and cooling, hot water, dishwashers, ovens, fridges, TVs etc. or solar panel or water tank requirements. The efficiency or specification of these items is generally covered by other regulations, standards or guidelines.

General Information

A NatHERS House Energy Rating is a comprehensive, dynamic computer modelling evaluation of the floorplans, elevations and specifications to predict an energy load of a home. Not all of us use our homes in the same way, so ratings are generated using standard assumptions. This means homes can be compared across the country.

The actual energy consumption of your home may vary significantly from the predicted energy load figures in this report depending on issues such as the size of your household and your personal preferences, e.g. in terms of heating or cooling.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparative purposes between different house designs and for demonstrating that the design meets the required regulatory compliance.

Homes that are energy efficient use less energy, are warmer in winter, cooler in summer and cost less to run. The higher the star rating the more energy efficient.

This NatHERS House Energy Rating report was carefully prepared by your assessor on the basis of comprehensive modelling using standard procedures to rate your home using an underlying engine developed by the Australian Commonwealth Scientific and Industrial Research Organisation (CSIRO).

All information relating to energy loads presented in this report is based on a range of standard assumptions in order to allow for comparisons with reports prepared for other homes and to demonstrate minimum regulatory compliance. The standard assumptions include figures for occupancy, indoor air temperature and are based on a unique climate file for your region.

Accredited Assessors

To ensure you get a high-quality, professional NatHERS House Energy Rating report, you should always use an accredited assessor, 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. Non-accredited assessors do not have this level of quality assurance or any on-going training requirements.

If you have any questions or concerns about this report, please direct them to your assessor in the first instance.

If your assessor is unable to address your questions or concerns, please contact their AAO listed under ‘assessor details’. You can also find a range of information about accredited assessors on the AAO websites.

Disclaimer

The energy values quoted are for comparison purposes only; they are not a prediction of actual energy use. This rating only applies to the floor plan, construction details, orientation and climate as submitted and included in the attached drawing set that bears a stamp with the same number as this certificate. Changes to any of these details could affect the rating.

Contact

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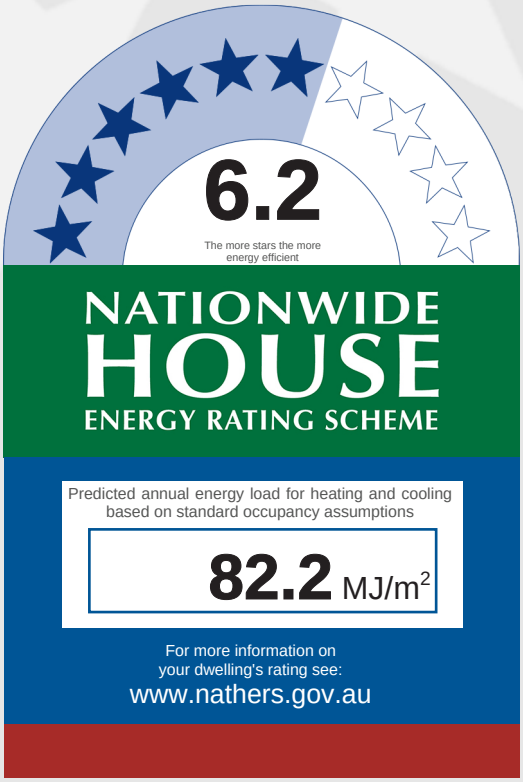
Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **UWPI248T1G** Date of Certificate: **29 Nov 2017** ★ Star rating: **6.2**

Assessor details

Accreditation number:	**20594**
Name:	**Suruchi Pathak**
Organisation:	**Suruchi Pathak**
Email:	**suruchipathak@gmail.com**
Phone:	**0434220286**
Declaration of interest:	**No potential conflicts of interest to declare**
Software:	**FirstRate5: 5.2.7 (3.13)**
AAO:	**ABSA**



Overview

Dwelling details

Address:	**1001, 24-26 Railway Parade**		
Suburb:	**Westmead**		
State:	**NSW**	Postcode:	**2145**
Type:	**New Home**	NCC Class:	**Class 2**
Lot/DP number:	**1/952720**	NatHERS climate zone:	**28**
Exposure:	**exposed**		

Key construction and insulation materials

(see following pages for details)

Construction:	Wall:	**Alucobond Panel,Conc100+PB**
	Roof:	**Neighbour above**
	Floor:	**Concrete**
Insulation:	Wall:	**R2.5(Added to all external)**
	Roof:	**NA**
	Floor:	**NA**
Glazing:		**Aluminum**
		Refer detailed report

Ceiling penetrations

(see following pages for details)

Sealed:	**26**
Unsealed:	**0**
TOTAL:**	**26**

Principal downlight type: **LED**

NOTE: This total is the maximum number of ceiling penetrations allowed to a ceiling (under a roof) for this certificate. **If this number is exceded in construction then this certificate IS NOT VALID and a new certificate is required. Loss of ceiling insulation for the penetrations listed has been taken into account with the rating.

Net floor area (m^2)

Conditioned:	**72.3**
Unconditioned:	**2.3**
Garage:	**-**
TOTAL:	**74.6**

Annual thermal performance loads (MJ/m^2)

Heating:	**45.5**
Cooling:	**36.7**
TOTAL:	**82.2**

Window selection - default windows only

Note on allowable window values: Only a 5% tolerance to the nominated SHGC window values shown on page 2 can be used with this rating.

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https://www.fr5.com.au/QRCodeLanding?PublicId=UWPI248T1G

Plan documents

Plan ref/date:	**16-021 DA151-Rev5-3.10.2017**
Prepared by:	**Sissons Architects**

Building Features

Windows type and performance value

Window ID	Window type	U-value	SHGC
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27

Windows schedule

Window ID	Window no.	Height (mm)	Width (mm)	Orientation	Zone name	Outdoor shade
ATB-004-04 B	Opening 1	2660	1200	SSW	Kitchen/Living	No
ATB-004-04 B	Opening 2	2660	1220	SSW	Kitchen/Living	No
ATB-004-04 B	Opening 18	2660	1210	SSW	Kitchen/Living	No
ATB-004-04 B	Opening 16	2660	1355	ESE	Kitchen/Living	No
ATB-004-04 B	Opening 25	2660	1365	ESE	Kitchen/Living	No
ATB-004-04 B	Opening 8	2660	2200	NNE	Kitchen/Living	No
ATB-004-04 B	Opening 5	2660	2960	ESE	Bedroom 2	No
ATB-004-04 B	Opening 19	2660	1560	SSW	Circulation	No
ATB-004-04 B	Opening 3	2660	1075	SSW	Bedroom 1	No
ATB-004-04 B	Opening 20	2660	1075	SSW	Bedroom 1	No

Roof windows and skylight type and performance value

ID	Window type	U-value	SHGC

Roof window and skylight schedule

ID	Roof window/ skylight no.	Area (m^2)	Orientation	Zone name	Outdoor shade	Indoor shade/ diffuser

External wall type

Type	Insulation	Wall wrap
1 : Alcubond	Polystyrene extruded: R2.5 (R2.5)	No
2 : FR5 - Cast Concrete	Polystyrene extruded: R2.5 (R2.5)	No
3 : FR5 - Concrete Block Solid/Core Filled		No

External wall schedule

Wall type	Area (m^2)	Orientation	Zone name	Fixed shade	Eaves
1 : Alcubond	15.9	SSW	Kitchen/Living	No	No
1 : Alcubond	10.6	ESE	Kitchen/Living	No	No
2 : FR5 - Cast Concrete	6.4	NNE	Kitchen/Living	Yes	Yes

Building Features

2 : FR5 - Cast Concrete	3.6	ESE	Kitchen/Living	Yes	Yes
2 : FR5 - Cast Concrete	3.1	WNW	Kitchen/Living	Yes	No
2 : FR5 - Cast Concrete	7.9	ESE	Bedroom 2	Yes	Yes
3 : FR5 - Concrete Block Solid/Core Filled	9.5	NNE	Bedroom 2	No	No
2 : FR5 - Cast Concrete	4.3	SSW	Circulation	Yes	No
3 : FR5 - Concrete Block Solid/Core Filled	4.1	NNE	Circulation	No	No
1 : Alcubond	8.5	SSW	Bedroom 1	No	No
2 : FR5 - Cast Concrete	3.1	ESE	Bedroom 1	Yes	No
3 : FR5 - Concrete Block Solid/Core Filled	9.5	WNW	Bedroom 1	No	No
3 : FR5 - Concrete Block Solid/Core Filled	4.9	WNW	ENS	No	No
3 : FR5 - Concrete Block Solid/Core Filled	5.1	NNE	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	2.3	WNW	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	3.3	NNE	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	4.9	WNW	Bath	No	No

Internal wall type

Type	Area (m^2)	Insulation
1 : FR5 - Internal Plasterboard Stud Wall	72	

Floors

Location	Construction	Area (m^2)	Sub floor ventilation	Added insulation	Covering
Kitchen/Living	SuspSlab : 150mm: 150mm concrete slab	27.9	Enclosed	0.0	floattimber
Bedroom 2	SuspSlab : 150mm: 150mm concrete slab	10.7	Enclosed	0.0	Carpet
Circulation	SuspSlab : 150mm: 150mm concrete slab	11.4	Enclosed	0.0	floattimber
Bedroom 1	SuspSlab : 150mm: 150mm concrete slab	11.1	Enclosed	0.0	Carpet
ENS	SuspSlab : 150mm: 150mm concrete slab	5.1	Enclosed	0.0	Tiles
Bath	SuspSlab : 150mm: 150mm concrete slab	6	Enclosed	0.0	Tiles
L'dry	SuspSlab : 150mm: 150mm concrete slab	2.3	Enclosed	0.0	Tiles

Ceiling type

Building Features

Location	Material	Added insulation	Roof space above

Ceiling penetrations

Location	Number	Type	Width (mm)	Length (mm)	Seal/ unsealed
Kitchen/Living	12	Downlights	50	50	Sealed
Kitchen/Living	1	Exhaust Fans	180	180	Sealed
Bedroom 2	4	Downlights	50	50	Sealed
Circulation	4	Downlights	50	50	Sealed
Bedroom 1	4	Downlights	50	50	Sealed
Bath	1	Exhaust Fans	180	180	Sealed

Ceiling fans

Location	Number	Diameter (mm)

Roof type

Material	Added insulation	Roof colour
Ceil: Ceiling	0.0	light

Additional information

Explanatory notes

About this report

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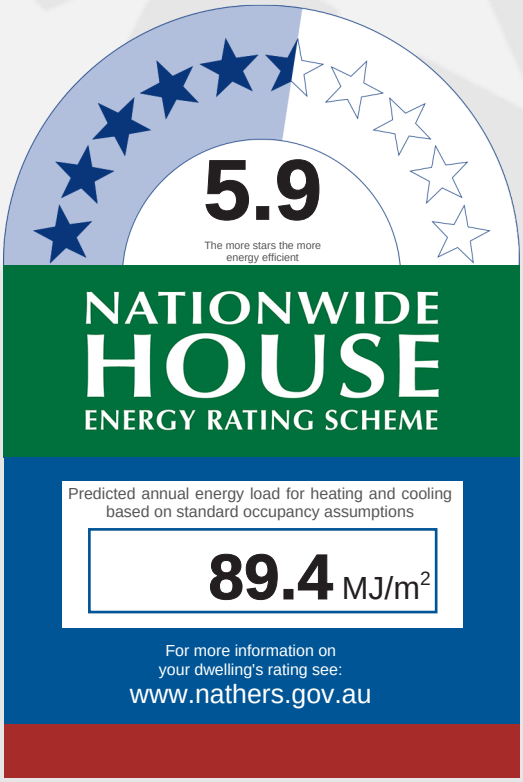
Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **HWNBPHGJ8O** Date of Certificate: **29 Nov 2017** ★ Star rating: **5.9**

Assessor details

Accreditation number:	**20594**
Name:	**Suruchi Pathak**
Organisation:	**Suruchi Pathak**
Email:	**suruchipathak@gmail.com**
Phone:	**0434220286**
Declaration of interest:	**No potential conflicts of interest to declare**
Software:	**FirstRate5: 5.2.7 (3.13)**
AAO:	**ABSA**



Overview

Dwelling details

Address:	**1002, 24-26 Railway Parade**		
Suburb:	**Westmead**		
State:	**NSW**	Postcode:	**2145**
Type:	**New Home**	NCC Class:	**Class 2**
Lot/DP number:	**1/952720**	NatHERS climate zone:	**28**
Exposure:	**exposed**		

Key construction and insulation materials

(see following pages for details)

Construction:	Wall:	**Alucobond Panel,Conc100+PB**
	Roof:	**Neighbour above**
	Floor:	**Concrete**
Insulation:	Wall:	**R2.5(Added to all external)**
	Roof:	**NA**
	Floor:	**NA**
Glazing:		**Aluminum**
		Refer detailed report

Ceiling penetrations

(see following pages for details)

Sealed:	**24**
Unsealed:	**0**
TOTAL:**	**24**

Principal downlight type: **LED**

NOTE: This total is the maximum number of ceiling penetrations allowed to a ceiling (under a roof) for this certificate. **If this number is exceded in construction then this certificate IS NOT VALID and a new certificate is required. Loss of ceiling insulation for the penetrations listed has been taken into account with the rating.

Net floor area (m^2)

Conditioned:	**72.6**
Unconditioned:	**2.3**
Garage:	**-**
TOTAL:	**74.9**

Annual thermal performance loads (MJ/m^2)

Heating:	**47.2**
Cooling:	**42.2**
TOTAL:	**89.4**

Window selection - default windows only

Note on allowable window values: Only a 5% tolerance to the nominated SHGC window values shown on page 2 can be used with this rating.

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https://www.fr5.com.au/QRCodeLanding?PublicId=HWNBPHGJ8O

Plan documents

Plan ref/date:	**16-021 DA151-Rev5-3.10.2017**
Prepared by:	**Sissons Architects**

Building Features

Windows type and performance value

Window ID	Window type	U-value	SHGC
ATB-006-04 B	Al Thermally Broken B DG Argon Fill Low Solar Gain low-E -Clear	3	0.26
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27
ATB-003-04 B	Al Thermally Broken A DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27

Windows schedule

Window ID	Window no.	Height (mm)	Width (mm)	Orientation	Zone name	Outdoor shade
ATB-006-04 B	Opening 8	2660	2200	NNE	Kitchen/Living	No
ATB-004-04 B	Opening 16	2660	1355	WNW	Kitchen/Living	No
ATB-004-04 B	Opening 24	2660	1365	WNW	Kitchen/Living	No
ATB-004-04 B	Opening 1	2660	1067	SSW	Kitchen/Living	No
ATB-003-04 B	Opening 2	2660	1220	SSW	Kitchen/Living	No
ATB-003-04 B	Opening 18	2660	1210	SSW	Kitchen/Living	No
ATB-006-04 B	Opening 5	2660	2954	WNW	Bedroom 2	No
ATB-004-04 B	Opening 19	2660	1541	SSW	Circulation	No
ATB-004-04 B	Opening 3	2660	1075	SSW	Bedroom 1	No
ATB-003-04 B	Opening 20	2660	1075	SSW	Bedroom 1	No

Roof windows and skylight type and performance value

ID	Window type	U-value	SHGC

Roof window and skylight schedule

ID	Roof window/ skylight no.	Area (m^2)	Orientation	Zone name	Outdoor shade	Indoor shade/ diffuser

External wall type

Type	Insulation	Wall wrap
1 : FR5 - Cast Concrete	Polystyrene extruded: R2.5 (R2.5)	No
2 : Alcubond	Polystyrene extruded: R2.5 (R2.5)	No
3 : FR5 - Concrete Block Solid/Core Filled		No

External wall schedule

Wall type	Area (m^2)	Orientation	Zone name	Fixed shade	Eaves
1 : FR5 - Cast Concrete	3.1	ESE	Kitchen/Living	Yes	No

Building Features

1 : FR5 - Cast Concrete	3.6	WNW	Kitchen/Living	No	Yes
1 : FR5 - Cast Concrete	6.4	NNE	Kitchen/Living	Yes	Yes
2 : Alcubond	10.6	WNW	Kitchen/Living	No	No
2 : Alcubond	15.9	SSW	Kitchen/Living	No	No
3 : FR5 - Concrete Block Solid/Core Filled	9.5	NNE	Bedroom 2	No	No
1 : FR5 - Cast Concrete	7.9	WNW	Bedroom 2	No	Yes
3 : FR5 - Concrete Block Solid/Core Filled	4.1	NNE	Circulation	No	No
1 : FR5 - Cast Concrete	4.3	SSW	Circulation	Yes	No
3 : FR5 - Concrete Block Solid/Core Filled	9.5	ESE	Bedroom 1	No	No
1 : FR5 - Cast Concrete	3.1	WNW	Bedroom 1	Yes	No
2 : Alcubond	8.5	SSW	Bedroom 1	No	No
3 : FR5 - Concrete Block Solid/Core Filled	4.9	ESE	ENS	No	No
3 : FR5 - Concrete Block Solid/Core Filled	4.9	ESE	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	3.3	NNE	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	2.3	ESE	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	5.1	NNE	Bath	No	No

Internal wall type

Type	Area (m^2)	Insulation
1 : FR5 - Internal Plasterboard Stud Wall	72	

Floors

Location	Construction	Area (m^2)	Sub floor ventilation	Added insulation	Covering
Kitchen/Living	SuspSlab : 150mm: 150mm concrete slab	28.3	Enclosed	0.0	floattimber
Bedroom 2	SuspSlab : 150mm: 150mm concrete slab	10.7	Enclosed	0.0	Carpet
Circulation	SuspSlab : 150mm: 150mm concrete slab	11.4	Enclosed	0.0	floattimber
Bedroom 1	SuspSlab : 150mm: 150mm concrete slab	11.1	Enclosed	0.0	Carpet
ENS	SuspSlab : 150mm: 150mm concrete slab	5.1	Enclosed	0.0	Tiles
Bath	SuspSlab : 150mm: 150mm concrete slab	6	Enclosed	0.0	Tiles
L'dry	SuspSlab : 150mm: 150mm concrete slab	2.3	Enclosed	0.0	Tiles

Building Features

Ceiling type

Location	Material	Added insulation	Roof space above

Ceiling penetrations

Location	Number	Type	Width (mm)	Length (mm)	Seal/ unsealed
Kitchen/Living	10	Downlights	50	50	Sealed
Kitchen/Living	1	Exhaust Fans	180	180	Sealed
Bedroom 2	4	Downlights	50	50	Sealed
Circulation	4	Downlights	50	50	Sealed
Bedroom 1	4	Downlights	50	50	Sealed
Bath	1	Exhaust Fans	180	180	Sealed

Ceiling fans

Location	Number	Diameter (mm)

Roof type

Material	Added insulation	Roof colour
Ceil: Ceiling	0.0	light

Additional information

Explanatory notes

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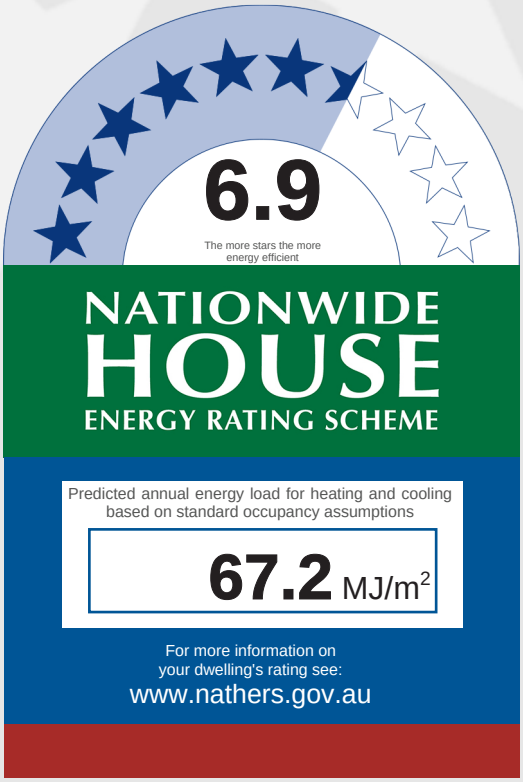
Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **AORGHH21D3** Date of Certificate: **29 Nov 2017** ★ Star rating: **6.9**

Assessor details

Accreditation number:	**20594**
Name:	**Suruchi Pathak**
Organisation:	**Suruchi Pathak**
Email:	**suruchipathak@gmail.com**
Phone:	**0434220286**
Declaration of interest:	**No potential conflicts of interest to declare**
Software:	**FirstRate5: 5.2.7 (3.13)**
AAO:	**ABSA**



Overview

Dwelling details

Address:	**1003, 24-26 Railway Parade**		
Suburb:	**Westmead**		
State:	**NSW**	Postcode:	**2145**
Type:	**New Home**	NCC Class:	**Class 2**
Lot/DP number:	**1/952720**	NatHERS climate zone:	**28**
Exposure:	**exposed**		

Key construction and insulation materials
(see following pages for details)

Construction:	Wall:	**Alucobond Panel,Conc100+PB**
	Roof:	**Neighbour above**
	Floor:	**Concrete**
Insulation:	Wall:	**R2.5(Added to all external)**
	Roof:	**NA**
	Floor:	**R2.5(floor with air below)**
Glazing:		**Aluminum**
		Refer detailed report

Ceiling penetrations
(see following pages for details)

Sealed:	**20**
Unsealed:	**0**
TOTAL:**	**20**

Principal downlight type: **LED**

NOTE: This total is the maximum number of ceiling penetrations allowed to a ceiling (under a roof) for this certificate. **If this number is exceded in construction then this certificate IS NOT VALID and a new certificate is required. Loss of ceiling insulation for the penetrations listed has been taken into account with the rating.

Net floor area (m^2)

Conditioned:	**47.5**
Unconditioned:	**4.7**
Garage:	**-**
TOTAL:	**52.2**

Annual thermal performance loads (MJ/m^2)

Heating:	**24.3**
Cooling:	**42.9**
TOTAL:	**67.2**

Window selection - default windows only

Note on allowable window values: Only a 5% tolerance to the nominated SHGC window values shown on page 2 can be used with this rating.

Note: Only a +/-5% SHGC tolerance is allowed with this rating.

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If any of the windows selected are outside the 5% tolerance then this certificate is no longer valid and the dwelling will need to be rerated to confirm compliance.

Plan documents

Plan ref/date:	**16-021 DA151-Rev5-3.10.2017**
Prepared by:	**Sissons Architects**

Scan to access this certificate online and confirm this is valid.

https://www.fr5.com.au/QRCodeLanding?PublicId=AORGHH21D3

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Building Features

Windows type and performance value

Window ID	Window type	U-value	SHGC
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27
ATB-003-04 B	Al Thermally Broken A DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27

Windows schedule

Window ID	Window no.	Height (mm)	Width (mm)	Orientation	Zone name	Outdoor shade
ATB-004-04 B	Opening 49	2660	3000	WNW	Kitchen/Living 8	No
ATB-004-04 B	Opening 41	2660	2220	NNE	Kitchen/Living 8	No
ATB-003-04 B	Opening 28	2660	1415	WNW	Kitchen/Living 8	No
ATB-004-04 B	Opening 52	2660	1385	WNW	Kitchen/Living 8	No
ATB-003-04 B	Opening 29	2660	1080	WNW	Bedroom	No
ATB-004-04 B	Opening 51	2660	1070	WNW	Bedroom	No

Roof windows and skylight type and performance value

ID	Window type	U-value	SHGC

Roof window and skylight schedule

ID	Roof window/ skylight no.	Area (m^2)	Orientation	Zone name	Outdoor shade	Indoor shade/ diffuser

External wall type

Type	Insulation	Wall wrap
1 : FR5 - Cast Concrete	Polystyrene extruded: R2.5 (R2.5)	No
2 : FR5 - Concrete Block Solid/Core Filled		No
3 : Alcubond	Polystyrene extruded: R2.5 (R2.5)	No

External wall schedule

Wall type	Area (m^2)	Orientation	Zone name	Fixed shade	Eaves
1 : FR5 - Cast Concrete	3.2	SSW	Kitchen/Living 8	No	No
2 : FR5 - Concrete Block Solid/Core Filled	12.8	SSW	Kitchen/Living 8	No	No
2 : FR5 - Concrete Block Solid/Core Filled	19.5	ESE	Kitchen/Living 8	No	No
2 : FR5 - Concrete Block Solid/Core Filled	2	NNE	Kitchen/Living 8	No	No
1 : FR5 - Cast Concrete	8.5	WNW	Kitchen/Living 8	Yes	Yes
1 : FR5 - Cast Concrete	6.4	NNE	Kitchen/Living 8	Yes	Yes

Building Features

3 : Alcubond	11	WNW	Kitchen/Living 8	No	No
1 : FR5 - Cast Concrete	6.4	SSW	Bedroom	Yes	No
2 : FR5 - Concrete Block Solid/Core Filled	3.2	NNE	Bedroom	No	No
1 : FR5 - Cast Concrete	6.4	NNE	Bedroom	No	No
3 : Alcubond	8.1	WNW	Bedroom	No	No
2 : FR5 - Concrete Block Solid/Core Filled	8	ESE	Bath	No	No
2 : FR5 - Concrete Block Solid/Core Filled	4.1	NNE	Bath	No	No

Internal wall type

Type	Area (m^2)	Insulation
1 : FR5 - Internal Plasterboard Stud Wall	15.4	

Floors

Location	Construction	Area (m^2)	Sub floor ventilation	Added insulation	Covering
Kitchen/Living 8	SuspSlab : 150mm: 150mm concrete slab	36.5	Enclosed	0.0	floattimber
Bedroom	SuspSlab : 150mm: 150mm concrete slab	11	Enclosed	0.0	Carpet
Bath	SuspSlab : 150mm: 150mm concrete slab	4.7	Enclosed	0.0	Tiles

Ceiling type

Location	Material	Added insulation	Roof space above

Ceiling penetrations

Location	Number	Type	Width (mm)	Length (mm)	Seal/ unsealed
Kitchen/Living 8	1	Exhaust Fans	180	180	Sealed
Kitchen/Living 8	14	Downlights	50	50	Sealed
Bedroom	4	Downlights	50	50	Sealed
Bath	1	Exhaust Fans	180	180	Sealed

Ceiling fans

Location	Number	Diameter (mm)

Roof type

Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **AORGHH21D3** Date of Certificate: **29 Nov 2017** ★ Star rating: **6.9**

Building Features

Material	Added insulation	Roof colour
Ceil: Ceiling	0.0	medium

Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **AORGHH21D3** Date of Certificate: **29 Nov 2017** ★ Star rating: **6.9**

Additional information

Explanatory notes

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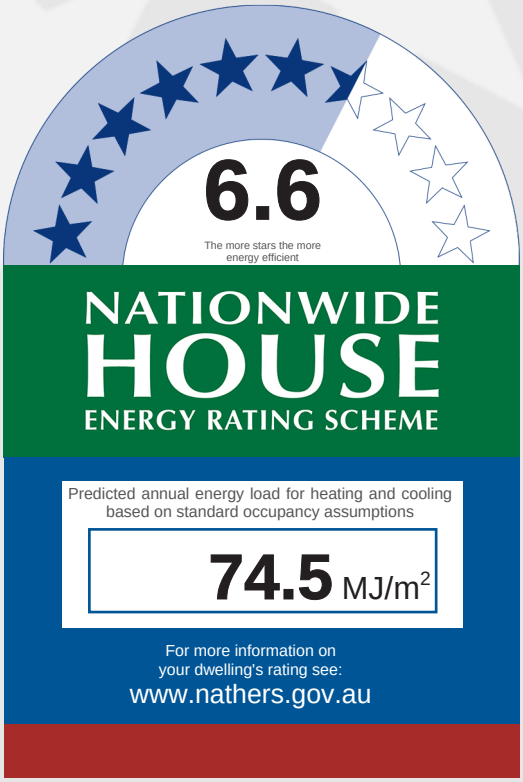
Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **A2OCPOH9YH** Date of Certificate: **29 Nov 2017** ★ Star rating: **6.6**

Assessor details

Accreditation number:	**20594**
Name:	**Suruchi Pathak**
Organisation:	**Suruchi Pathak**
Email:	**suruchipathak@gmail.com**
Phone:	**0434220286**
Declaration of interest:	**No potential conflicts of interest to declare**
Software:	**FirstRate5: 5.2.7 (3.13)**
AAO:	**ABSA**



Overview

Dwelling details

Address:	**1004, 24-26 Railway Parade**		
Suburb:	**Westmead**		
State:	**NSW**	Postcode:	**2145**
Type:	**New Home**	NCC Class:	**Class 2**
Lot/DP number:	**1/952720**	NatHERS climate zone:	**28**
Exposure:	**exposed**		

Key construction and insulation materials

(see following pages for details)

Construction:	Wall:	**Alucobond Panel,Conc100+PB**
	Roof:	**Neighbour above**
	Floor:	**Concrete**
Insulation:	Wall:	**R2.5(Added to all external)**
	Roof:	**NA**
	Floor:	**R2.5(floor with air below)**
Glazing:		**Aluminum**
		Refer detailed report

Ceiling penetrations

(see following pages for details)

Sealed:	**26**
Unsealed:	**0**
TOTAL:**	**26**

Principal downlight type: **LED**

NOTE: This total is the maximum number of ceiling penetrations allowed to a ceiling (under a roof) for this certificate. **If this number is exceded in construction then this certificate IS NOT VALID and a new certificate is required. Loss of ceiling insulation for the penetrations listed has been taken into account with the rating.

Net floor area (m^2)

Conditioned:	**73.7**
Unconditioned:	**2.3**
Garage:	**-**
TOTAL:	**76**

Annual thermal performance loads (MJ/m^2)

Heating:	**29**
Cooling:	**45.5**
TOTAL:	**74.5**

Window selection - default windows only

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Building Features

Windows type and performance value

Window ID	Window type	U-value	SHGC
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27
ATB-003-04 B	Al Thermally Broken A DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27

Windows schedule

Window ID	Window no.	Height (mm)	Width (mm)	Orientation	Zone name	Outdoor shade
ATB-004-04 B	Opening 1	2660	1067	NNE	Kitchen/Living	No
ATB-003-04 B	Opening 2	2660	1220	NNE	Kitchen/Living	No
ATB-003-04 B	Opening 18	2660	1210	NNE	Kitchen/Living	No
ATB-004-04 B	Opening 16	2660	1355	WNW	Kitchen/Living	No
ATB-004-04 B	Opening 25	2660	1365	WNW	Kitchen/Living	No
ATB-004-04 B	Opening 8	2660	2200	SSW	Kitchen/Living	No
ATB-004-04 B	Opening 5	2660	2954	WNW	Bedroom 2	No
ATB-004-04 B	Opening 19	2660	1541	NNE	Circulation	No
ATB-004-04 B	Opening 3	2660	1075	NNE	Bedroom 1	No
ATB-003-04 B	Opening 20	2660	1075	NNE	Bedroom 1	No

Roof windows and skylight type and performance value

ID	Window type	U-value	SHGC

Roof window and skylight schedule

ID	Roof window/ skylight no.	Area (m^2)	Orientation	Zone name	Outdoor shade	Indoor shade/ diffuser

External wall type

Type	Insulation	Wall wrap
1 : Alcubond	Polystyrene extruded: R2.5 (R2.5)	No
2 : FR5 - Cast Concrete	Polystyrene extruded: R2.5 (R2.5)	No
3 : FR5 - Concrete Block Solid/Core Filled		No

External wall schedule

Wall type	Area (m^2)	Orientation	Zone name	Fixed shade	Eaves
1 : Alcubond	15.9	NNE	Kitchen/Living	No	No
1 : Alcubond	10.6	WNW	Kitchen/Living	No	No

Building Features

2 : FR5 - Cast Concrete	6.4	SSW	Kitchen/Living	Yes	Yes
2 : FR5 - Cast Concrete	3.6	WNW	Kitchen/Living	Yes	Yes
2 : FR5 - Cast Concrete	3.1	ESE	Kitchen/Living	Yes	No
2 : FR5 - Cast Concrete	7.9	WNW	Bedroom 2	Yes	Yes
3 : FR5 - Concrete Block Solid/Core Filled	9.5	SSW	Bedroom 2	No	No
2 : FR5 - Cast Concrete	4.3	NNE	Circulation	Yes	No
3 : FR5 - Concrete Block Solid/Core Filled	4.1	SSW	Circulation	No	No
1 : Alcubond	8.5	NNE	Bedroom 1	No	No
2 : FR5 - Cast Concrete	3.1	WNW	Bedroom 1	Yes	No
3 : FR5 - Concrete Block Solid/Core Filled	9.5	ESE	Bedroom 1	No	No
3 : FR5 - Concrete Block Solid/Core Filled	4.9	ESE	ENS	No	No
3 : FR5 - Concrete Block Solid/Core Filled	8.5	SSW	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	7.1	ESE	Bath	No	No

Internal wall type

Type	Area (m^2)	Insulation
1 : FR5 - Internal Plasterboard Stud Wall	72	

Floors

Location	Construction	Area (m^2)	Sub floor ventilation	Added insulation	Covering
Kitchen/Living	SuspSlab : 150mm: 150mm concrete slab	28.1	Enclosed	0.0	floattimber
Bedroom 2	SuspSlab : 150mm: 150mm concrete slab	10.7	Enclosed	0.0	Carpet
Circulation	SuspSlab : 150mm: 150mm concrete slab	11.4	Enclosed	0.0	floattimber
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ENS	SuspSlab : 150mm: 150mm concrete slab	5.1	Enclosed	0.0	Tiles
Bath	SuspSlab : 150mm: 150mm concrete slab	7.1	Enclosed	0.0	Tiles
L'dry	SuspSlab : 150mm: 150mm concrete slab	2.3	Enclosed	0.0	Tiles

Ceiling type

Building Features

Location	Material	Added insulation	Roof space above

Ceiling penetrations

Location	Number	Type	Width (mm)	Length (mm)	Seal/ unsealed
Kitchen/Living	12	Downlights	50	50	Sealed
Kitchen/Living	1	Exhaust Fans	180	180	Sealed
Bedroom 2	4	Downlights	50	50	Sealed
Circulation	4	Downlights	50	50	Sealed
Bedroom 1	4	Downlights	50	50	Sealed
Bath	1	Exhaust Fans	180	180	Sealed

Ceiling fans

Location	Number	Diameter (mm)

Roof type

Material	Added insulation	Roof colour
Ceil: Ceiling	0.0	light

Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **A2OCPOH9YH** Date of Certificate: **29 Nov 2017** ★ Star rating: **6.6**

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Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **VVBZW7IN2U** Date of Certificate: **29 Nov 2017** ★ Star rating: **6.9**

Assessor details

Accreditation number:	**20594**
Name:	**Suruchi Pathak**
Organisation:	**Suruchi Pathak**
Email:	**suruchipathak@gmail.com**
Phone:	**0434220286**
Declaration of interest:	**No potential conflicts of interest to declare**
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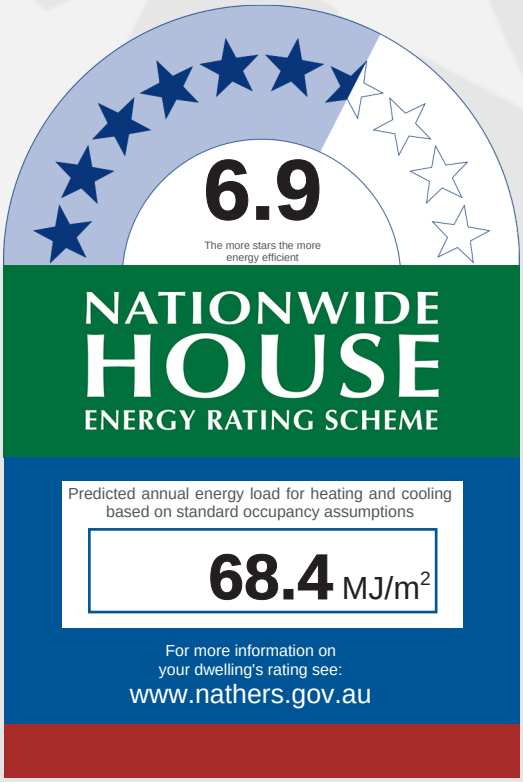

Overview

Dwelling details

Address:	**1005, 24-26 Railway Parade**		
Suburb:	**Westmead**		
State:	**NSW**	Postcode:	**2145**
Type:	**New Home**	NCC Class:	**Class 2**
Lot/DP number:	**1/952720**	NatHERS climate zone:	**28**
Exposure:	**exposed**		

Key construction and insulation materials

(see following pages for details)

Construction:	Wall:	**Alucobond Panel,Conc100+PB**
	Roof:	**Neighbour above**
	Floor:	**Concrete**
Insulation:	Wall:	**R2.5(Added to all external)**
	Roof:	**NA**
	Floor:	**R2.5(floor with air below)**
Glazing:		**Aluminum**
		Refer detailed report

Ceiling penetrations

(see following pages for details)

Sealed:	**27**
Unsealed:	**0**
TOTAL:**	**27**

Principal downlight type: **LED**

NOTE: This total is the maximum number of ceiling penetrations allowed to a ceiling (under a roof) for this certificate. **If this number is exceded in construction then this certificate IS NOT VALID and a new certificate is required. Loss of ceiling insulation for the penetrations listed has been taken into account with the rating.

Net floor area (m^2)

Conditioned:	**73.7**
Unconditioned:	**2.3**
Garage:	**-**
TOTAL:	**76**

Annual thermal performance loads (MJ/m^2)

Heating:	**28**
Cooling:	**40.4**
TOTAL:	**68.4**

Plan documents

Plan ref/date:	**16-021 DA151-Rev5-3.10.2017**
Prepared by:	**Sissons Architects**

Window selection - default windows only

Note on allowable window values: Only a 5% tolerance to the nominated SHGC window values shown on page 2 can be used with this rating.

Note: Only a +/-5% SHGC tolerance is allowed with this rating.

NB: This tolerance ONLY applies to SHGC, the U-value can always be lower but not higher than the values stated on page 2.

If any of the windows selected are outside the 5% tolerance then this certificate is no longer valid and the dwelling will need to be rerated to confirm compliance.

Scan to access this certificate online and confirm this is valid.

https://www.fr5.com.au/QRCodeLanding?PublicId=VVBZW7IN2U

* Nationwide House Energy Rating Scheme (NatHERS) is an initiative of the Australian, state and territory governments. For more details see www.nathers.gov.au

Building Features

Windows type and performance value

Window ID	Window type	U-value	SHGC
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27
ATB-003-04 B	Al Thermally Broken A DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27

Windows schedule

Window ID	Window no.	Height (mm)	Width (mm)	Orientation	Zone name	Outdoor shade
ATB-004-04 B	Opening 8	2660	2200	SSW	Kitchen/Living	No
ATB-004-04 B	Opening 16	2660	1355	ESE	Kitchen/Living	No
ATB-004-04 B	Opening 24	2660	1365	ESE	Kitchen/Living	No
ATB-004-04 B	Opening 1	2660	1067	NNE	Kitchen/Living	No
ATB-003-04 B	Opening 2	2660	1220	NNE	Kitchen/Living	No
ATB-003-04 B	Opening 18	2660	1210	NNE	Kitchen/Living	No
ATB-004-04 B	Opening 5	2660	2954	ESE	Bedroom 2	No
ATB-004-04 B	Opening 19	2660	1541	NNE	Circulation	No
ATB-004-04 B	Opening 3	2660	1075	NNE	Bedroom 1	No
ATB-003-04 B	Opening 20	2660	1075	NNE	Bedroom 1	No

Roof windows and skylight type and performance value

ID	Window type	U-value	SHGC

Roof window and skylight schedule

ID	Roof window/ skylight no.	Area (m^2)	Orientation	Zone name	Outdoor shade	Indoor shade/ diffuser

External wall type

Type	Insulation	Wall wrap
1 : FR5 - Cast Concrete	Polystyrene extruded: R2.5 (R2.5)	No
2 : Alcubond	Polystyrene extruded: R2.5 (R2.5)	No
3 : FR5 - Concrete Block Solid/Core Filled		No

External wall schedule

Wall type	Area (m^2)	Orientation	Zone name	Fixed shade	Eaves
1 : FR5 - Cast Concrete	3.1	WNW	Kitchen/Living	Yes	No
1 : FR5 - Cast Concrete	3.6	ESE	Kitchen/Living	No	Yes

Building Features

1 : FR5 - Cast Concrete	6.4	SSW	Kitchen/Living	Yes	Yes
2 : Alcubond	10.6	ESE	Kitchen/Living	No	No
2 : Alcubond	15.9	NNE	Kitchen/Living	No	No
3 : FR5 - Concrete Block Solid/Core Filled	9.5	SSW	Bedroom 2	No	No
1 : FR5 - Cast Concrete	7.9	ESE	Bedroom 2	No	Yes
3 : FR5 - Concrete Block Solid/Core Filled	4.1	SSW	Circulation	No	No
1 : FR5 - Cast Concrete	4.3	NNE	Circulation	Yes	No
3 : FR5 - Concrete Block Solid/Core Filled	9.5	WNW	Bedroom 1	No	No
1 : FR5 - Cast Concrete	3.1	ESE	Bedroom 1	Yes	No
2 : Alcubond	8.5	NNE	Bedroom 1	No	No
3 : FR5 - Concrete Block Solid/Core Filled	4.9	WNW	ENS	No	No
3 : FR5 - Concrete Block Solid/Core Filled	7.1	WNW	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	8.5	SSW	Bath	No	No

Internal wall type

Type	Area (m^2)	Insulation
1 : FR5 - Internal Plasterboard Stud Wall	72	

Floors

Location	Construction	Area (m^2)	Sub floor ventilation	Added insulation	Covering
Kitchen/Living	SuspSlab : 150mm: 150mm concrete slab	28.2	Enclosed	0.0	floattimber
Bedroom 2	SuspSlab : 150mm: 150mm concrete slab	10.7	Enclosed	0.0	Carpet
Circulation	SuspSlab : 150mm: 150mm concrete slab	11.4	Enclosed	0.0	floattimber
Bedroom 1	SuspSlab : 150mm: 150mm concrete slab	11.3	Enclosed	0.0	Carpet
ENS	SuspSlab : 150mm: 150mm concrete slab	5.1	Enclosed	0.0	Tiles
Bath	SuspSlab : 150mm: 150mm concrete slab	7.1	Enclosed	0.0	Tiles
L'dry	SuspSlab : 150mm: 150mm concrete slab	2.3	Enclosed	0.0	Tiles

Ceiling type

Building Features

Location	Material	Added insulation	Roof space above

Ceiling penetrations

Location	Number	Type	Width (mm)	Length (mm)	Seal/ unsealed
Kitchen/Living	12	Downlights	50	50	Sealed
Kitchen/Living	2	Exhaust Fans	180	180	Sealed
Bedroom 2	4	Downlights	50	50	Sealed
Circulation	4	Downlights	50	50	Sealed
Bedroom 1	4	Downlights	50	50	Sealed
Bath	1	Exhaust Fans	180	180	Sealed

Ceiling fans

Location	Number	Diameter (mm)

Roof type

Material	Added insulation	Roof colour
Ceil: Ceiling	0.0	light

Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **VVBZW7IN2U** Date of Certificate: **29 Nov 2017** ★ Star rating: **6.9**

Additional information

Explanatory notes

About this report

Residential energy ratings address the quality of the building fabric i.e. walls, windows, floors and roof/ceilings. Ratings do not cover the energy or water efficiency of appliances including heating and cooling, hot water, dishwashers, ovens, fridges, TVs etc. or solar panel or water tank requirements. The efficiency or specification of these items is generally covered by other regulations, standards or guidelines.

General Information

A NatHERS House Energy Rating is a comprehensive, dynamic computer modelling evaluation of the floorplans, elevations and specifications to predict an energy load of a home. Not all of us use our homes in the same way, so ratings are generated using standard assumptions. This means homes can be compared across the country.

The actual energy consumption of your home may vary significantly from the predicted energy load figures in this report depending on issues such as the size of your household and your personal preferences, e.g. in terms of heating or cooling.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparative purposes between different house designs and for demonstrating that the design meets the required regulatory compliance.

Homes that are energy efficient use less energy, are warmer in winter, cooler in summer and cost less to run. The higher the star rating the more energy efficient.

This NatHERS House Energy Rating report was carefully prepared by your assessor on the basis of comprehensive modelling using standard procedures to rate your home using an underlying engine developed by the Australian Commonwealth Scientific and Industrial Research Organisation (CSIRO).

All information relating to energy loads presented in this report is based on a range of standard assumptions in order to allow for comparisons with reports prepared for other homes and to demonstrate minimum regulatory compliance. The standard assumptions include figures for occupancy, indoor air temperature and are based on a unique climate file for your region.

Accredited Assessors

To ensure you get a high-quality, professional NatHERS House Energy Rating report, you should always use an accredited assessor, 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. Non-accredited assessors do not have this level of quality assurance or any on-going training requirements.

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If your assessor is unable to address your questions or concerns, please contact their AAO listed under ‘assessor details’. You can also find a range of information about accredited assessors on the AAO websites.

Disclaimer

The energy values quoted are for comparison purposes only; they are not a prediction of actual energy use. This rating only applies to the floor plan, construction details, orientation and climate as submitted and included in the attached drawing set that bears a stamp with the same number as this certificate. Changes to any of these details could affect the rating.

Contact

For more information on the Nationwide House Energy Rating Scheme (NatHERS), visit www.nathers.gov.au

For more information on energy efficient design and insulation visit www.yourhome.gov.au

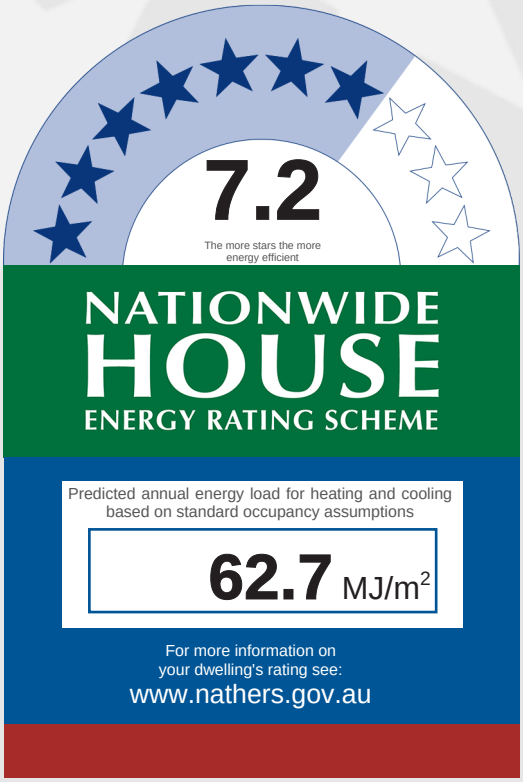
* Nationwide House Energy Rating Scheme (NatHERS) is an initiative of the Australian, state and territory governments. For more details see www.nathers.gov.au

Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **YYVMG8OYFE** Date of Certificate: **29 Nov 2017** ★ Star rating: **7.2**

Assessor details

Accreditation number:	**20594**
Name:	**Suruchi Pathak**
Organisation:	**Suruchi Pathak**
Email:	**suruchipathak@gmail.com**
Phone:	**0434220286**
Declaration of interest:	**No potential conflicts of interest to declare**
Software:	**FirstRate5: 5.2.7 (3.13)**
AAO:	**ABSA**



Overview

Dwelling details

Address:	**1006, 24-26 Railway Parade**		
Suburb:	**Westmead**		
State:	**NSW**	Postcode:	**2145**
Type:	**New Home**	NCC Class:	**Class 2**
Lot/DP number:	**1/952720**	NatHERS climate zone:	**28**
Exposure:	**exposed**		

Key construction and insulation materials

(see following pages for details)

Construction:	Wall:	**Alucobond Panel,Conc100+PB**
	Roof:	**Neighbour above**
	Floor:	**Concrete**
Insulation:	Wall:	**R2.5(Added to all external)**
	Roof:	**NA**
	Floor:	**NA**
Glazing:		**Aluminum**
		Refer detailed report

Ceiling penetrations

(see following pages for details)

Sealed:	**20**
Unsealed:	**0**
TOTAL:**	**20**

Principal downlight type: **LED**

NOTE: This total is the maximum number of ceiling penetrations allowed to a ceiling (under a roof) for this certificate. **If this number is exceded in construction then this certificate IS NOT VALID and a new certificate is required. Loss of ceiling insulation for the penetrations listed has been taken into account with the rating.

Net floor area (m^2)

Conditioned:	**47.5**
Unconditioned:	**4.7**
Garage:	**-**
TOTAL:	**52.2**

Annual thermal performance loads (MJ/m^2)

Heating:	**26.3**
Cooling:	**36.4**
TOTAL:	**62.7**

Window selection - default windows only

Note on allowable window values: Only a 5% tolerance to the nominated SHGC window values shown on page 2 can be used with this rating.

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Plan documents

Plan ref/date:	**16-021 DA151-Rev5-3.10.2017**
Prepared by:	**Sissons Architects**

Building Features

Windows type and performance value

Window ID	Window type	U-value	SHGC
ATB-003-04 B	Al Thermally Broken A DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27

Windows schedule

Window ID	Window no.	Height (mm)	Width (mm)	Orientation	Zone name	Outdoor shade
ATB-003-04 B	Opening 28	2660	1415	ESE	Kitchen/Living 8	No
ATB-004-04 B	Opening 52	2660	1385	ESE	Kitchen/Living 8	No
ATB-004-04 B	Opening 41	2660	2098	NNE	Kitchen/Living 8	No
ATB-004-04 B	Opening 49	2660	3000	ESE	Kitchen/Living 8	No
ATB-003-04 B	Opening 29	2660	1080	ESE	Bedroom	No
ATB-004-04 B	Opening 50	2660	1070	ESE	Bedroom	No

Roof windows and skylight type and performance value

ID	Window type	U-value	SHGC

Roof window and skylight schedule

ID	Roof window/ skylight no.	Area (m^2)	Orientation	Zone name	Outdoor shade	Indoor shade/ diffuser

External wall type

Type	Insulation	Wall wrap
1 : Alcubond	Polystyrene extruded: R2.5 (R2.5)	No
2 : FR5 - Cast Concrete	Polystyrene extruded: R2.5 (R2.5)	No
3 : FR5 - Concrete Block Solid/Core Filled		No

External wall schedule

Wall type	Area (m^2)	Orientation	Zone name	Fixed shade	Eaves
1 : Alcubond	11	ESE	Kitchen/Living 8	No	No
2 : FR5 - Cast Concrete	6.4	NNE	Kitchen/Living 8	Yes	No
2 : FR5 - Cast Concrete	8.5	ESE	Kitchen/Living 8	Yes	Yes
3 : FR5 - Concrete Block Solid/Core Filled	2	NNE	Kitchen/Living 8	No	No
3 : FR5 - Concrete Block Solid/Core Filled	19.5	WNW	Kitchen/Living 8	No	No
3 : FR5 - Concrete Block Solid/Core Filled	12.8	SSW	Kitchen/Living 8	No	No

Building Features

2 : FR5 - Cast Concrete	3.2	SSW	Kitchen/Living 8	No	No
1 : Alcubond	8.1	ESE	Bedroom	No	No
2 : FR5 - Cast Concrete	6.4	NNE	Bedroom	No	No
3 : FR5 - Concrete Block Solid/Core Filled	3.2	NNE	Bedroom	No	No
2 : FR5 - Cast Concrete	6.4	SSW	Bedroom	Yes	No
3 : FR5 - Concrete Block Solid/Core Filled	4.1	NNE	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	8	WNW	Bath	No	No

Internal wall type

Type	Area (m^2)	Insulation
1 : FR5 - Internal Plasterboard Stud Wall	15.4	

Floors

Location	Construction	Area (m^2)	Sub floor ventilation	Added insulation	Covering
Kitchen/Living 8	SuspSlab : 150mm: 150mm concrete slab	36.5	Enclosed	0.0	floattimber
Bedroom	SuspSlab : 150mm: 150mm concrete slab	11	Enclosed	0.0	Carpet
Bath	SuspSlab : 150mm: 150mm concrete slab	4.7	Enclosed	0.0	Tiles

Ceiling type

Location	Material	Added insulation	Roof space above

Ceiling penetrations

Location	Number	Type	Width (mm)	Length (mm)	Seal/ unsealed
Kitchen/Living 8	1	Exhaust Fans	180	180	Sealed
Kitchen/Living 8	14	Downlights	50	50	Sealed
Bedroom	4	Downlights	50	50	Sealed
Bath	1	Exhaust Fans	180	180	Sealed

Ceiling fans

Location	Number	Diameter (mm)

Roof type

Building Features

Material	Added insulation	Roof colour
Ceil: Ceiling	0.0	medium

Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **YYVMG8OYFE** Date of Certificate: **29 Nov 2017** ★ Star rating: **7.2**

Additional information

Explanatory notes

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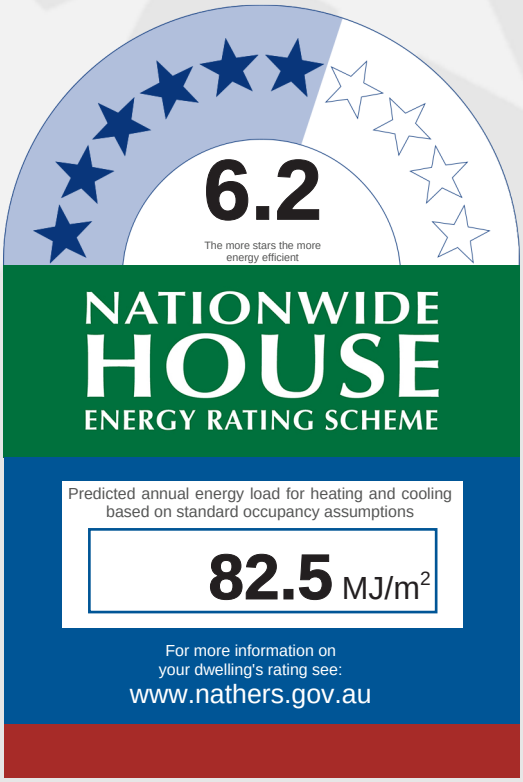
Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **VB973N8LMM** Date of Certificate: **4 Dec 2017** ★ Star rating: **6.2**

Assessor details

Accreditation number:	**20594**
Name:	**Suruchi Pathak**
Organisation:	**Suruchi Pathak**
Email:	**suruchipathak@gmail.com**
Phone:	**0434220286**
Declaration of interest:	**No potential conflicts of interest to declare**
Software:	**FirstRate5: 5.2.7 (3.13)**
AAO:	**ABSA**



Overview

Dwelling details

Address:	**1101, 24-26 Railway Parade**		
Suburb:	**Westmead**		
State:	**NSW**	Postcode:	**2145**
Type:	**New Home**	NCC Class:	**Class 2**
Lot/DP number:	**1/952720**	NatHERS climate zone:	**28**
Exposure:	**exposed**		

Key construction and insulation materials

(see following pages for details)

Construction:	Wall:	**Alucobond Panel,Conc100+PB**
	Roof:	**Neighbour above**
	Floor:	**Concrete**
Insulation:	Wall:	**R2.5(Added to all external)**
	Roof:	**NA**
	Floor:	**NA**
Glazing:		**Aluminum**
		Refer detailed report

Ceiling penetrations

(see following pages for details)

Sealed:	**26**
Unsealed:	**0**
TOTAL:**	**26**

Principal downlight type: **LED**

NOTE: This total is the maximum number of ceiling penetrations allowed to a ceiling (under a roof) for this certificate. **If this number is exceded in construction then this certificate IS NOT VALID and a new certificate is required. Loss of ceiling insulation for the penetrations listed has been taken into account with the rating.

Net floor area (m^2)

Conditioned:	**72.3**
Unconditioned:	**2.3**
Garage:	**-**
TOTAL:	**74.6**

Annual thermal performance loads (MJ/m^2)

Heating:	**46.4**
Cooling:	**36.1**
TOTAL:	**82.5**

Window selection - default windows only

Note on allowable window values: Only a 5% tolerance to the nominated SHGC window values shown on page 2 can be used with this rating.

Note: Only a +/-5% SHGC tolerance is allowed with this rating.

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Plan documents

Plan ref/date:	**16-021 DA151-Rev5-3.10.2017**
Prepared by:	**Sissons Architects**

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https://www.fr5.com.au/QRCodeLanding?PublicId=VB973N8LMM

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Building Features

Windows type and performance value

Window ID	Window type	U-value	SHGC
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27
ATB-003-04 B	Al Thermally Broken A DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27

Windows schedule

Window ID	Window no.	Height (mm)	Width (mm)	Orientation	Zone name	Outdoor shade
ATB-004-04 B	Opening 1	2660	1200	SSW	Kitchen/Living	No
ATB-003-04 B	Opening 2	2660	1220	SSW	Kitchen/Living	No
ATB-003-04 B	Opening 18	2660	1210	SSW	Kitchen/Living	No
ATB-004-04 B	Opening 16	2660	1355	ESE	Kitchen/Living	No
ATB-004-04 B	Opening 24	2660	1365	ESE	Kitchen/Living	No
ATB-004-04 B	Opening 8	2660	2200	NNE	Kitchen/Living	No
ATB-004-04 B	Opening 5	2660	2960	ESE	Bedroom 2	No
ATB-004-04 B	Opening 19	2660	1560	SSW	Circulation	No
ATB-004-04 B	Opening 3	2660	1075	SSW	Bedroom 1	No
ATB-003-04 B	Opening 20	2660	1075	SSW	Bedroom 1	No

Roof windows and skylight type and performance value

ID	Window type	U-value	SHGC

Roof window and skylight schedule

ID	Roof window/ skylight no.	Area (m^2)	Orientation	Zone name	Outdoor shade	Indoor shade/ diffuser

External wall type

Type	Insulation	Wall wrap
1 : Alcubond	Polystyrene extruded: R2.5 (R2.5)	No
2 : FR5 - Cast Concrete	Polystyrene extruded: R2.5 (R2.5)	No
3 : FR5 - Concrete Block Solid/Core Filled		No

External wall schedule

Wall type	Area (m^2)	Orientation	Zone name	Fixed shade	Eaves
1 : Alcubond	15.9	SSW	Kitchen/Living	No	No
1 : Alcubond	10.6	ESE	Kitchen/Living	No	No

Building Features

2 : FR5 - Cast Concrete	6.4	NNE	Kitchen/Living	Yes	Yes
2 : FR5 - Cast Concrete	3.6	ESE	Kitchen/Living	Yes	Yes
2 : FR5 - Cast Concrete	3.1	WNW	Kitchen/Living	Yes	No
2 : FR5 - Cast Concrete	7.9	ESE	Bedroom 2	Yes	Yes
3 : FR5 - Concrete Block Solid/Core Filled	9.5	NNE	Bedroom 2	No	No
2 : FR5 - Cast Concrete	4.3	SSW	Circulation	Yes	No
3 : FR5 - Concrete Block Solid/Core Filled	4.1	NNE	Circulation	No	No
1 : Alcubond	8.5	SSW	Bedroom 1	No	No
2 : FR5 - Cast Concrete	3.1	ESE	Bedroom 1	Yes	No
3 : FR5 - Concrete Block Solid/Core Filled	9.5	WNW	Bedroom 1	No	No
3 : FR5 - Concrete Block Solid/Core Filled	4.9	WNW	ENS	No	No
3 : FR5 - Concrete Block Solid/Core Filled	5.1	NNE	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	2.3	WNW	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	3.3	NNE	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	4.9	WNW	Bath	No	No

Internal wall type

Type	Area (m^2)	Insulation
1 : FR5 - Internal Plasterboard Stud Wall	72	

Floors

Location	Construction	Area (m^2)	Sub floor ventilation	Added insulation	Covering
Kitchen/Living	SuspSlab : 150mm: 150mm concrete slab	27.9	Enclosed	0.0	floattimber
Bedroom 2	SuspSlab : 150mm: 150mm concrete slab	10.7	Enclosed	0.0	Carpet
Circulation	SuspSlab : 150mm: 150mm concrete slab	11.4	Enclosed	0.0	floattimber
Bedroom 1	SuspSlab : 150mm: 150mm concrete slab	11.1	Enclosed	0.0	Carpet
ENS	SuspSlab : 150mm: 150mm concrete slab	5.1	Enclosed	0.0	Tiles
Bath	SuspSlab : 150mm: 150mm concrete slab	6	Enclosed	0.0	Tiles
L'dry	SuspSlab : 150mm: 150mm concrete slab	2.3	Enclosed	0.0	Tiles

Building Features

Ceiling type

Location	Material	Added insulation	Roof space above

Ceiling penetrations

Location	Number	Type	Width (mm)	Length (mm)	Seal/ unsealed
Kitchen/Living	12	Downlights	50	50	Sealed
Kitchen/Living	1	Exhaust Fans	180	180	Sealed
Bedroom 2	4	Downlights	50	50	Sealed
Circulation	4	Downlights	50	50	Sealed
Bedroom 1	4	Downlights	50	50	Sealed
Bath	1	Exhaust Fans	180	180	Sealed

Ceiling fans

Location	Number	Diameter (mm)

Roof type

Material	Added insulation	Roof colour
Ceil: Ceiling	0.0	light

Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **VB973N8LMM** Date of Certificate: **4 Dec 2017** ★ Star rating: **6.2**

Additional information

Explanatory notes

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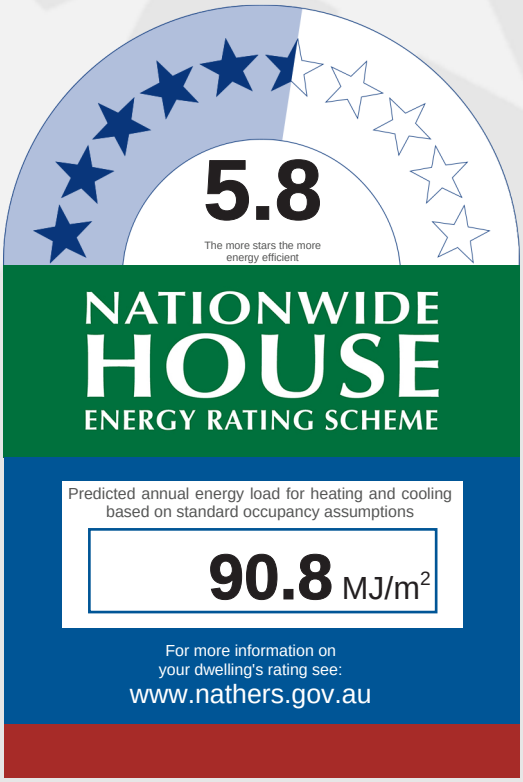
Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **HVFXPUZMIN** Date of Certificate: **4 Dec 2017** ★ Star rating: **5.8**

Assessor details

Accreditation number:	**20594**
Name:	**Suruchi Pathak**
Organisation:	**Suruchi Pathak**
Email:	**suruchipathak@gmail.com**
Phone:	**0434220286**
Declaration of interest:	**No potential conflicts of interest to declare**
Software:	**FirstRate5: 5.2.7 (3.13)**
AAO:	**ABSA**



Overview

Dwelling details

Address:	**1102, 24-26 Railway Parade**		
Suburb:	**Westmead**		
State:	**NSW**	Postcode:	**2145**
Type:	**New Home**	NCC Class:	**Class 2**
Lot/DP number:	**1/952720**	NatHERS climate zone:	**28**
Exposure:	**exposed**		

Key construction and insulation materials

(see following pages for details)

Construction:	Wall:	**Alucobond Panel,Conc100+PB**
	Roof:	**Neighbour above**
	Floor:	**Concrete**
Insulation:	Wall:	**R2.5(Added to all external)**
	Roof:	**NA**
	Floor:	**NA**
Glazing:		**Aluminum**
		Refer detailed report

Ceiling penetrations

(see following pages for details)

Sealed:	**24**
Unsealed:	**0**
TOTAL:**	**24**

Principal downlight type: **LED**

NOTE: This total is the maximum number of ceiling penetrations allowed to a ceiling (under a roof) for this certificate. **If this number is exceded in construction then this certificate IS NOT VALID and a new certificate is required. Loss of ceiling insulation for the penetrations listed has been taken into account with the rating.

Net floor area (m^2)

Conditioned:	**72.6**
Unconditioned:	**2.3**
Garage:	**-**
TOTAL:	**74.9**

Annual thermal performance loads (MJ/m^2)

Heating:	**48.2**
Cooling:	**42.6**
TOTAL:	**90.8**

Window selection - default windows only

Note on allowable window values: Only a 5% tolerance to the nominated SHGC window values shown on page 2 can be used with this rating.

Note: Only a +/-5% SHGC tolerance is allowed with this rating.

NB: This tolerance ONLY applies to SHGC, the U-value can always be lower but not higher than the values stated on page 2.

If any of the windows selected are outside the 5% tolerance then this certificate is no longer valid and the dwelling will need to be rerated to confirm compliance.

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https://www.fr5.com.au/QRCodeLanding?PublicId=HVFXPUZMIN

Plan documents

Plan ref/date:	**16-021 DA151-Rev5-3.10.2017**
Prepared by:	**Sissons Architects**

* Nationwide House Energy Rating Scheme (NatHERS) is an initiative of the Australian, state and territory governments. For more details see www.nathers.gov.au

Building Features

Windows type and performance value

Window ID	Window type	U-value	SHGC
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27
ATB-003-04 B	Al Thermally Broken A DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27

Windows schedule

Window ID	Window no.	Height (mm)	Width (mm)	Orientation	Zone name	Outdoor shade
ATB-004-04 B	Opening 8	2660	2200	NNE	Kitchen/Living	No
ATB-004-04 B	Opening 16	2660	1355	WNW	Kitchen/Living	No
ATB-004-04 B	Opening 24	2660	1365	WNW	Kitchen/Living	No
ATB-004-04 B	Opening 1	2660	1067	SSW	Kitchen/Living	No
ATB-003-04 B	Opening 2	2660	1220	SSW	Kitchen/Living	No
ATB-003-04 B	Opening 18	2660	1210	SSW	Kitchen/Living	No
ATB-004-04 B	Opening 5	2660	2954	WNW	Bedroom 2	No
ATB-004-04 B	Opening 19	2660	1541	SSW	Circulation	No
ATB-004-04 B	Opening 3	2660	1075	SSW	Bedroom 1	No
ATB-003-04 B	Opening 20	2660	1075	SSW	Bedroom 1	No

Roof windows and skylight type and performance value

ID	Window type	U-value	SHGC

Roof window and skylight schedule

ID	Roof window/ skylight no.	Area (m^2)	Orientation	Zone name	Outdoor shade	Indoor shade/ diffuser

External wall type

Type	Insulation	Wall wrap
1 : FR5 - Cast Concrete	Polystyrene extruded: R2.5 (R2.5)	No
2 : Alcubond	Polystyrene extruded: R2.5 (R2.5)	No
3 : FR5 - Concrete Block Solid/Core Filled		No

External wall schedule

Wall type	Area (m^2)	Orientation	Zone name	Fixed shade	Eaves
1 : FR5 - Cast Concrete	3.1	ESE	Kitchen/Living	Yes	No
1 : FR5 - Cast Concrete	3.6	WNW	Kitchen/Living	No	Yes

Building Features

1 : FR5 - Cast Concrete	6.4	NNE	Kitchen/Living	Yes	Yes
2 : Alcubond	10.6	WNW	Kitchen/Living	No	No
2 : Alcubond	15.9	SSW	Kitchen/Living	No	No
3 : FR5 - Concrete Block Solid/Core Filled	9.5	NNE	Bedroom 2	No	No
1 : FR5 - Cast Concrete	7.9	WNW	Bedroom 2	No	Yes
3 : FR5 - Concrete Block Solid/Core Filled	4.1	NNE	Circulation	No	No
1 : FR5 - Cast Concrete	4.3	SSW	Circulation	Yes	No
3 : FR5 - Concrete Block Solid/Core Filled	9.5	ESE	Bedroom 1	No	No
1 : FR5 - Cast Concrete	3.1	WNW	Bedroom 1	Yes	No
2 : Alcubond	8.5	SSW	Bedroom 1	No	No
3 : FR5 - Concrete Block Solid/Core Filled	4.9	ESE	ENS	No	No
3 : FR5 - Concrete Block Solid/Core Filled	4.9	ESE	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	3.3	NNE	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	2.3	ESE	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	5.1	NNE	Bath	No	No

Internal wall type

Type	Area (m^2)	Insulation
1 : FR5 - Internal Plasterboard Stud Wall	72	

Floors

Location	Construction	Area (m^2)	Sub floor ventilation	Added insulation	Covering
Kitchen/Living	SuspSlab : 150mm: 150mm concrete slab	28.3	Enclosed	0.0	floattimber
Bedroom 2	SuspSlab : 150mm: 150mm concrete slab	10.7	Enclosed	0.0	Carpet
Circulation	SuspSlab : 150mm: 150mm concrete slab	11.4	Enclosed	0.0	floattimber
Bedroom 1	SuspSlab : 150mm: 150mm concrete slab	11.1	Enclosed	0.0	Carpet
ENS	SuspSlab : 150mm: 150mm concrete slab	5.1	Enclosed	0.0	Tiles
Bath	SuspSlab : 150mm: 150mm concrete slab	6	Enclosed	0.0	Tiles
L'dry	SuspSlab : 150mm: 150mm concrete slab	2.3	Enclosed	0.0	Tiles

Building Features

Ceiling type

Location	Material	Added insulation	Roof space above

Ceiling penetrations

Location	Number	Type	Width (mm)	Length (mm)	Seal/ unsealed
Kitchen/Living	10	Downlights	50	50	Sealed
Kitchen/Living	1	Exhaust Fans	180	180	Sealed
Bedroom 2	4	Downlights	50	50	Sealed
Circulation	4	Downlights	50	50	Sealed
Bedroom 1	4	Downlights	50	50	Sealed
Bath	1	Exhaust Fans	180	180	Sealed

Ceiling fans

Location	Number	Diameter (mm)

Roof type

Material	Added insulation	Roof colour
Ceil: Ceiling	0.0	light

Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **HVFXPUZMIN** Date of Certificate: **4 Dec 2017** ★ Star rating: **5.8**

Additional information

Explanatory notes

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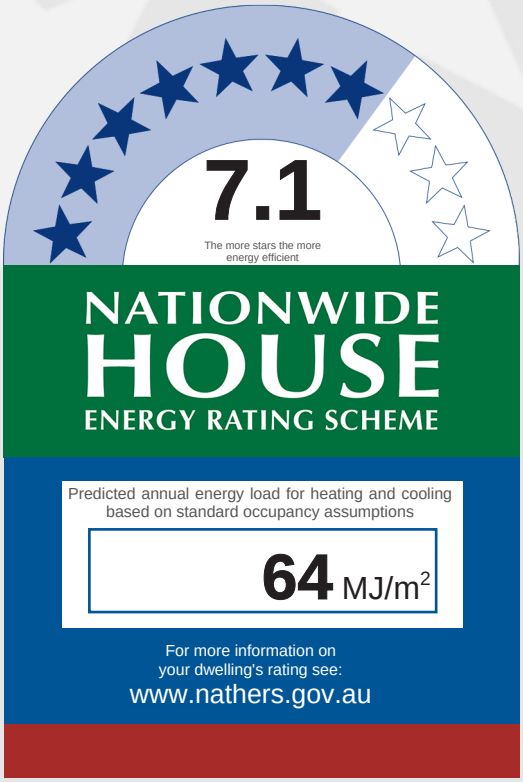
Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **MWQMVFI999** Date of Certificate: **4 Dec 2017** ★ Star rating: **7.1**

Assessor details

Accreditation number:	**20594**
Name:	**Suruchi Pathak**
Organisation:	**Suruchi Pathak**
Email:	**suruchipathak@gmail.com**
Phone:	**0434220286**
Declaration of interest:	**No potential conflicts of interest to declare**
Software:	**FirstRate5: 5.2.7 (3.13)**
AAO:	**ABSA**



Overview

Dwelling details

Address:	**1103, 24-26 Railway Parade**		
Suburb:	**Westmead**		
State:	**NSW**	Postcode:	**2145**
Type:	**New Home**	NCC Class:	**Class 2**
Lot/DP number:	**1/952720**	NatHERS climate zone:	**28**
Exposure:	**exposed**		

Key construction and insulation materials

(see following pages for details)

Construction:	Wall:	**Alucobond Panel,Conc100+PB**
	Roof:	**Neighbour above**
	Floor:	**Concrete**
Insulation:	Wall:	**R2.5(Added to all external)**
	Roof:	**NA**
	Floor:	**R2.5(floor with air below)**
Glazing:		**Aluminum**
		Refer detailed report

Ceiling penetrations

(see following pages for details)

Sealed:	**20**
Unsealed:	**0**
TOTAL:**	**20**

Principal downlight type: **LED**

NOTE: This total is the maximum number of ceiling penetrations allowed to a ceiling (under a roof) for this certificate. **If this number is exceded in construction then this certificate IS NOT VALID and a new certificate is required. Loss of ceiling insulation for the penetrations listed has been taken into account with the rating.

Net floor area (m^2)

Conditioned:	**47.5**
Unconditioned:	**4.7**
Garage:	**-**
TOTAL:	**52.2**

Annual thermal performance loads (MJ/m^2)

Heating:	**22.4**
Cooling:	**41.6**
TOTAL:	**64**

Window selection - default windows only

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Plan documents

Plan ref/date:	**16-021 DA151-Rev5-3.10.2017**
Prepared by:	**Sissons Architects**

Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **MWQMVFI999** Date of Certificate: **4 Dec 2017** ★ Star rating: **7.1**

Building Features

Windows type and performance value

Window ID	Window type	U-value	SHGC
ATB-006-04 B	Al Thermally Broken B DG Argon Fill Low Solar Gain low-E -Clear	3	0.26
ATB-005-04 B	Al Thermally Broken A DG Argon Fill Low Solar Gain low-E -Clear	3	0.27

Windows schedule

Window ID	Window no.	Height (mm)	Width (mm)	Orientation	Zone name	Outdoor shade
ATB-006-04 B	Opening 49	2660	3000	WNW	Kitchen/Living 8	No
ATB-006-04 B	Opening 41	2660	2220	NNE	Kitchen/Living 8	No
ATB-005-04 B	Opening 28	2660	1415	WNW	Kitchen/Living 8	No
ATB-006-04 B	Opening 53	2660	1385	WNW	Kitchen/Living 8	No
ATB-005-04 B	Opening 29	2660	1080	WNW	Bedroom	No
ATB-006-04 B	Opening 51	2660	1070	WNW	Bedroom	No

Roof windows and skylight type and performance value

ID	Window type	U-value	SHGC

Roof window and skylight schedule

ID	Roof window/ skylight no.	Area (m^2)	Orientation	Zone name	Outdoor shade	Indoor shade/ diffuser

External wall type

Type	Insulation	Wall wrap
1 : FR5 - Cast Concrete	Polystyrene extruded: R2.5 (R2.5)	No
2 : FR5 - Concrete Block Solid/Core Filled		No
3 : Alcubond	Polystyrene extruded: R2.5 (R2.5)	No

External wall schedule

Wall type	Area (m^2)	Orientation	Zone name	Fixed shade	Eaves
1 : FR5 - Cast Concrete	3.2	SSW	Kitchen/Living 8	No	No
2 : FR5 - Concrete Block Solid/Core Filled	12.8	SSW	Kitchen/Living 8	No	No
2 : FR5 - Concrete Block Solid/Core Filled	19.5	ESE	Kitchen/Living 8	No	No
2 : FR5 - Concrete Block Solid/Core Filled	2	NNE	Kitchen/Living 8	No	No
1 : FR5 - Cast Concrete	8.5	WNW	Kitchen/Living 8	Yes	Yes
1 : FR5 - Cast Concrete	6.4	NNE	Kitchen/Living 8	Yes	Yes

Building Features

3 : Alcubond	11	WNW	Kitchen/Living 8	No	No
1 : FR5 - Cast Concrete	6.4	SSW	Bedroom	Yes	No
2 : FR5 - Concrete Block Solid/Core Filled	3.2	NNE	Bedroom	No	No
1 : FR5 - Cast Concrete	6.4	NNE	Bedroom	No	No
3 : Alcubond	8.1	WNW	Bedroom	No	No
2 : FR5 - Concrete Block Solid/Core Filled	8	ESE	Bath	No	No
2 : FR5 - Concrete Block Solid/Core Filled	4.1	NNE	Bath	No	No

Internal wall type

Type	Area (m^2)	Insulation
1 : FR5 - Internal Plasterboard Stud Wall	15.4	

Floors

Location	Construction	Area (m^2)	Sub floor ventilation	Added insulation	Covering
Kitchen/Living 8	SuspSlab : 150mm: 150mm concrete slab	36.5	Enclosed	0.0	floattimber
Bedroom	SuspSlab : 150mm: 150mm concrete slab	11	Enclosed	0.0	Carpet
Bath	SuspSlab : 150mm: 150mm concrete slab	4.7	Enclosed	0.0	Tiles

Ceiling type

Location	Material	Added insulation	Roof space above

Ceiling penetrations

Location	Number	Type	Width (mm)	Length (mm)	Seal/ unsealed
Kitchen/Living 8	1	Exhaust Fans	180	180	Sealed
Kitchen/Living 8	14	Downlights	50	50	Sealed
Bedroom	4	Downlights	50	50	Sealed
Bath	1	Exhaust Fans	180	180	Sealed

Ceiling fans

Location	Number	Diameter (mm)

Roof type

Building Features

Material	Added insulation	Roof colour
Ceil: Ceiling	0.0	medium

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Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **1YDRZ68L4W** Date of Certificate: **4 Dec 2017** ★ Star rating: **6.6**

Assessor details

Accreditation number:	**20594**
Name:	**Suruchi Pathak**
Organisation:	**Suruchi Pathak**
Email:	**suruchipathak@gmail.com**
Phone:	**0434220286**
Declaration of interest:	**No potential conflicts of interest to declare**
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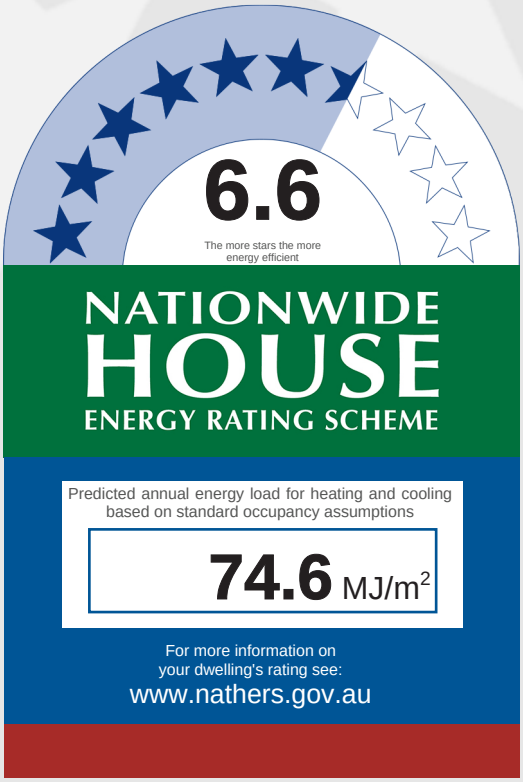

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State:	**NSW**	Postcode:	**2145**
Type:	**New Home**	NCC Class:	**Class 2**
Lot/DP number:	**1/952720**	NatHERS climate zone:	**28**
Exposure:	**exposed**		

Key construction and insulation materials

(see following pages for details)

Construction:	Wall:	**Alucobond Panel,Conc100+PB**
	Roof:	**Neighbour above**
	Floor:	**Concrete**
Insulation:	Wall:	**R2.5(Added to all external)**
	Roof:	**NA**
	Floor:	**NA**
Glazing:		**Aluminum**
		Refer detailed report

Ceiling penetrations

(see following pages for details)

Sealed:	**26**
Unsealed:	**0**
TOTAL:**	**26**

Principal downlight type: **LED**

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Net floor area (m^2)

Conditioned:	**73.7**
Unconditioned:	**2.3**
Garage:	**-**
TOTAL:	**76**

Annual thermal performance loads (MJ/m^2)

Heating:	**29.1**
Cooling:	**45.5**
TOTAL:	**74.6**

Plan documents

Plan ref/date:	**16-021 DA151-Rev5-3.10.2017**
Prepared by:	**Sissons Architects**

Window selection - default windows only

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Windows type and performance value

Window ID	Window type	U-value	SHGC
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ATB-003-04 B	Al Thermally Broken A DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27

Windows schedule

Window ID	Window no.	Height (mm)	Width (mm)	Orientation	Zone name	Outdoor shade
ATB-004-04 B	Opening 1	2660	1067	NNE	Kitchen/Living	No
ATB-003-04 B	Opening 2	2660	1220	NNE	Kitchen/Living	No
ATB-003-04 B	Opening 18	2660	1210	NNE	Kitchen/Living	No
ATB-004-04 B	Opening 16	2660	1355	WNW	Kitchen/Living	No
ATB-004-04 B	Opening 24	2660	1365	WNW	Kitchen/Living	No
ATB-004-04 B	Opening 8	2660	2200	SSW	Kitchen/Living	No
ATB-004-04 B	Opening 5	2660	2954	WNW	Bedroom 2	No
ATB-004-04 B	Opening 19	2660	1541	NNE	Circulation	No
ATB-004-04 B	Opening 3	2660	1075	NNE	Bedroom 1	No
ATB-003-04 B	Opening 20	2660	1075	NNE	Bedroom 1	No

Roof windows and skylight type and performance value

ID	Window type	U-value	SHGC

Roof window and skylight schedule

ID	Roof window/ skylight no.	Area (m^2)	Orientation	Zone name	Outdoor shade	Indoor shade/ diffuser

External wall type

Type	Insulation	Wall wrap
1 : Alcubond	Polystyrene extruded: R2.5 (R2.5)	No
2 : FR5 - Cast Concrete	Polystyrene extruded: R2.5 (R2.5)	No
3 : FR5 - Concrete Block Solid/Core Filled		No

External wall schedule

Wall type	Area (m^2)	Orientation	Zone name	Fixed shade	Eaves
1 : Alcubond	15.9	NNE	Kitchen/Living	No	No
1 : Alcubond	10.6	WNW	Kitchen/Living	No	No

Building Features

2 : FR5 - Cast Concrete	6.4	SSW	Kitchen/Living	Yes	Yes
2 : FR5 - Cast Concrete	3.6	WNW	Kitchen/Living	Yes	Yes
2 : FR5 - Cast Concrete	3.1	ESE	Kitchen/Living	Yes	No
2 : FR5 - Cast Concrete	7.9	WNW	Bedroom 2	Yes	Yes
3 : FR5 - Concrete Block Solid/Core Filled	9.5	SSW	Bedroom 2	No	No
2 : FR5 - Cast Concrete	4.3	NNE	Circulation	Yes	No
3 : FR5 - Concrete Block Solid/Core Filled	4.1	SSW	Circulation	No	No
1 : Alcubond	8.5	NNE	Bedroom 1	No	No
2 : FR5 - Cast Concrete	3.1	WNW	Bedroom 1	Yes	No
3 : FR5 - Concrete Block Solid/Core Filled	9.5	ESE	Bedroom 1	No	No
3 : FR5 - Concrete Block Solid/Core Filled	4.9	ESE	ENS	No	No
3 : FR5 - Concrete Block Solid/Core Filled	8.5	SSW	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	7.1	ESE	Bath	No	No

Internal wall type

Type	Area (m^2)	Insulation
1 : FR5 - Internal Plasterboard Stud Wall	72	

Floors

Location	Construction	Area (m^2)	Sub floor ventilation	Added insulation	Covering
Kitchen/Living	SuspSlab : 150mm: 150mm concrete slab	28.1	Enclosed	0.0	floattimber
Bedroom 2	SuspSlab : 150mm: 150mm concrete slab	10.7	Enclosed	0.0	Carpet
Circulation	SuspSlab : 150mm: 150mm concrete slab	11.4	Enclosed	0.0	floattimber
Bedroom 1	SuspSlab : 150mm: 150mm concrete slab	11.3	Enclosed	0.0	Carpet
ENS	SuspSlab : 150mm: 150mm concrete slab	5.1	Enclosed	0.0	Tiles
Bath	SuspSlab : 150mm: 150mm concrete slab	7.1	Enclosed	0.0	Tiles
L'dry	SuspSlab : 150mm: 150mm concrete slab	2.3	Enclosed	0.0	Tiles

Ceiling type

Building Features

Location	Material	Added insulation	Roof space above

Ceiling penetrations

Location	Number	Type	Width (mm)	Length (mm)	Seal/ unsealed
Kitchen/Living	12	Downlights	50	50	Sealed
Kitchen/Living	1	Exhaust Fans	180	180	Sealed
Bedroom 2	4	Downlights	50	50	Sealed
Circulation	4	Downlights	50	50	Sealed
Bedroom 1	4	Downlights	50	50	Sealed
Bath	1	Exhaust Fans	180	180	Sealed

Ceiling fans

Location	Number	Diameter (mm)

Roof type

Material	Added insulation	Roof colour
Ceil: Ceiling	0.0	light

Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **1YDRZ68L4W** Date of Certificate: **4 Dec 2017** ★ Star rating: **6.6**

Additional information

Explanatory notes

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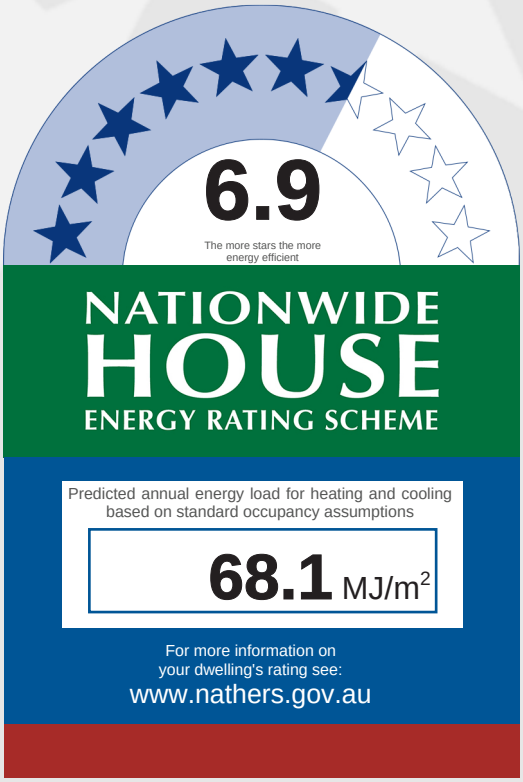
Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **LZNJSSGDP5** Date of Certificate: **4 Dec 2017** ★ Star rating: **6.9**

Assessor details

Accreditation number:	**20594**
Name:	**Suruchi Pathak**
Organisation:	**Suruchi Pathak**
Email:	**suruchipathak@gmail.com**
Phone:	**0434220286**
Declaration of interest:	**No potential conflicts of interest to declare**
Software:	**FirstRate5: 5.2.7 (3.13)**
AAO:	**ABSA**



Overview

Dwelling details

Address:	**1105, 24-26 Railway Parade**		
Suburb:	**Westmead**		
State:	**NSW**	Postcode:	**2145**
Type:	**New Home**	NCC Class:	**Class 2**
Lot/DP number:	**1/952720**	NatHERS climate zone:	**28**
Exposure:	**exposed**		

Key construction and insulation materials

(see following pages for details)

Construction:	Wall:	**Alucobond Panel,Conc100+PB**
	Roof:	**Neighbour above**
	Floor:	**Concrete**
Insulation:	Wall:	**R2.5(Added to all external)**
	Roof:	**NA**
	Floor:	**NA**
Glazing:		**Aluminum**
		Refer detailed report

Ceiling penetrations

(see following pages for details)

Sealed:	**27**
Unsealed:	**0**
TOTAL:**	**27**

Principal downlight type: **LED**

NOTE: This total is the maximum number of ceiling penetrations allowed to a ceiling (under a roof) for this certificate. **If this number is exceded in construction then this certificate IS NOT VALID and a new certificate is required. Loss of ceiling insulation for the penetrations listed has been taken into account with the rating.

Net floor area (m^2)

Conditioned:	**73.7**
Unconditioned:	**2.3**
Garage:	**-**
TOTAL:	**76**

Annual thermal performance loads (MJ/m^2)

Heating:	**28**
Cooling:	**40.1**
TOTAL:	**68.1**

Plan documents

Plan ref/date:	**16-021 DA151-Rev5-3.10.2017**
Prepared by:	**Sissons Architects**

Window selection - default windows only

Note on allowable window values: Only a 5% tolerance to the nominated SHGC window values shown on page 2 can be used with this rating.

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https://www.fr5.com.au/QRCodeLanding?PublicId=LZNJSSGDP5

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Building Features

Windows type and performance value

Window ID	Window type	U-value	SHGC
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27
ATB-003-04 B	Al Thermally Broken A DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27

Windows schedule

Window ID	Window no.	Height (mm)	Width (mm)	Orientation	Zone name	Outdoor shade
ATB-004-04 B	Opening 8	2660	2200	SSW	Kitchen/Living	No
ATB-004-04 B	Opening 16	2660	1355	ESE	Kitchen/Living	No
ATB-004-04 B	Opening 24	2660	1365	ESE	Kitchen/Living	No
ATB-004-04 B	Opening 1	2660	1067	NNE	Kitchen/Living	No
ATB-003-04 B	Opening 2	2660	1220	NNE	Kitchen/Living	No
ATB-003-04 B	Opening 18	2660	1210	NNE	Kitchen/Living	No
ATB-004-04 B	Opening 5	2660	2954	ESE	Bedroom 2	No
ATB-004-04 B	Opening 19	2660	1541	NNE	Circulation	No
ATB-004-04 B	Opening 3	2660	1075	NNE	Bedroom 1	No
ATB-003-04 B	Opening 20	2660	1075	NNE	Bedroom 1	No

Roof windows and skylight type and performance value

ID	Window type	U-value	SHGC

Roof window and skylight schedule

ID	Roof window/ skylight no.	Area (m^2)	Orientation	Zone name	Outdoor shade	Indoor shade/ diffuser

External wall type

Type	Insulation	Wall wrap
1 : FR5 - Cast Concrete	Polystyrene extruded: R2.5 (R2.5)	No
2 : Alcubond	Polystyrene extruded: R2.5 (R2.5)	No
3 : FR5 - Concrete Block Solid/Core Filled		No

External wall schedule

Wall type	Area (m^2)	Orientation	Zone name	Fixed shade	Eaves
1 : FR5 - Cast Concrete	3.1	WNW	Kitchen/Living	Yes	No
1 : FR5 - Cast Concrete	3.6	ESE	Kitchen/Living	No	Yes

Building Features

1 : FR5 - Cast Concrete	6.4	SSW	Kitchen/Living	Yes	Yes
2 : Alcubond	10.6	ESE	Kitchen/Living	No	No
2 : Alcubond	15.9	NNE	Kitchen/Living	No	No
3 : FR5 - Concrete Block Solid/Core Filled	9.5	SSW	Bedroom 2	No	No
1 : FR5 - Cast Concrete	7.9	ESE	Bedroom 2	No	Yes
3 : FR5 - Concrete Block Solid/Core Filled	4.1	SSW	Circulation	No	No
1 : FR5 - Cast Concrete	4.3	NNE	Circulation	Yes	No
3 : FR5 - Concrete Block Solid/Core Filled	9.5	WNW	Bedroom 1	No	No
1 : FR5 - Cast Concrete	3.1	ESE	Bedroom 1	Yes	No
2 : Alcubond	8.5	NNE	Bedroom 1	No	No
3 : FR5 - Concrete Block Solid/Core Filled	4.9	WNW	ENS	No	No
3 : FR5 - Concrete Block Solid/Core Filled	7.1	WNW	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	8.5	SSW	Bath	No	No

Internal wall type

Type	Area (m^2)	Insulation
1 : FR5 - Internal Plasterboard Stud Wall	72	

Floors

Location	Construction	Area (m^2)	Sub floor ventilation	Added insulation	Covering
Kitchen/Living	SuspSlab : 150mm: 150mm concrete slab	28.2	Enclosed	0.0	floattimber
Bedroom 2	SuspSlab : 150mm: 150mm concrete slab	10.7	Enclosed	0.0	Carpet
Circulation	SuspSlab : 150mm: 150mm concrete slab	11.4	Enclosed	0.0	floattimber
Bedroom 1	SuspSlab : 150mm: 150mm concrete slab	11.3	Enclosed	0.0	Carpet
ENS	SuspSlab : 150mm: 150mm concrete slab	5.1	Enclosed	0.0	Tiles
Bath	SuspSlab : 150mm: 150mm concrete slab	7.1	Enclosed	0.0	Tiles
L'dry	SuspSlab : 150mm: 150mm concrete slab	2.3	Enclosed	0.0	Tiles

Ceiling type

Building Features

Location	Material	Added insulation	Roof space above

Ceiling penetrations

Location	Number	Type	Width (mm)	Length (mm)	Seal/ unsealed
Kitchen/Living	12	Downlights	50	50	Sealed
Kitchen/Living	2	Exhaust Fans	180	180	Sealed
Bedroom 2	4	Downlights	50	50	Sealed
Circulation	4	Downlights	50	50	Sealed
Bedroom 1	4	Downlights	50	50	Sealed
Bath	1	Exhaust Fans	180	180	Sealed

Ceiling fans

Location	Number	Diameter (mm)

Roof type

Material	Added insulation	Roof colour
Ceil: Ceiling	0.0	light

Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **LZNJSSGDP5** Date of Certificate: **4 Dec 2017** ★ Star rating: **6.9**

Additional information

Explanatory notes

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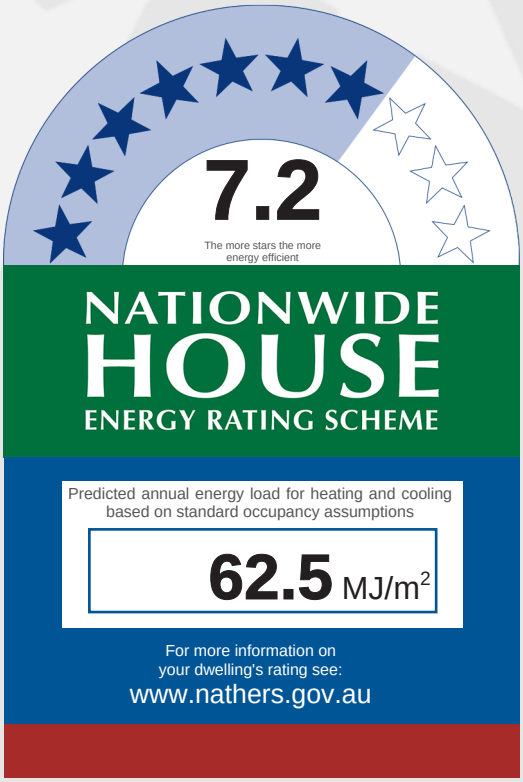
Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **A1WM3QMZ6U** Date of Certificate: **4 Dec 2017** ★ Star rating: **7.2**

Assessor details

Accreditation number:	**20594**
Name:	**Suruchi Pathak**
Organisation:	**Suruchi Pathak**
Email:	**suruchipathak@gmail.com**
Phone:	**0434220286**
Declaration of interest:	**No potential conflicts of interest to declare**
Software:	**FirstRate5: 5.2.7 (3.13)**
AAO:	**ABSA**



Overview

Dwelling details

Address:	**1106, 24-26 Railway Parade**		
Suburb:	**Westmead**		
State:	**NSW**	Postcode:	**2145**
Type:	**New Home**	NCC Class:	**Class 2**
Lot/DP number:	**1/952720**	NatHERS climate zone:	**28**
Exposure:	**exposed**		

Key construction and insulation materials

(see following pages for details)

Construction:	Wall:	**Alucobond Panel,Conc100+PB**
	Roof:	**Neighbour above**
	Floor:	**Concrete**
Insulation:	Wall:	**R2.5(Added to all external)**
	Roof:	**NA**
	Floor:	**NA**
Glazing:		**Aluminum**
		Refer detailed report

Ceiling penetrations

(see following pages for details)

Sealed:	**20**
Unsealed:	**0**
TOTAL:**	**20**

Principal downlight type: **LED**

NOTE: This total is the maximum number of ceiling penetrations allowed to a ceiling (under a roof) for this certificate. **If this number is exceded in construction then this certificate IS NOT VALID and a new certificate is required. Loss of ceiling insulation for the penetrations listed has been taken into account with the rating.

Net floor area (m^2)

Conditioned:	**47.5**
Unconditioned:	**4.7**
Garage:	**-**
TOTAL:	**52.2**

Annual thermal performance loads (MJ/m^2)

Heating:	**26.4**
Cooling:	**36.1**
TOTAL:	**62.5**

Window selection - default windows only

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https://www.fr5.com.au/QRCodeLanding?PublicId=A1WM3QMZ6U

Plan documents

Plan ref/date:	**16-021 DA151-Rev5-3.10.2017**
Prepared by:	**Sissons Architects**

Building Features

Windows type and performance value

Window ID	Window type	U-value	SHGC
ATB-003-04 B	Al Thermally Broken A DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27

Windows schedule

Window ID	Window no.	Height (mm)	Width (mm)	Orientation	Zone name	Outdoor shade
ATB-003-04 B	Opening 28	2660	1415	ESE	Kitchen/Living 8	No
ATB-004-04 B	Opening 53	2660	1385	ESE	Kitchen/Living 8	No
ATB-004-04 B	Opening 41	2660	2098	NNE	Kitchen/Living 8	No
ATB-004-04 B	Opening 49	2660	3000	ESE	Kitchen/Living 8	No
ATB-003-04 B	Opening 29	2660	1080	ESE	Bedroom	No
ATB-004-04 B	Opening 50	2660	1070	ESE	Bedroom	No

Roof windows and skylight type and performance value

ID	Window type	U-value	SHGC

Roof window and skylight schedule

ID	Roof window/ skylight no.	Area (m^2)	Orientation	Zone name	Outdoor shade	Indoor shade/ diffuser

External wall type

Type	Insulation	Wall wrap
1 : Alcubond	Polystyrene extruded: R2.5 (R2.5)	No
2 : FR5 - Cast Concrete	Polystyrene extruded: R2.5 (R2.5)	No
3 : FR5 - Concrete Block Solid/Core Filled		No

External wall schedule

Wall type	Area (m^2)	Orientation	Zone name	Fixed shade	Eaves
1 : Alcubond	11	ESE	Kitchen/Living 8	No	No
2 : FR5 - Cast Concrete	6.4	NNE	Kitchen/Living 8	Yes	No
2 : FR5 - Cast Concrete	8.5	ESE	Kitchen/Living 8	Yes	Yes
3 : FR5 - Concrete Block Solid/Core Filled	2	NNE	Kitchen/Living 8	No	No
3 : FR5 - Concrete Block Solid/Core Filled	19.5	WNW	Kitchen/Living 8	No	No
3 : FR5 - Concrete Block Solid/Core Filled	12.8	SSW	Kitchen/Living 8	No	No

Building Features

2 : FR5 - Cast Concrete	3.2	SSW	Kitchen/Living 8	No	No
1 : Alcubond	8.1	ESE	Bedroom	No	No
2 : FR5 - Cast Concrete	6.4	NNE	Bedroom	No	No
3 : FR5 - Concrete Block Solid/Core Filled	3.2	NNE	Bedroom	No	No
2 : FR5 - Cast Concrete	6.4	SSW	Bedroom	Yes	No
3 : FR5 - Concrete Block Solid/Core Filled	4.1	NNE	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	8	WNW	Bath	No	No

Internal wall type

Type	Area (m^2)	Insulation
1 : FR5 - Internal Plasterboard Stud Wall	15.4	

Floors

Location	Construction	Area (m^2)	Sub floor ventilation	Added insulation	Covering
Kitchen/Living 8	SuspSlab : 150mm: 150mm concrete slab	36.5	Enclosed	0.0	floattimber
Bedroom	SuspSlab : 150mm: 150mm concrete slab	11	Enclosed	0.0	Carpet
Bath	SuspSlab : 150mm: 150mm concrete slab	4.7	Enclosed	0.0	Tiles

Ceiling type

Location	Material	Added insulation	Roof space above

Ceiling penetrations

Location	Number	Type	Width (mm)	Length (mm)	Seal/ unsealed
Kitchen/Living 8	1	Exhaust Fans	180	180	Sealed
Kitchen/Living 8	14	Downlights	50	50	Sealed
Bedroom	4	Downlights	50	50	Sealed
Bath	1	Exhaust Fans	180	180	Sealed

Ceiling fans

Location	Number	Diameter (mm)

Roof type

Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **A1WM3QMZ6U** Date of Certificate: **4 Dec 2017** ★ Star rating: **7.2**

Building Features

Material	Added insulation	Roof colour
Ceil: Ceiling	0.0	medium

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Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **A1WM3QMZ6U** Date of Certificate: **4 Dec 2017** ★ Star rating: **7.2**

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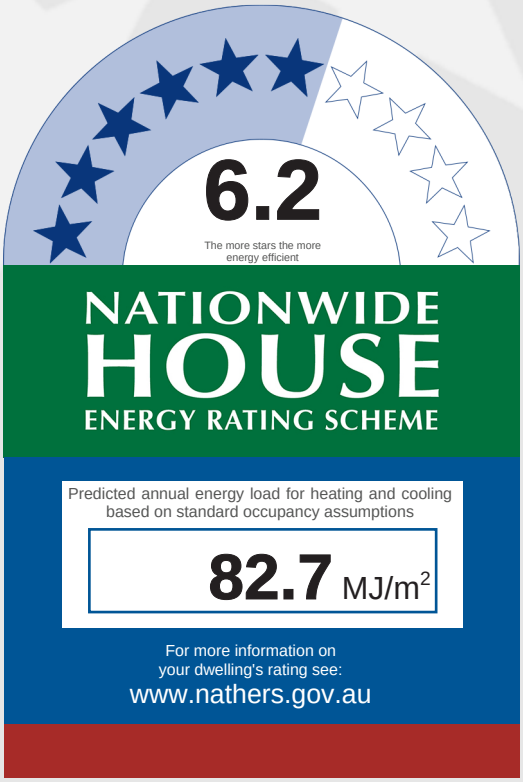
Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **33U84OIKWB** Date of Certificate: **29 Nov 2017** ★ Star rating: **6.2**

Assessor details

Accreditation number:	**20594**
Name:	**Suruchi Pathak**
Organisation:	**Suruchi Pathak**
Email:	**suruchipathak@gmail.com**
Phone:	**0434220286**
Declaration of interest:	**No potential conflicts of interest to declare**
Software:	**FirstRate5: 5.2.7 (3.13)**
AAO:	**ABSA**



Overview

Dwelling details

Address:	**1201, 24-26 Railway Parade**		
Suburb:	**Westmead**		
State:	**NSW**	Postcode:	**2145**
Type:	**New Home**	NCC Class:	**Class 2**
Lot/DP number:	**1/952720**	NatHERS climate zone:	**28**
Exposure:	**exposed**		

Key construction and insulation materials

(see following pages for details)

Construction:	Wall:	**Alucobond Panel,Conc100+PB**
	Roof:	**Neighbour above**
	Floor:	**Concrete**
Insulation:	Wall:	**R2.5(Added to all external)**
	Roof:	**NA**
	Floor:	**NA**
Glazing:		**Aluminum**
		Refer detailed report

Ceiling penetrations

(see following pages for details)

Sealed:	**26**
Unsealed:	**0**
TOTAL:**	**26**

Principal downlight type: **LED**

NOTE: This total is the maximum number of ceiling penetrations allowed to a ceiling (under a roof) for this certificate. **If this number is exceded in construction then this certificate IS NOT VALID and a new certificate is required. Loss of ceiling insulation for the penetrations listed has been taken into account with the rating.

Net floor area (m^2)

Conditioned:	**72.3**
Unconditioned:	**2.3**
Garage:	**-**
TOTAL:	**74.6**

Annual thermal performance loads (MJ/m^2)

Heating:	**46.5**
Cooling:	**36.2**
TOTAL:	**82.7**

Window selection - default windows only

Note on allowable window values: Only a 5% tolerance to the nominated SHGC window values shown on page 2 can be used with this rating.

Note: Only a +/-5% SHGC tolerance is allowed with this rating.

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Scan to access this certificate online and confirm this is valid.

https://www.fr5.com.au/QRCodeLanding?PublicId=33U84OIKWB

Plan documents

Plan ref/date:	**16-021 DA151-Rev5-3.10.2017**
Prepared by:	**Sissons Architects**

Building Features

Windows type and performance value

Window ID	Window type	U-value	SHGC
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27
ATB-003-04 B	Al Thermally Broken A DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27

Windows schedule

Window ID	Window no.	Height (mm)	Width (mm)	Orientation	Zone name	Outdoor shade
ATB-004-04 B	Opening 1	2660	1200	SSW	Kitchen/Living	No
ATB-003-04 B	Opening 2	2660	1220	SSW	Kitchen/Living	No
ATB-003-04 B	Opening 18	2660	1210	SSW	Kitchen/Living	No
ATB-004-04 B	Opening 16	2660	1355	ESE	Kitchen/Living	No
ATB-004-04 B	Opening 24	2660	1365	ESE	Kitchen/Living	No
ATB-004-04 B	Opening 8	2660	2200	NNE	Kitchen/Living	No
ATB-004-04 B	Opening 5	2660	2960	ESE	Bedroom 2	No
ATB-004-04 B	Opening 19	2660	1560	SSW	Circulation	No
ATB-004-04 B	Opening 3	2660	1075	SSW	Bedroom 1	No
ATB-003-04 B	Opening 20	2660	1075	SSW	Bedroom 1	No

Roof windows and skylight type and performance value

ID	Window type	U-value	SHGC

Roof window and skylight schedule

ID	Roof window/ skylight no.	Area (m^2)	Orientation	Zone name	Outdoor shade	Indoor shade/ diffuser

External wall type

Type	Insulation	Wall wrap
1 : Alcubond	Polystyrene extruded: R2.5 (R2.5)	No
2 : FR5 - Cast Concrete	Polystyrene extruded: R2.5 (R2.5)	No
3 : FR5 - Concrete Block Solid/Core Filled		No

External wall schedule

Wall type	Area (m^2)	Orientation	Zone name	Fixed shade	Eaves
1 : Alcubond	15.9	SSW	Kitchen/Living	No	No
1 : Alcubond	10.6	ESE	Kitchen/Living	No	No

Building Features

2 : FR5 - Cast Concrete	6.4	NNE	Kitchen/Living	Yes	Yes
2 : FR5 - Cast Concrete	3.6	ESE	Kitchen/Living	Yes	Yes
2 : FR5 - Cast Concrete	3.1	WNW	Kitchen/Living	Yes	No
2 : FR5 - Cast Concrete	7.9	ESE	Bedroom 2	Yes	Yes
3 : FR5 - Concrete Block Solid/Core Filled	9.5	NNE	Bedroom 2	No	No
2 : FR5 - Cast Concrete	4.3	SSW	Circulation	Yes	No
3 : FR5 - Concrete Block Solid/Core Filled	4.1	NNE	Circulation	No	No
1 : Alcubond	8.5	SSW	Bedroom 1	No	No
2 : FR5 - Cast Concrete	3.1	ESE	Bedroom 1	Yes	No
3 : FR5 - Concrete Block Solid/Core Filled	9.5	WNW	Bedroom 1	No	No
3 : FR5 - Concrete Block Solid/Core Filled	4.9	WNW	ENS	No	No
3 : FR5 - Concrete Block Solid/Core Filled	5.1	NNE	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	2.3	WNW	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	3.3	NNE	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	4.9	WNW	Bath	No	No

Internal wall type

Type	Area (m^2)	Insulation
1 : FR5 - Internal Plasterboard Stud Wall	72	

Floors

Location	Construction	Area (m^2)	Sub floor ventilation	Added insulation	Covering
Kitchen/Living	SuspSlab : 150mm: 150mm concrete slab	27.9	Enclosed	0.0	floattimber
Bedroom 2	SuspSlab : 150mm: 150mm concrete slab	10.7	Enclosed	0.0	Carpet
Circulation	SuspSlab : 150mm: 150mm concrete slab	11.4	Enclosed	0.0	floattimber
Bedroom 1	SuspSlab : 150mm: 150mm concrete slab	11.1	Enclosed	0.0	Carpet
ENS	SuspSlab : 150mm: 150mm concrete slab	5.1	Enclosed	0.0	Tiles
Bath	SuspSlab : 150mm: 150mm concrete slab	6	Enclosed	0.0	Tiles
L'dry	SuspSlab : 150mm: 150mm concrete slab	2.3	Enclosed	0.0	Tiles

Building Features

Ceiling type

Location	Material	Added insulation	Roof space above

Ceiling penetrations

Location	Number	Type	Width (mm)	Length (mm)	Seal/ unsealed
Kitchen/Living	12	Downlights	50	50	Sealed
Kitchen/Living	1	Exhaust Fans	180	180	Sealed
Bedroom 2	4	Downlights	50	50	Sealed
Circulation	4	Downlights	50	50	Sealed
Bedroom 1	4	Downlights	50	50	Sealed
Bath	1	Exhaust Fans	180	180	Sealed

Ceiling fans

Location	Number	Diameter (mm)

Roof type

Material	Added insulation	Roof colour
Ceil: Ceiling	0.0	light

Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **33U84OIKWB** Date of Certificate: **29 Nov 2017** ★ Star rating: **6.2**

Additional information

Explanatory notes

About this report

Residential energy ratings address the quality of the building fabric i.e. walls, windows, floors and roof/ceilings. Ratings do not cover the energy or water efficiency of appliances including heating and cooling, hot water, dishwashers, ovens, fridges, TVs etc. or solar panel or water tank requirements. The efficiency or specification of these items is generally covered by other regulations, standards or guidelines.

General Information

A NatHERS House Energy Rating is a comprehensive, dynamic computer modelling evaluation of the floorplans, elevations and specifications to predict an energy load of a home. Not all of us use our homes in the same way, so ratings are generated using standard assumptions. This means homes can be compared across the country.

The actual energy consumption of your home may vary significantly from the predicted energy load figures in this report depending on issues such as the size of your household and your personal preferences, e.g. in terms of heating or cooling.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparative purposes between different house designs and for demonstrating that the design meets the required regulatory compliance.

Homes that are energy efficient use less energy, are warmer in winter, cooler in summer and cost less to run. The higher the star rating the more energy efficient.

This NatHERS House Energy Rating report was carefully prepared by your assessor on the basis of comprehensive modelling using standard procedures to rate your home using an underlying engine developed by the Australian Commonwealth Scientific and Industrial Research Organisation (CSIRO).

All information relating to energy loads presented in this report is based on a range of standard assumptions in order to allow for comparisons with reports prepared for other homes and to demonstrate minimum regulatory compliance. The standard assumptions include figures for occupancy, indoor air temperature and are based on a unique climate file for your region.

Accredited Assessors

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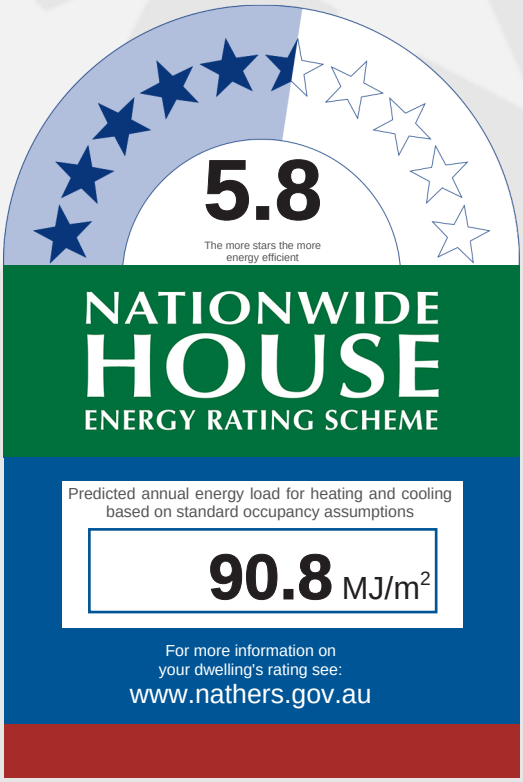
Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **9HU12ON1UJ** Date of Certificate: **29 Nov 2017** ★ Star rating: **5.8**

Assessor details

Accreditation number:	**20594**
Name:	**Suruchi Pathak**
Organisation:	**Suruchi Pathak**
Email:	**suruchipathak@gmail.com**
Phone:	**0434220286**
Declaration of interest:	**No potential conflicts of interest to declare**
Software:	**FirstRate5: 5.2.7 (3.13)**
AAO:	**ABSA**



Overview

Dwelling details

Address:	**1202, 24-26 Railway Parade**		
Suburb:	**Westmead**		
State:	**NSW**	Postcode:	**2145**
Type:	**New Home**	NCC Class:	**Class 2**
Lot/DP number:	**1/952720**	NatHERS climate zone:	**28**
Exposure:	**exposed**		

Key construction and insulation materials

(see following pages for details)

Construction:	Wall:	**Alucobond Panel,Conc100+PB**
	Roof:	**Neighbour above**
	Floor:	**Concrete**
Insulation:	Wall:	**R2.5(Added to all external)**
	Roof:	**NA**
	Floor:	**NA**
Glazing:		**Aluminum**
		Refer detailed report

Ceiling penetrations

(see following pages for details)

Sealed:	**24**
Unsealed:	**0**
TOTAL:**	**24**

Principal downlight type: **LED**

NOTE: This total is the maximum number of ceiling penetrations allowed to a ceiling (under a roof) for this certificate. **If this number is exceded in construction then this certificate IS NOT VALID and a new certificate is required. Loss of ceiling insulation for the penetrations listed has been taken into account with the rating.

Net floor area (m^2)

Conditioned:	**72.6**
Unconditioned:	**2.3**
Garage:	**-**
TOTAL:	**74.9**

Annual thermal performance loads (MJ/m^2)

Heating:	**48.3**
Cooling:	**42.5**
TOTAL:	**90.8**

Window selection - default windows only

Note on allowable window values: Only a 5% tolerance to the nominated SHGC window values shown on page 2 can be used with this rating.

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Plan documents

Plan ref/date:	**16-021 DA151-Rev5-3.10.2017**
Prepared by:	**Sissons Architects**

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Building Features

Windows type and performance value

Window ID	Window type	U-value	SHGC
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27
ATB-003-04 B	Al Thermally Broken A DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27

Windows schedule

Window ID	Window no.	Height (mm)	Width (mm)	Orientation	Zone name	Outdoor shade
ATB-004-04 B	Opening 8	2660	2200	NNE	Kitchen/Living	No
ATB-004-04 B	Opening 16	2660	1355	WNW	Kitchen/Living	No
ATB-004-04 B	Opening 24	2660	1365	WNW	Kitchen/Living	No
ATB-004-04 B	Opening 1	2660	1067	SSW	Kitchen/Living	No
ATB-003-04 B	Opening 2	2660	1220	SSW	Kitchen/Living	No
ATB-003-04 B	Opening 18	2660	1210	SSW	Kitchen/Living	No
ATB-004-04 B	Opening 5	2660	2954	WNW	Bedroom 2	No
ATB-004-04 B	Opening 19	2660	1541	SSW	Circulation	No
ATB-004-04 B	Opening 3	2660	1075	SSW	Bedroom 1	No
ATB-003-04 B	Opening 20	2660	1075	SSW	Bedroom 1	No

Roof windows and skylight type and performance value

ID	Window type	U-value	SHGC

Roof window and skylight schedule

ID	Roof window/ skylight no.	Area (m^2)	Orientation	Zone name	Outdoor shade	Indoor shade/ diffuser

External wall type

Type	Insulation	Wall wrap
1 : FR5 - Cast Concrete	Polystyrene extruded: R2.5 (R2.5)	No
2 : Alcubond	Polystyrene extruded: R2.5 (R2.5)	No
3 : FR5 - Concrete Block Solid/Core Filled		No

External wall schedule

Wall type	Area (m^2)	Orientation	Zone name	Fixed shade	Eaves
1 : FR5 - Cast Concrete	3.1	ESE	Kitchen/Living	Yes	No
1 : FR5 - Cast Concrete	3.6	WNW	Kitchen/Living	No	Yes

Building Features

1 : FR5 - Cast Concrete	6.4	NNE	Kitchen/Living	Yes	Yes
2 : Alcubond	10.6	WNW	Kitchen/Living	No	No
2 : Alcubond	15.9	SSW	Kitchen/Living	No	No
3 : FR5 - Concrete Block Solid/Core Filled	9.5	NNE	Bedroom 2	No	No
1 : FR5 - Cast Concrete	7.9	WNW	Bedroom 2	No	Yes
3 : FR5 - Concrete Block Solid/Core Filled	4.1	NNE	Circulation	No	No
1 : FR5 - Cast Concrete	4.3	SSW	Circulation	Yes	No
3 : FR5 - Concrete Block Solid/Core Filled	9.5	ESE	Bedroom 1	No	No
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2 : Alcubond	8.5	SSW	Bedroom 1	No	No
3 : FR5 - Concrete Block Solid/Core Filled	4.9	ESE	ENS	No	No
3 : FR5 - Concrete Block Solid/Core Filled	4.9	ESE	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	3.3	NNE	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	2.3	ESE	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	5.1	NNE	Bath	No	No

Internal wall type

Type	Area (m^2)	Insulation
1 : FR5 - Internal Plasterboard Stud Wall	72	

Floors

Location	Construction	Area (m^2)	Sub floor ventilation	Added insulation	Covering
Kitchen/Living	SuspSlab : 150mm: 150mm concrete slab	28.3	Enclosed	0.0	floattimber
Bedroom 2	SuspSlab : 150mm: 150mm concrete slab	10.7	Enclosed	0.0	Carpet
Circulation	SuspSlab : 150mm: 150mm concrete slab	11.4	Enclosed	0.0	floattimber
Bedroom 1	SuspSlab : 150mm: 150mm concrete slab	11.1	Enclosed	0.0	Carpet
ENS	SuspSlab : 150mm: 150mm concrete slab	5.1	Enclosed	0.0	Tiles
Bath	SuspSlab : 150mm: 150mm concrete slab	6	Enclosed	0.0	Tiles
L'dry	SuspSlab : 150mm: 150mm concrete slab	2.3	Enclosed	0.0	Tiles

Building Features

Ceiling type

Location	Material	Added insulation	Roof space above

Ceiling penetrations

Location	Number	Type	Width (mm)	Length (mm)	Seal/ unsealed
Kitchen/Living	10	Downlights	50	50	Sealed
Kitchen/Living	1	Exhaust Fans	180	180	Sealed
Bedroom 2	4	Downlights	50	50	Sealed
Circulation	4	Downlights	50	50	Sealed
Bedroom 1	4	Downlights	50	50	Sealed
Bath	1	Exhaust Fans	180	180	Sealed

Ceiling fans

Location	Number	Diameter (mm)

Roof type

Material	Added insulation	Roof colour
Ceil: Ceiling	0.0	light

Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **9HU12ON1UJ** Date of Certificate: **29 Nov 2017** ★ Star rating: **5.8**

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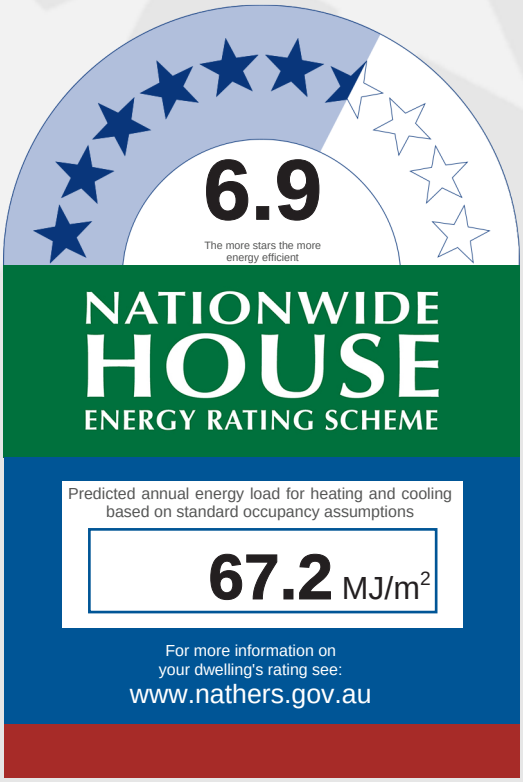
Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **8P8SFMHC6R** Date of Certificate: **29 Nov 2017** ★ Star rating: **6.9**

Assessor details

Accreditation number:	**20594**
Name:	**Suruchi Pathak**
Organisation:	**Suruchi Pathak**
Email:	**suruchipathak@gmail.com**
Phone:	**0434220286**
Declaration of interest:	**No potential conflicts of interest to declare**
Software:	**FirstRate5: 5.2.7 (3.13)**
AAO:	**ABSA**



Overview

Dwelling details

Address:	**1203, 24-26 Railway Parade**		
Suburb:	**Westmead**		
State:	**NSW**	Postcode:	**2145**
Type:	**New Home**	NCC Class:	**Class 2**
Lot/DP number:	**1/952720**	NatHERS climate zone:	**28**
Exposure:	**exposed**		

Key construction and insulation materials

(see following pages for details)

Construction:	Wall:	**Alucobond Panel,Conc100+PB**
	Roof:	**Neighbour above**
	Floor:	**Concrete**
Insulation:	Wall:	**R2.5(Added to all external)**
	Roof:	**NA**
	Floor:	**NA**
Glazing:		**Aluminum**
		Refer detailed report

Ceiling penetrations

(see following pages for details)

Sealed:	**20**
Unsealed:	**0**
TOTAL:**	**20**

Principal downlight type: **LED**

NOTE: This total is the maximum number of ceiling penetrations allowed to a ceiling (under a roof) for this certificate. **If this number is exceded in construction then this certificate IS NOT VALID and a new certificate is required. Loss of ceiling insulation for the penetrations listed has been taken into account with the rating.

Net floor area (m^2)

Conditioned:	**47.5**
Unconditioned:	**4.7**
Garage:	**-**
TOTAL:	**52.2**

Annual thermal performance loads (MJ/m^2)

Heating:	**24.5**
Cooling:	**42.7**
TOTAL:	**67.2**

Window selection - default windows only

Note on allowable window values: Only a 5% tolerance to the nominated SHGC window values shown on page 2 can be used with this rating.

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https://www.fr5.com.au/QRCodeLanding?PublicId=8P8SFMHC6R

Plan documents

Plan ref/date:	**16-021 DA151-Rev5-3.10.2017**
Prepared by:	**Sissons Architects**

Building Features

Windows type and performance value

Window ID	Window type	U-value	SHGC
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27
ATB-003-04 B	Al Thermally Broken A DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27

Windows schedule

Window ID	Window no.	Height (mm)	Width (mm)	Orientation	Zone name	Outdoor shade
ATB-004-04 B	Opening 49	2660	3000	WNW	Kitchen/Living 8	No
ATB-004-04 B	Opening 41	2660	2220	NNE	Kitchen/Living 8	No
ATB-003-04 B	Opening 28	2660	1415	WNW	Kitchen/Living 8	No
ATB-004-04 B	Opening 52	2660	1385	WNW	Kitchen/Living 8	No
ATB-003-04 B	Opening 29	2660	1080	WNW	Bedroom	No
ATB-004-04 B	Opening 51	2660	1070	WNW	Bedroom	No

Roof windows and skylight type and performance value

ID	Window type	U-value	SHGC

Roof window and skylight schedule

ID	Roof window/ skylight no.	Area (m^2)	Orientation	Zone name	Outdoor shade	Indoor shade/ diffuser

External wall type

Type	Insulation	Wall wrap
1 : FR5 - Cast Concrete	Polystyrene extruded: R2.5 (R2.5)	No
2 : FR5 - Concrete Block Solid/Core Filled		No
3 : Alcubond	Polystyrene extruded: R2.5 (R2.5)	No

External wall schedule

Wall type	Area (m^2)	Orientation	Zone name	Fixed shade	Eaves
1 : FR5 - Cast Concrete	3.2	SSW	Kitchen/Living 8	No	No
2 : FR5 - Concrete Block Solid/Core Filled	12.8	SSW	Kitchen/Living 8	No	No
2 : FR5 - Concrete Block Solid/Core Filled	19.5	ESE	Kitchen/Living 8	No	No
2 : FR5 - Concrete Block Solid/Core Filled	2	NNE	Kitchen/Living 8	No	No
1 : FR5 - Cast Concrete	8.5	WNW	Kitchen/Living 8	Yes	Yes
1 : FR5 - Cast Concrete	6.4	NNE	Kitchen/Living 8	Yes	Yes

Building Features

3 : Alcubond	11	WNW	Kitchen/Living 8	No	No
1 : FR5 - Cast Concrete	6.4	SSW	Bedroom	Yes	No
2 : FR5 - Concrete Block Solid/Core Filled	3.2	NNE	Bedroom	No	No
1 : FR5 - Cast Concrete	6.4	NNE	Bedroom	No	No
3 : Alcubond	8.1	WNW	Bedroom	No	No
2 : FR5 - Concrete Block Solid/Core Filled	8	ESE	Bath	No	No
2 : FR5 - Concrete Block Solid/Core Filled	4.1	NNE	Bath	No	No

Internal wall type

Type	Area (m^2)	Insulation
1 : FR5 - Internal Plasterboard Stud Wall	15.4	

Floors

Location	Construction	Area (m^2)	Sub floor ventilation	Added insulation	Covering
Kitchen/Living 8	SuspSlab : 150mm: 150mm concrete slab	36.5	Enclosed	0.0	floattimber
Bedroom	SuspSlab : 150mm: 150mm concrete slab	11	Enclosed	0.0	Carpet
Bath	SuspSlab : 150mm: 150mm concrete slab	4.7	Enclosed	0.0	Tiles

Ceiling type

Location	Material	Added insulation	Roof space above

Ceiling penetrations

Location	Number	Type	Width (mm)	Length (mm)	Seal/ unsealed
Kitchen/Living 8	1	Exhaust Fans	180	180	Sealed
Kitchen/Living 8	14	Downlights	50	50	Sealed
Bedroom	4	Downlights	50	50	Sealed
Bath	1	Exhaust Fans	180	180	Sealed

Ceiling fans

Location	Number	Diameter (mm)

Roof type

Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **8P8SFMHC6R** Date of Certificate: **29 Nov 2017** ★ Star rating: **6.9**

Building Features

Material	Added insulation	Roof colour
Ceil: Ceiling	0.0	medium

* Nationwide House Energy Rating Scheme (NatHERS) is an initiative of the Australian, state and territory governments. For more details see www.nathers.gov.au

Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **8P8SFMHC6R** Date of Certificate: **29 Nov 2017** ★ Star rating: **6.9**

Additional information

Explanatory notes

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Homes that are energy efficient use less energy, are warmer in winter, cooler in summer and cost less to run. The higher the star rating the more energy efficient.

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All information relating to energy loads presented in this report is based on a range of standard assumptions in order to allow for comparisons with reports prepared for other homes and to demonstrate minimum regulatory compliance. The standard assumptions include figures for occupancy, indoor air temperature and are based on a unique climate file for your region.

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Disclaimer

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Contact

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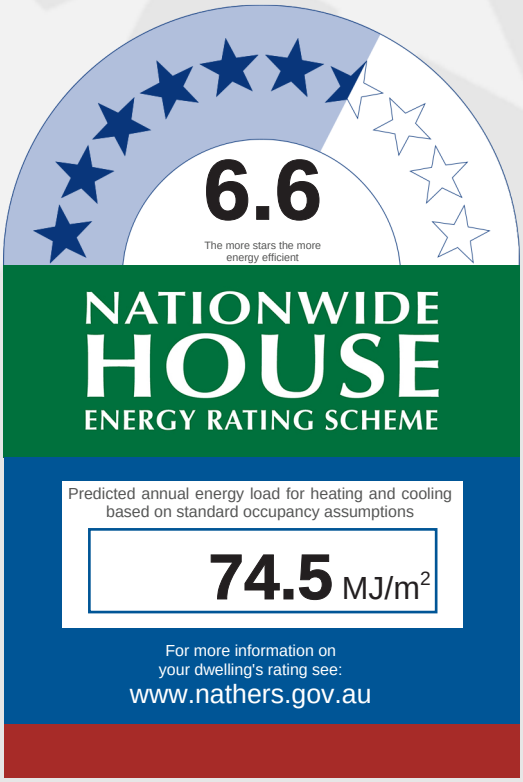
Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **9T4TN2BC5H** Date of Certificate: **29 Nov 2017** ★ Star rating: **6.6**

Assessor details

Accreditation number:	**20594**
Name:	**Suruchi Pathak**
Organisation:	**Suruchi Pathak**
Email:	**suruchipathak@gmail.com**
Phone:	**0434220286**
Declaration of interest:	**No potential conflicts of interest to declare**
Software:	**FirstRate5: 5.2.7 (3.13)**
AAO:	**ABSA**



Overview

Dwelling details

Address:	**1204, 24-26 Railway Parade**		
Suburb:	**Westmead**		
State:	**NSW**	Postcode:	**2145**
Type:	**New Home**	NCC Class:	**Class 2**
Lot/DP number:	**1/952720**	NatHERS climate zone:	**28**
Exposure:	**exposed**		

Key construction and insulation materials

(see following pages for details)

Construction:	Wall:	**Alucobond Panel,Conc100+PB**
	Roof:	**Neighbour above**
	Floor:	**Concrete**
Insulation:	Wall:	**R2.5(Added to all external)**
	Roof:	**NA**
	Floor:	**NA**
Glazing:		**Aluminum**
		Refer detailed report

Ceiling penetrations

(see following pages for details)

Sealed:	**26**
Unsealed:	**0**
TOTAL:**	**26**

Principal downlight type: **LED**

NOTE: This total is the maximum number of ceiling penetrations allowed to a ceiling (under a roof) for this certificate. **If this number is exceded in construction then this certificate IS NOT VALID and a new certificate is required. Loss of ceiling insulation for the penetrations listed has been taken into account with the rating.

Net floor area (m^2)

Conditioned:	**73.7**
Unconditioned:	**2.3**
Garage:	**-**
TOTAL:	**76**

Annual thermal performance loads (MJ/m^2)

Heating:	**29.1**
Cooling:	**45.4**
TOTAL:	**74.5**

Window selection - default windows only

Note on allowable window values: Only a 5% tolerance to the nominated SHGC window values shown on page 2 can be used with this rating.

Note: Only a +/-5% SHGC tolerance is allowed with this rating.

NB: This tolerance ONLY applies to SHGC, the U-value can always be lower but not higher than the values stated on page 2.

If any of the windows selected are outside the 5% tolerance then this certificate is no longer valid and the dwelling will need to be rerated to confirm compliance.

Plan documents

Plan ref/date:	**16-021 DA151-Rev5-3.10.2017**
Prepared by:	**Sissons Architects**

Scan to access this certificate online and confirm this is valid.

https://www.fr5.com.au/QRCodeLanding?PublicId=9T4TN2BC5H

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Building Features

Windows type and performance value

Window ID	Window type	U-value	SHGC
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27
ATB-003-04 B	Al Thermally Broken A DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27

Windows schedule

Window ID	Window no.	Height (mm)	Width (mm)	Orientation	Zone name	Outdoor shade
ATB-004-04 B	Opening 1	2660	1067	NNE	Kitchen/Living	No
ATB-003-04 B	Opening 2	2660	1220	NNE	Kitchen/Living	No
ATB-003-04 B	Opening 18	2660	1210	NNE	Kitchen/Living	No
ATB-004-04 B	Opening 16	2660	1355	WNW	Kitchen/Living	No
ATB-004-04 B	Opening 24	2660	1365	WNW	Kitchen/Living	No
ATB-004-04 B	Opening 8	2660	2200	SSW	Kitchen/Living	No
ATB-004-04 B	Opening 5	2660	2954	WNW	Bedroom 2	No
ATB-004-04 B	Opening 19	2660	1541	NNE	Circulation	No
ATB-004-04 B	Opening 3	2660	1075	NNE	Bedroom 1	No
ATB-003-04 B	Opening 20	2660	1075	NNE	Bedroom 1	No

Roof windows and skylight type and performance value

ID	Window type	U-value	SHGC

Roof window and skylight schedule

ID	Roof window/ skylight no.	Area (m^2)	Orientation	Zone name	Outdoor shade	Indoor shade/ diffuser

External wall type

Type	Insulation	Wall wrap
1 : Alcubond	Polystyrene extruded: R2.5 (R2.5)	No
2 : FR5 - Cast Concrete	Polystyrene extruded: R2.5 (R2.5)	No
3 : FR5 - Concrete Block Solid/Core Filled		No

External wall schedule

Wall type	Area (m^2)	Orientation	Zone name	Fixed shade	Eaves
1 : Alcubond	15.9	NNE	Kitchen/Living	No	No
1 : Alcubond	10.6	WNW	Kitchen/Living	No	No

Building Features

2 : FR5 - Cast Concrete	6.4	SSW	Kitchen/Living	Yes	Yes
2 : FR5 - Cast Concrete	3.6	WNW	Kitchen/Living	Yes	Yes
2 : FR5 - Cast Concrete	3.1	ESE	Kitchen/Living	Yes	No
2 : FR5 - Cast Concrete	7.9	WNW	Bedroom 2	Yes	Yes
3 : FR5 - Concrete Block Solid/Core Filled	9.5	SSW	Bedroom 2	No	No
2 : FR5 - Cast Concrete	4.3	NNE	Circulation	Yes	No
3 : FR5 - Concrete Block Solid/Core Filled	4.1	SSW	Circulation	No	No
1 : Alcubond	8.5	NNE	Bedroom 1	No	No
2 : FR5 - Cast Concrete	3.1	WNW	Bedroom 1	Yes	No
3 : FR5 - Concrete Block Solid/Core Filled	9.5	ESE	Bedroom 1	No	No
3 : FR5 - Concrete Block Solid/Core Filled	4.9	ESE	ENS	No	No
3 : FR5 - Concrete Block Solid/Core Filled	8.5	SSW	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	7.1	ESE	Bath	No	No

Internal wall type

Type	Area (m^2)	Insulation
1 : FR5 - Internal Plasterboard Stud Wall	72	

Floors

Location	Construction	Area (m^2)	Sub floor ventilation	Added insulation	Covering
Kitchen/Living	SuspSlab : 150mm: 150mm concrete slab	28.1	Enclosed	0.0	floattimber
Bedroom 2	SuspSlab : 150mm: 150mm concrete slab	10.7	Enclosed	0.0	Carpet
Circulation	SuspSlab : 150mm: 150mm concrete slab	11.4	Enclosed	0.0	floattimber
Bedroom 1	SuspSlab : 150mm: 150mm concrete slab	11.3	Enclosed	0.0	Carpet
ENS	SuspSlab : 150mm: 150mm concrete slab	5.1	Enclosed	0.0	Tiles
Bath	SuspSlab : 150mm: 150mm concrete slab	7.1	Enclosed	0.0	Tiles
L'dry	SuspSlab : 150mm: 150mm concrete slab	2.3	Enclosed	0.0	Tiles

Ceiling type

Building Features

Location	Material	Added insulation	Roof space above

Ceiling penetrations

Location	Number	Type	Width (mm)	Length (mm)	Seal/ unsealed
Kitchen/Living	12	Downlights	50	50	Sealed
Kitchen/Living	1	Exhaust Fans	180	180	Sealed
Bedroom 2	4	Downlights	50	50	Sealed
Circulation	4	Downlights	50	50	Sealed
Bedroom 1	4	Downlights	50	50	Sealed
Bath	1	Exhaust Fans	180	180	Sealed

Ceiling fans

Location	Number	Diameter (mm)

Roof type

Material	Added insulation	Roof colour
Ceil: Ceiling	0.0	light

Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **9T4TN2BC5H** Date of Certificate: **29 Nov 2017** ★ Star rating: **6.6**

Additional information

Explanatory notes

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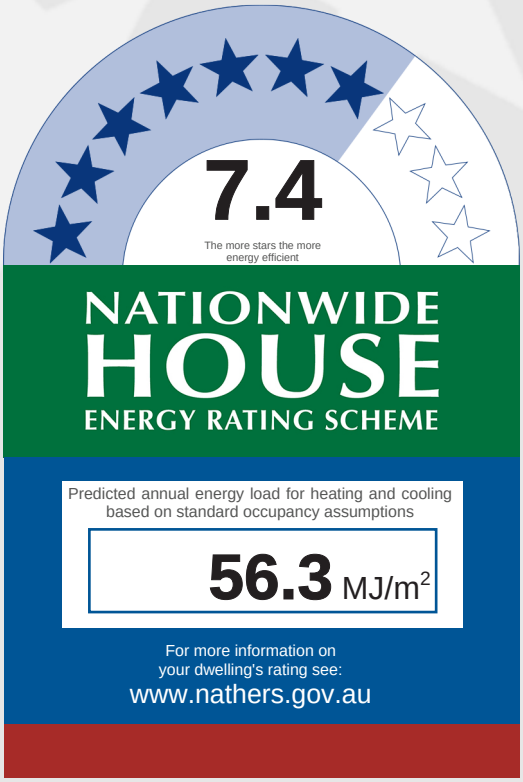
Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **VXE5GN4B3S** Date of Certificate: **29 Nov 2017** ★ Star rating: **7.4**

Assessor details

Accreditation number:	**20594**
Name:	**Suruchi Pathak**
Organisation:	**Suruchi Pathak**
Email:	**suruchipathak@gmail.com**
Phone:	**0434220286**
Declaration of interest:	**No potential conflicts of interest to declare**
Software:	**FirstRate5: 5.2.7 (3.13)**
AAO:	**ABSA**



Overview

Dwelling details

Address:	**1205, 24-26 Railway Parade**		
Suburb:	**Westmead**		
State:	**NSW**	Postcode:	**2145**
Type:	**New Home**	NCC Class:	**Class 2**
Lot/DP number:	**1/952720**	NatHERS climate zone:	**28**
Exposure:	**exposed**		

Key construction and insulation materials

(see following pages for details)

Construction:	Wall:	**Alucobond Panel,Conc100+PB**
	Roof:	**Neighbour above**
	Floor:	**Concrete**
Insulation:	Wall:	**R2.5(Added to all external)**
	Roof:	**NA**
	Floor:	**R2.5(floor with air below)**
Glazing:		**Aluminum**
		Refer detailed report

Ceiling penetrations

(see following pages for details)

Sealed:	**48**
Unsealed:	**0**
TOTAL:**	**48**

Principal downlight type: **LED**

NOTE: This total is the maximum number of ceiling penetrations allowed to a ceiling (under a roof) for this certificate. **If this number is exceded in construction then this certificate IS NOT VALID and a new certificate is required. Loss of ceiling insulation for the penetrations listed has been taken into account with the rating.

Net floor area (m^2)

Conditioned:	**138.2**
Unconditioned:	**3.6**
Garage:	**-**
TOTAL:	**141.8**

Annual thermal performance loads (MJ/m^2)

Heating:	**20.6**
Cooling:	**35.7**
TOTAL:	**56.3**

Window selection - default windows only

Note on allowable window values: Only a 5% tolerance to the nominated SHGC window values shown on page 2 can be used with this rating.

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Plan documents

Plan ref/date:	**16-021 DA151-Rev5-3.10.2017**
Prepared by:	**Sissons Architects**

Scan to access this certificate online and confirm this is valid.

https://www.fr5.com.au/QRCodeLanding?PublicId=VXE5GN4B3S

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Building Features

Windows type and performance value

Window ID	Window type	U-value	SHGC
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27
ATB-003-04 B	Al Thermally Broken A DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27

Windows schedule

Window ID	Window no.	Height (mm)	Width (mm)	Orientation	Zone name	Outdoor shade
ATB-004-04 B	Opening 38	2660	4308	ESE	Kitchen/Living	No
ATB-004-04 B	Opening 39	2660	2842	SSW	Kitchen/Living	No
ATB-004-04 B	Opening 32	2660	1365	ESE	Kitchen/Living	No
ATB-004-04 B	Opening 33	2660	1330	ESE	Kitchen/Living	No
ATB-003-04 B	Opening 34	2660	1260	NNE	Kitchen/Living	No
ATB-003-04 B	Opening 35	2660	1261	NNE	Kitchen/Living	No
ATB-004-04 B	Opening 43	2660	1210	NNE	Kitchen/Living	No
ATB-004-04 B	Opening 36	2660	1532	NNE	Kitchen/Living	No
ATB-003-04 B	Opening 37	2660	1128	NNE	Kitchen/Living	No
ATB-004-04 B	Opening 44	2660	1095	NNE	Kitchen/Living	No
ATB-003-04 B	Opening 42	2660	1452	ESE	Bed1	No
ATB-003-04 B	Opening 40	2660	2100	ESE	Bedroom 2	No
ATB-003-04 B	Opening 41	2660	1128	ESE	Bed 3	No
ATB-004-04 B	Opening 45	2660	1070	ESE	Bed 3	No

Roof windows and skylight type and performance value

ID	Window type	U-value	SHGC

Roof window and skylight schedule

ID	Roof window/ skylight no.	Area (m^2)	Orientation	Zone name	Outdoor shade	Indoor shade/ diffuser

External wall type

Type	Insulation	Wall wrap
1 : FR5 - Concrete Block Solid/Core Filled		No
2 : FR5 - Cast Concrete	Polystyrene extruded: R2.5 (R2.5)	No
3 : Alcubond	Polystyrene extruded: R2.5 (R2.5)	No

External wall schedule

Building Features

Wall type	Area (m^2)	Orientation	Zone name	Fixed shade	Eaves
1 : FR5 - Concrete Block Solid/Core Filled	16.2	SSW	Kitchen/Living	No	No
2 : FR5 - Cast Concrete	12	ESE	Kitchen/Living	Yes	No
2 : FR5 - Cast Concrete	8.3	SSW	Kitchen/Living	Yes	Yes
3 : Alcubond	10.9	ESE	Kitchen/Living	No	No
3 : Alcubond	16.4	NNE	Kitchen/Living	No	No
2 : FR5 - Cast Concrete	3.3	WNW	Kitchen/Living	Yes	No
2 : FR5 - Cast Concrete	5.4	NNE	Kitchen/Living	Yes	No
2 : FR5 - Cast Concrete	3.3	ESE	Kitchen/Living	Yes	No
3 : Alcubond	8.8	NNE	Kitchen/Living	No	No
1 : FR5 - Concrete Block Solid/Core Filled	22.9	WNW	Kitchen/Living	No	No
1 : FR5 - Concrete Block Solid/Core Filled	8.1	WNW	Lory	No	No
1 : FR5 - Concrete Block Solid/Core Filled	2	NNE	Bath	No	No
1 : FR5 - Concrete Block Solid/Core Filled	9.8	WNW	Bath	No	No
1 : FR5 - Concrete Block Solid/Core Filled	8	SSW	Ensuite	No	No
1 : FR5 - Concrete Block Solid/Core Filled	5.3	WNW	Ensuite	No	No
1 : FR5 - Concrete Block Solid/Core Filled	5.5	SSW	Bed1	No	No
2 : FR5 - Cast Concrete	2.7	SSW	Bed1	No	No
3 : Alcubond	9.9	ESE	Bed1	No	No
1 : FR5 - Concrete Block Solid/Core Filled	4.4	WNW	Bed1	No	No
3 : Alcubond	9.9	ESE	Bedroom 2	No	No
3 : Alcubond	8.2	ESE	Bed 3	No	No
2 : FR5 - Cast Concrete	8.1	NNE	Bed 3	Yes	No

Internal wall type

Type	Area (m^2)	Insulation
1 : FR5 - Internal Plasterboard Stud Wall	83.3	

Floors

Location	Construction	Area (m^2)	Sub floor ventilation	Added insulation	Covering
Kitchen/Living	SuspSlab : 150mm: 150mm concrete slab	81.9	Enclosed	0.0	floattimber
Corridor	SuspSlab : 150mm: 150mm concrete slab	6.2	Enclosed	0.0	floattimber
Lory	SuspSlab : 150mm: 150mm concrete	3.6	Enclosed	0.0	Tiles

Building Features

	slab				
Bath	SuspSlab : 150mm: 150mm concrete slab	7.1	Enclosed	0.0	Tiles
Ensuite	SuspSlab : 150mm: 150mm concrete slab	5.9	Enclosed	0.0	Tiles
Bed1	SuspSlab : 150mm: 150mm concrete slab	16.4	Enclosed	0.0	Carpet
Bedroom 2	SuspSlab : 150mm: 150mm concrete slab	10.3	Elevated	2.5	Carpet
Bed 3	SuspSlab : 150mm: 150mm concrete slab	10.3	Enclosed	0.0	Carpet

Ceiling type

Location	Material	Added insulation	Roof space above

Ceiling penetrations

Location	Number	Type	Width (mm)	Length (mm)	Seal/ unsealed
Kitchen/Living	1	Exhaust Fans	180	180	Sealed
Kitchen/Living	32	Downlights	50	50	Sealed
Bath	1	Exhaust Fans	180	180	Sealed
Bed1	6	Downlights	50	50	Sealed
Bedroom 2	4	Downlights	50	50	Sealed
Bed 3	4	Downlights	50	50	Sealed

Ceiling fans

Location	Number	Diameter (mm)

Roof type

Material	Added insulation	Roof colour
Ceil: Ceiling	0.0	medium

Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **VXE5GN4B3S** Date of Certificate: **29 Nov 2017** ★ Star rating: **7.4**

Additional information

Explanatory notes

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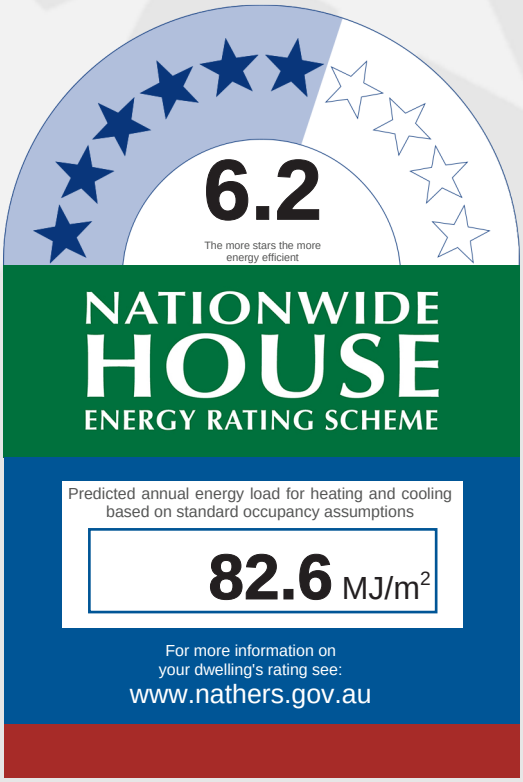
Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **GGOECQMBNA** Date of Certificate: **29 Nov 2017** ★ Star rating: **6.2**

Assessor details

Accreditation number:	**20594**
Name:	**Suruchi Pathak**
Organisation:	**Suruchi Pathak**
Email:	**suruchipathak@gmail.com**
Phone:	**0434220286**
Declaration of interest:	**No potential conflicts of interest to declare**
Software:	**FirstRate5: 5.2.7 (3.13)**
AAO:	**ABSA**



Overview

Dwelling details

Address:	**1301, 24-26 Railway Parade**		
Suburb:	**Westmead**		
State:	**NSW**	Postcode:	**2145**
Type:	**New Home**	NCC Class:	**Class 2**
Lot/DP number:	**1/952720**	NatHERS climate zone:	**28**
Exposure:	**exposed**		

Key construction and insulation materials

(see following pages for details)

Construction:	Wall:	**Alucobond Panel,Conc100+PB**
	Roof:	**Neighbour above**
	Floor:	**Concrete**
Insulation:	Wall:	**R2.5(Added to all external)**
	Roof:	**NA**
	Floor:	**NA**
Glazing:		**Aluminum**
		Refer detailed report

Ceiling penetrations

(see following pages for details)

Sealed:	**26**
Unsealed:	**0**
TOTAL:**	**26**

Principal downlight type: **LED**

NOTE: This total is the maximum number of ceiling penetrations allowed to a ceiling (under a roof) for this certificate. **If this number is exceded in construction then this certificate IS NOT VALID and a new certificate is required. Loss of ceiling insulation for the penetrations listed has been taken into account with the rating.

Net floor area (m^2)

Conditioned:	**72.3**
Unconditioned:	**2.3**
Garage:	**-**
TOTAL:	**74.6**

Annual thermal performance loads (MJ/m^2)

Heating:	**46.7**
Cooling:	**35.9**
TOTAL:	**82.6**

Window selection - default windows only

Note on allowable window values: Only a 5% tolerance to the nominated SHGC window values shown on page 2 can be used with this rating.

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https://www.fr5.com.au/QRCodeLanding?PublicId=GGOECQMBNA

Plan documents

Plan ref/date:	**16-021 DA151-Rev5-3.10.2017**
Prepared by:	**Sissons Architects**

Building Features

Windows type and performance value

Window ID	Window type	U-value	SHGC
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27
ATB-003-04 B	Al Thermally Broken A DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27

Windows schedule

Window ID	Window no.	Height (mm)	Width (mm)	Orientation	Zone name	Outdoor shade
ATB-004-04 B	Opening 1	2660	1200	SSW	Kitchen/Living	No
ATB-003-04 B	Opening 2	2660	1220	SSW	Kitchen/Living	No
ATB-003-04 B	Opening 18	2660	1210	SSW	Kitchen/Living	No
ATB-004-04 B	Opening 16	2660	1355	ESE	Kitchen/Living	No
ATB-004-04 B	Opening 24	2660	1365	ESE	Kitchen/Living	No
ATB-004-04 B	Opening 8	2660	2200	NNE	Kitchen/Living	No
ATB-004-04 B	Opening 5	2660	2960	ESE	Bedroom 2	No
ATB-004-04 B	Opening 19	2660	1560	SSW	Circulation	No
ATB-004-04 B	Opening 3	2660	1075	SSW	Bedroom 1	No
ATB-003-04 B	Opening 20	2660	1075	SSW	Bedroom 1	No

Roof windows and skylight type and performance value

ID	Window type	U-value	SHGC

Roof window and skylight schedule

ID	Roof window/ skylight no.	Area (m^2)	Orientation	Zone name	Outdoor shade	Indoor shade/ diffuser

External wall type

Type	Insulation	Wall wrap
1 : Alcubond	Polystyrene extruded: R2.5 (R2.5)	No
2 : FR5 - Cast Concrete	Polystyrene extruded: R2.5 (R2.5)	No
3 : FR5 - Concrete Block Solid/Core Filled		No

External wall schedule

Wall type	Area (m^2)	Orientation	Zone name	Fixed shade	Eaves
1 : Alcubond	15.9	SSW	Kitchen/Living	No	No
1 : Alcubond	10.6	ESE	Kitchen/Living	No	No

Building Features

2 : FR5 - Cast Concrete	6.4	NNE	Kitchen/Living	Yes	Yes
2 : FR5 - Cast Concrete	3.6	ESE	Kitchen/Living	Yes	Yes
2 : FR5 - Cast Concrete	3.1	WNW	Kitchen/Living	Yes	No
2 : FR5 - Cast Concrete	7.9	ESE	Bedroom 2	Yes	Yes
3 : FR5 - Concrete Block Solid/Core Filled	9.5	NNE	Bedroom 2	No	No
2 : FR5 - Cast Concrete	4.3	SSW	Circulation	Yes	No
3 : FR5 - Concrete Block Solid/Core Filled	4.1	NNE	Circulation	No	No
1 : Alcubond	8.5	SSW	Bedroom 1	No	No
2 : FR5 - Cast Concrete	3.1	ESE	Bedroom 1	Yes	No
3 : FR5 - Concrete Block Solid/Core Filled	9.5	WNW	Bedroom 1	No	No
3 : FR5 - Concrete Block Solid/Core Filled	4.9	WNW	ENS	No	No
3 : FR5 - Concrete Block Solid/Core Filled	5.1	NNE	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	2.3	WNW	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	3.3	NNE	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	4.9	WNW	Bath	No	No

Internal wall type

Type	Area (m^2)	Insulation
1 : FR5 - Internal Plasterboard Stud Wall	72	

Floors

Location	Construction	Area (m^2)	Sub floor ventilation	Added insulation	Covering
Kitchen/Living	SuspSlab : 150mm: 150mm concrete slab	27.9	Enclosed	0.0	floattimber
Bedroom 2	SuspSlab : 150mm: 150mm concrete slab	10.7	Enclosed	0.0	Carpet
Circulation	SuspSlab : 150mm: 150mm concrete slab	11.4	Enclosed	0.0	floattimber
Bedroom 1	SuspSlab : 150mm: 150mm concrete slab	11.1	Enclosed	0.0	Carpet
ENS	SuspSlab : 150mm: 150mm concrete slab	5.1	Enclosed	0.0	Tiles
Bath	SuspSlab : 150mm: 150mm concrete slab	6	Enclosed	0.0	Tiles
L'dry	SuspSlab : 150mm: 150mm concrete slab	2.3	Enclosed	0.0	Tiles

Building Features

Ceiling type

Location	Material	Added insulation	Roof space above

Ceiling penetrations

Location	Number	Type	Width (mm)	Length (mm)	Seal/ unsealed
Kitchen/Living	12	Downlights	50	50	Sealed
Kitchen/Living	1	Exhaust Fans	180	180	Sealed
Bedroom 2	4	Downlights	50	50	Sealed
Circulation	4	Downlights	50	50	Sealed
Bedroom 1	4	Downlights	50	50	Sealed
Bath	1	Exhaust Fans	180	180	Sealed

Ceiling fans

Location	Number	Diameter (mm)

Roof type

Material	Added insulation	Roof colour
Ceil: Ceiling	0.0	light

Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **GGOECQMBNA** Date of Certificate: **29 Nov 2017** ★ Star rating: **6.2**

Additional information

Explanatory notes

About this report

Residential energy ratings address the quality of the building fabric i.e. walls, windows, floors and roof/ceilings. Ratings do not cover the energy or water efficiency of appliances including heating and cooling, hot water, dishwashers, ovens, fridges, TVs etc. or solar panel or water tank requirements. The efficiency or specification of these items is generally covered by other regulations, standards or guidelines.

General Information

A NatHERS House Energy Rating is a comprehensive, dynamic computer modelling evaluation of the floorplans, elevations and specifications to predict an energy load of a home. Not all of us use our homes in the same way, so ratings are generated using standard assumptions. This means homes can be compared across the country.

The actual energy consumption of your home may vary significantly from the predicted energy load figures in this report depending on issues such as the size of your household and your personal preferences, e.g. in terms of heating or cooling.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparative purposes between different house designs and for demonstrating that the design meets the required regulatory compliance.

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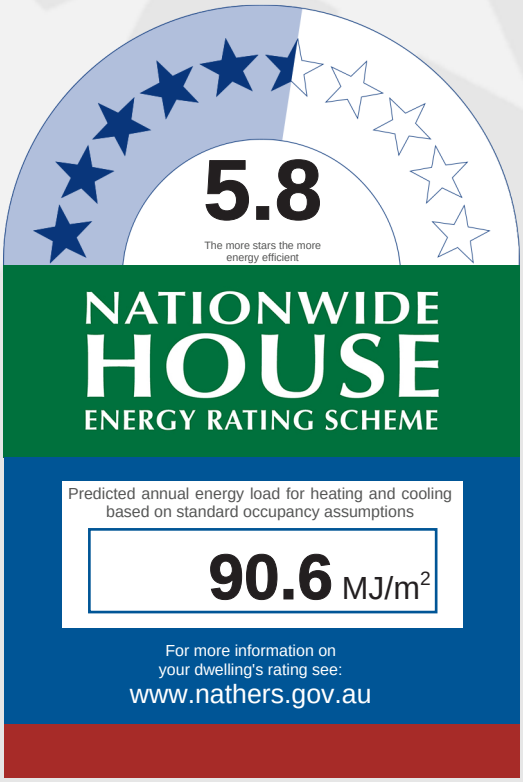
Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **NK5MUAYI7Y** Date of Certificate: **29 Nov 2017** ★ Star rating: **5.8**

Assessor details

Accreditation number:	**20594**
Name:	**Suruchi Pathak**
Organisation:	**Suruchi Pathak**
Email:	**suruchipathak@gmail.com**
Phone:	**0434220286**
Declaration of interest:	**No potential conflicts of interest to declare**
Software:	**FirstRate5: 5.2.7 (3.13)**
AAO:	**ABSA**



Overview

Dwelling details

Address:	**1302, 24-26 Railway Parade**		
Suburb:	**Westmead**		
State:	**NSW**	Postcode:	**2145**
Type:	**New Home**	NCC Class:	**Class 2**
Lot/DP number:	**1/952720**	NatHERS climate zone:	**28**
Exposure:	**exposed**		

Key construction and insulation materials

(see following pages for details)

Construction:	Wall:	**Alucobond Panel,Conc100+PB**
	Roof:	**Neighbour above**
	Floor:	**Concrete**
Insulation:	Wall:	**R2.5(Added to all external)**
	Roof:	**NA**
	Floor:	**NA**
Glazing:		**Aluminum**
		Refer detailed report

Ceiling penetrations

(see following pages for details)

Sealed:	**24**
Unsealed:	**0**
TOTAL:**	**24**

Principal downlight type: **LED**

NOTE: This total is the maximum number of ceiling penetrations allowed to a ceiling (under a roof) for this certificate. **If this number is exceded in construction then this certificate IS NOT VALID and a new certificate is required. Loss of ceiling insulation for the penetrations listed has been taken into account with the rating.

Net floor area (m^2)

Conditioned:	**72.6**
Unconditioned:	**2.3**
Garage:	**-**
TOTAL:	**74.9**

Annual thermal performance loads (MJ/m^2)

Heating:	**48.4**
Cooling:	**42.2**
TOTAL:	**90.6**

Window selection - default windows only

Note on allowable window values: Only a 5% tolerance to the nominated SHGC window values shown on page 2 can be used with this rating.

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Plan documents

Plan ref/date:	**16-021 DA151-Rev5-3.10.2017**
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Building Features

Windows type and performance value

Window ID	Window type	U-value	SHGC
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27
ATB-003-04 B	Al Thermally Broken A DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27

Windows schedule

Window ID	Window no.	Height (mm)	Width (mm)	Orientation	Zone name	Outdoor shade
ATB-004-04 B	Opening 8	2660	2200	NNE	Kitchen/Living	No
ATB-004-04 B	Opening 16	2660	1355	WNW	Kitchen/Living	No
ATB-004-04 B	Opening 24	2660	1365	WNW	Kitchen/Living	No
ATB-004-04 B	Opening 1	2660	1067	SSW	Kitchen/Living	No
ATB-003-04 B	Opening 2	2660	1220	SSW	Kitchen/Living	No
ATB-003-04 B	Opening 18	2660	1210	SSW	Kitchen/Living	No
ATB-004-04 B	Opening 5	2660	2954	WNW	Bedroom 2	No
ATB-004-04 B	Opening 19	2660	1541	SSW	Circulation	No
ATB-004-04 B	Opening 3	2660	1075	SSW	Bedroom 1	No
ATB-003-04 B	Opening 20	2660	1075	SSW	Bedroom 1	No

Roof windows and skylight type and performance value

ID	Window type	U-value	SHGC

Roof window and skylight schedule

ID	Roof window/ skylight no.	Area (m^2)	Orientation	Zone name	Outdoor shade	Indoor shade/ diffuser

External wall type

Type	Insulation	Wall wrap
1 : FR5 - Cast Concrete	Polystyrene extruded: R2.5 (R2.5)	No
2 : Alcubond	Polystyrene extruded: R2.5 (R2.5)	No
3 : FR5 - Concrete Block Solid/Core Filled		No

External wall schedule

Wall type	Area (m^2)	Orientation	Zone name	Fixed shade	Eaves
1 : FR5 - Cast Concrete	3.1	ESE	Kitchen/Living	Yes	No
1 : FR5 - Cast Concrete	3.6	WNW	Kitchen/Living	No	Yes

Building Features

1 : FR5 - Cast Concrete	6.4	NNE	Kitchen/Living	Yes	Yes
2 : Alcubond	10.6	WNW	Kitchen/Living	No	No
2 : Alcubond	15.9	SSW	Kitchen/Living	No	No
3 : FR5 - Concrete Block Solid/Core Filled	9.5	NNE	Bedroom 2	No	No
1 : FR5 - Cast Concrete	7.9	WNW	Bedroom 2	No	Yes
3 : FR5 - Concrete Block Solid/Core Filled	4.1	NNE	Circulation	No	No
1 : FR5 - Cast Concrete	4.3	SSW	Circulation	Yes	No
3 : FR5 - Concrete Block Solid/Core Filled	9.5	ESE	Bedroom 1	No	No
1 : FR5 - Cast Concrete	3.1	WNW	Bedroom 1	Yes	No
2 : Alcubond	8.5	SSW	Bedroom 1	No	No
3 : FR5 - Concrete Block Solid/Core Filled	4.9	ESE	ENS	No	No
3 : FR5 - Concrete Block Solid/Core Filled	4.9	ESE	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	3.3	NNE	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	2.3	ESE	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	5.1	NNE	Bath	No	No

Internal wall type

Type	Area (m^2)	Insulation
1 : FR5 - Internal Plasterboard Stud Wall	72	

Floors

Location	Construction	Area (m^2)	Sub floor ventilation	Added insulation	Covering
Kitchen/Living	SuspSlab : 150mm: 150mm concrete slab	28.3	Enclosed	0.0	floattimber
Bedroom 2	SuspSlab : 150mm: 150mm concrete slab	10.7	Enclosed	0.0	Carpet
Circulation	SuspSlab : 150mm: 150mm concrete slab	11.4	Enclosed	0.0	floattimber
Bedroom 1	SuspSlab : 150mm: 150mm concrete slab	11.1	Enclosed	0.0	Carpet
ENS	SuspSlab : 150mm: 150mm concrete slab	5.1	Enclosed	0.0	Tiles
Bath	SuspSlab : 150mm: 150mm concrete slab	6	Enclosed	0.0	Tiles
L'dry	SuspSlab : 150mm: 150mm concrete slab	2.3	Enclosed	0.0	Tiles

Building Features

Ceiling type

Location	Material	Added insulation	Roof space above

Ceiling penetrations

Location	Number	Type	Width (mm)	Length (mm)	Seal/ unsealed
Kitchen/Living	10	Downlights	50	50	Sealed
Kitchen/Living	1	Exhaust Fans	180	180	Sealed
Bedroom 2	4	Downlights	50	50	Sealed
Circulation	4	Downlights	50	50	Sealed
Bedroom 1	4	Downlights	50	50	Sealed
Bath	1	Exhaust Fans	180	180	Sealed

Ceiling fans

Location	Number	Diameter (mm)

Roof type

Material	Added insulation	Roof colour
Ceil: Ceiling	0.0	light

Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **NK5MUAYI7Y** Date of Certificate: **29 Nov 2017** ★ Star rating: **5.8**

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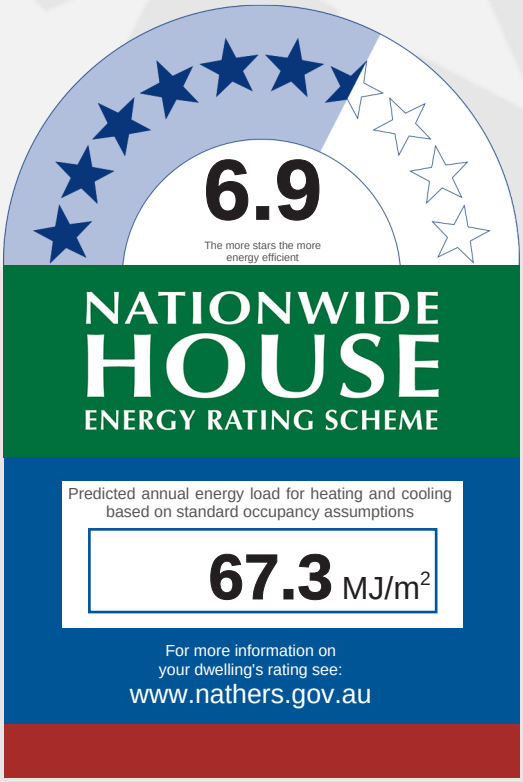
Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **G8EU1M0Z1T** Date of Certificate: **4 Dec 2017** ★ Star rating: **6.9**

Assessor details

Accreditation number:	**20594**
Name:	**Suruchi Pathak**
Organisation:	**Suruchi Pathak**
Email:	**suruchipathak@gmail.com**
Phone:	**0434220286**
Declaration of interest:	**No potential conflicts of interest to declare**
Software:	**FirstRate5: 5.2.7 (3.13)**
AAO:	**ABSA**



Overview

Dwelling details

Address:	**1303, 24-26 Railway Parade**		
Suburb:	**Westmead**		
State:	**NSW**	Postcode:	**2145**
Type:	**New Home**	NCC Class:	**Class 2**
Lot/DP number:	**1/952720**	NatHERS climate zone:	**28**
Exposure:	**exposed**		

Key construction and insulation materials

(see following pages for details)

Construction:	Wall:	**Alucobond Panel,Conc100+PB**
	Roof:	**Neighbour above**
	Floor:	**Concrete**
Insulation:	Wall:	**R2.5(Added to all external)**
	Roof:	**NA**
	Floor:	**NA**
Glazing:		**Aluminum**
		Refer detailed report

Ceiling penetrations

(see following pages for details)

Sealed:	**20**
Unsealed:	**0**
TOTAL:**	**20**

Principal downlight type: **LED**

NOTE: This total is the maximum number of ceiling penetrations allowed to a ceiling (under a roof) for this certificate. **If this number is exceded in construction then this certificate IS NOT VALID and a new certificate is required. Loss of ceiling insulation for the penetrations listed has been taken into account with the rating.

Net floor area (m^2)

Conditioned:	**47.5**
Unconditioned:	**4.7**
Garage:	**-**
TOTAL:	**52.2**

Annual thermal performance loads (MJ/m^2)

Heating:	**24.7**
Cooling:	**42.6**
TOTAL:	**67.3**

Window selection - default windows only

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Plan documents

Plan ref/date:	**16-021 DA151-Rev5-3.10.2017**
Prepared by:	**Sissons Architects**

Building Features

Windows type and performance value

Window ID	Window type	U-value	SHGC
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27
ATB-003-04 B	Al Thermally Broken A DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27

Windows schedule

Window ID	Window no.	Height (mm)	Width (mm)	Orientation	Zone name	Outdoor shade
ATB-004-04 B	Opening 49	2660	3000	WNW	Kitchen/Living 8	No
ATB-004-04 B	Opening 41	2660	2220	NNE	Kitchen/Living 8	No
ATB-003-04 B	Opening 28	2660	1415	WNW	Kitchen/Living 8	No
ATB-004-04 B	Opening 52	2660	1385	WNW	Kitchen/Living 8	No
ATB-003-04 B	Opening 29	2660	1080	WNW	Bedroom	No
ATB-004-04 B	Opening 51	2660	1070	WNW	Bedroom	No

Roof windows and skylight type and performance value

ID	Window type	U-value	SHGC

Roof window and skylight schedule

ID	Roof window/ skylight no.	Area (m^2)	Orientation	Zone name	Outdoor shade	Indoor shade/ diffuser

External wall type

Type	Insulation	Wall wrap
1 : FR5 - Cast Concrete	Polystyrene extruded: R2.5 (R2.5)	No
2 : FR5 - Concrete Block Solid/Core Filled		No
3 : Alcubond	Polystyrene extruded: R2.5 (R2.5)	No

External wall schedule

Wall type	Area (m^2)	Orientation	Zone name	Fixed shade	Eaves
1 : FR5 - Cast Concrete	3.2	SSW	Kitchen/Living 8	No	No
2 : FR5 - Concrete Block Solid/Core Filled	12.8	SSW	Kitchen/Living 8	No	No
2 : FR5 - Concrete Block Solid/Core Filled	19.5	ESE	Kitchen/Living 8	No	No
2 : FR5 - Concrete Block Solid/Core Filled	2	NNE	Kitchen/Living 8	No	No
1 : FR5 - Cast Concrete	8.5	WNW	Kitchen/Living 8	Yes	Yes
1 : FR5 - Cast Concrete	6.4	NNE	Kitchen/Living 8	Yes	Yes

Building Features

3 : Alcubond	11	WNW	Kitchen/Living 8	No	No
1 : FR5 - Cast Concrete	6.4	SSW	Bedroom	Yes	No
2 : FR5 - Concrete Block Solid/Core Filled	3.2	NNE	Bedroom	No	No
1 : FR5 - Cast Concrete	6.4	NNE	Bedroom	No	No
3 : Alcubond	8.1	WNW	Bedroom	No	No
2 : FR5 - Concrete Block Solid/Core Filled	8	ESE	Bath	No	No
2 : FR5 - Concrete Block Solid/Core Filled	4.1	NNE	Bath	No	No

Internal wall type

Type	Area (m^2)	Insulation
1 : FR5 - Internal Plasterboard Stud Wall	15.4	

Floors

Location	Construction	Area (m^2)	Sub floor ventilation	Added insulation	Covering
Kitchen/Living 8	SuspSlab : 150mm: 150mm concrete slab	36.5	Enclosed	0.0	floattimber
Bedroom	SuspSlab : 150mm: 150mm concrete slab	11	Enclosed	0.0	Carpet
Bath	SuspSlab : 150mm: 150mm concrete slab	4.7	Enclosed	0.0	Tiles

Ceiling type

Location	Material	Added insulation	Roof space above

Ceiling penetrations

Location	Number	Type	Width (mm)	Length (mm)	Seal/ unsealed
Kitchen/Living 8	1	Exhaust Fans	180	180	Sealed
Kitchen/Living 8	14	Downlights	50	50	Sealed
Bedroom	4	Downlights	50	50	Sealed
Bath	1	Exhaust Fans	180	180	Sealed

Ceiling fans

Location	Number	Diameter (mm)

Roof type

Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **G8EU1M0Z1T** Date of Certificate: **4 Dec 2017** ★ Star rating: **6.9**

Building Features

Material	Added insulation	Roof colour
Ceil: Ceiling	0.0	medium

* Nationwide House Energy Rating Scheme (NatHERS) is an initiative of the Australian, state and territory governments. For more details see www.nathers.gov.au

Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **G8EU1M0Z1T** Date of Certificate: **4 Dec 2017** ★ Star rating: **6.9**

Additional information

Explanatory notes

About this report

Residential energy ratings address the quality of the building fabric i.e. walls, windows, floors and roof/ceilings. Ratings do not cover the energy or water efficiency of appliances including heating and cooling, hot water, dishwashers, ovens, fridges, TVs etc. or solar panel or water tank requirements. The efficiency or specification of these items is generally covered by other regulations, standards or guidelines.

General Information

A NatHERS House Energy Rating is a comprehensive, dynamic computer modelling evaluation of the floorplans, elevations and specifications to predict an energy load of a home. Not all of us use our homes in the same way, so ratings are generated using standard assumptions. This means homes can be compared across the country.

The actual energy consumption of your home may vary significantly from the predicted energy load figures in this report depending on issues such as the size of your household and your personal preferences, e.g. in terms of heating or cooling.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparative purposes between different house designs and for demonstrating that the design meets the required regulatory compliance.

Homes that are energy efficient use less energy, are warmer in winter, cooler in summer and cost less to run. The higher the star rating the more energy efficient.

This NatHERS House Energy Rating report was carefully prepared by your assessor on the basis of comprehensive modelling using standard procedures to rate your home using an underlying engine developed by the Australian Commonwealth Scientific and Industrial Research Organisation (CSIRO).

All information relating to energy loads presented in this report is based on a range of standard assumptions in order to allow for comparisons with reports prepared for other homes and to demonstrate minimum regulatory compliance. The standard assumptions include figures for occupancy, indoor air temperature and are based on a unique climate file for your region.

Accredited Assessors

To ensure you get a high-quality, professional NatHERS House Energy Rating report, you should always use an accredited assessor, 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. Non-accredited assessors do not have this level of quality assurance or any on-going training requirements.

If you have any questions or concerns about this report, please direct them to your assessor in the first instance.

If your assessor is unable to address your questions or concerns, please contact their AAO listed under ‘assessor details’. You can also find a range of information about accredited assessors on the AAO websites.

Disclaimer

The energy values quoted are for comparison purposes only; they are not a prediction of actual energy use. This rating only applies to the floor plan, construction details, orientation and climate as submitted and included in the attached drawing set that bears a stamp with the same number as this certificate. Changes to any of these details could affect the rating.

Contact

For more information on the Nationwide House Energy Rating Scheme (NatHERS), visit www.nathers.gov.au

For more information on energy efficient design and insulation visit www.yourhome.gov.au

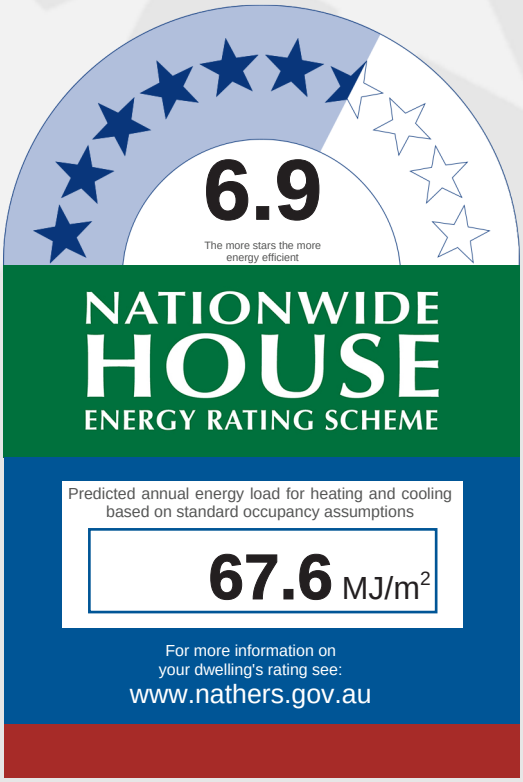
* Nationwide House Energy Rating Scheme (NatHERS) is an initiative of the Australian, state and territory governments. For more details see www.nathers.gov.au

Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **09CEBEVIK9** Date of Certificate: **4 Dec 2017** ★ Star rating: **6.9**

Assessor details

Accreditation number:	**20594**
Name:	**Suruchi Pathak**
Organisation:	**Suruchi Pathak**
Email:	**suruchipathak@gmail.com**
Phone:	**0434220286**
Declaration of interest:	**No potential conflicts of interest to declare**
Software:	**FirstRate5: 5.2.7 (3.13)**
AAO:	**ABSA**



Overview

Dwelling details

Address:	**1304, 24-26 Railway Parade**		
Suburb:	**Westmead**		
State:	**NSW**	Postcode:	**2145**
Type:	**New Home**	NCC Class:	**Class 2**
Lot/DP number:	**1/952720**	NatHERS climate zone:	**28**
Exposure:	**exposed**		

Key construction and insulation materials

(see following pages for details)

Construction:	Wall:	**Alucobond Panel,Conc100+PB**
	Roof:	**Neighbour above**
	Floor:	**Concrete**
Insulation:	Wall:	**R2.5(Added to all external)**
	Roof:	**NA**
	Floor:	**NA**
Glazing:		**Aluminum**
		Refer detailed report

Ceiling penetrations

(see following pages for details)

Sealed:	**26**
Unsealed:	**0**
TOTAL:**	**26**

Principal downlight type: **LED**

NOTE: This total is the maximum number of ceiling penetrations allowed to a ceiling (under a roof) for this certificate. **If this number is exceded in construction then this certificate IS NOT VALID and a new certificate is required. Loss of ceiling insulation for the penetrations listed has been taken into account with the rating.

Net floor area (m^2)

Conditioned:	**73.7**
Unconditioned:	**2.3**
Garage:	**-**
TOTAL:	**76**

Annual thermal performance loads (MJ/m^2)

Heating:	**31.8**
Cooling:	**35.8**
TOTAL:	**67.6**

Window selection - default windows only

Note on allowable window values: Only a 5% tolerance to the nominated SHGC window values shown on page 2 can be used with this rating.

Note: Only a +/-5% SHGC tolerance is allowed with this rating.

NB: This tolerance ONLY applies to SHGC, the U-value can always be lower but not higher than the values stated on page 2.

If any of the windows selected are outside the 5% tolerance then this certificate is no longer valid and the dwelling will need to be rerated to confirm compliance.

Plan documents

Plan ref/date:	**16-021 DA151-Rev5-3.10.2017**
Prepared by:	**Sissons Architects**

Scan to access this certificate online and confirm this is valid.

https://www.fr5.com.au/QRCodeLanding?PublicId=09CEBEVIK9

* Nationwide House Energy Rating Scheme (NatHERS) is an initiative of the Australian, state and territory governments. For more details see www.nathers.gov.au

Building Features

Windows type and performance value

Window ID	Window type	U-value	SHGC
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27
ATB-003-04 B	Al Thermally Broken A DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27

Windows schedule

Window ID	Window no.	Height (mm)	Width (mm)	Orientation	Zone name	Outdoor shade
ATB-004-04 B	Opening 1	2660	1067	NNE	Kitchen/Living	No
ATB-003-04 B	Opening 2	2660	1220	NNE	Kitchen/Living	No
ATB-003-04 B	Opening 18	2660	1210	NNE	Kitchen/Living	No
ATB-004-04 B	Opening 16	2660	1355	WNW	Kitchen/Living	No
ATB-004-04 B	Opening 24	2660	1365	WNW	Kitchen/Living	No
ATB-004-04 B	Opening 8	2660	2200	SSW	Kitchen/Living	No
ATB-004-04 B	Opening 5	2660	2954	WNW	Bedroom 2	No
ATB-004-04 B	Opening 19	2660	1541	NNE	Circulation	No
ATB-004-04 B	Opening 3	2660	1075	NNE	Bedroom 1	No
ATB-003-04 B	Opening 20	2660	1075	NNE	Bedroom 1	No

Roof windows and skylight type and performance value

ID	Window type	U-value	SHGC

Roof window and skylight schedule

ID	Roof window/ skylight no.	Area (m^2)	Orientation	Zone name	Outdoor shade	Indoor shade/ diffuser

External wall type

Type	Insulation	Wall wrap
1 : Alcubond	Polystyrene extruded: R2.5 (R2.5)	No
2 : FR5 - Cast Concrete	Polystyrene extruded: R2.5 (R2.5)	No
3 : FR5 - Concrete Block Solid/Core Filled		No

External wall schedule

Wall type	Area (m^2)	Orientation	Zone name	Fixed shade	Eaves
1 : Alcubond	15.9	NNE	Kitchen/Living	No	No
1 : Alcubond	10.6	WNW	Kitchen/Living	No	No

Building Features

2 : FR5 - Cast Concrete	6.4	SSW	Kitchen/Living	Yes	Yes
2 : FR5 - Cast Concrete	3.6	WNW	Kitchen/Living	Yes	Yes
2 : FR5 - Cast Concrete	3.1	ESE	Kitchen/Living	Yes	No
2 : FR5 - Cast Concrete	7.9	WNW	Bedroom 2	Yes	Yes
3 : FR5 - Concrete Block Solid/Core Filled	9.5	SSW	Bedroom 2	No	No
2 : FR5 - Cast Concrete	4.3	NNE	Circulation	Yes	No
3 : FR5 - Concrete Block Solid/Core Filled	4.1	SSW	Circulation	No	No
1 : Alcubond	8.5	NNE	Bedroom 1	No	No
2 : FR5 - Cast Concrete	3.1	WNW	Bedroom 1	Yes	No
3 : FR5 - Concrete Block Solid/Core Filled	9.5	ESE	Bedroom 1	No	No
3 : FR5 - Concrete Block Solid/Core Filled	4.9	ESE	ENS	No	No
3 : FR5 - Concrete Block Solid/Core Filled	8.5	SSW	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	7.1	ESE	Bath	No	No

Internal wall type

Type	Area (m^2)	Insulation
1 : FR5 - Internal Plasterboard Stud Wall	72	

Floors

Location	Construction	Area (m^2)	Sub floor ventilation	Added insulation	Covering
Kitchen/Living	SuspSlab : 150mm: 150mm concrete slab	28.1	Enclosed	0.0	floattimber
Bedroom 2	SuspSlab : 150mm: 150mm concrete slab	10.7	Enclosed	0.0	Carpet
Circulation	SuspSlab : 150mm: 150mm concrete slab	11.4	Enclosed	0.0	floattimber
Bedroom 1	SuspSlab : 150mm: 150mm concrete slab	11.3	Enclosed	0.0	Carpet
ENS	SuspSlab : 150mm: 150mm concrete slab	5.1	Enclosed	0.0	Tiles
Bath	SuspSlab : 150mm: 150mm concrete slab	7.1	Enclosed	0.0	Tiles
L'dry	SuspSlab : 150mm: 150mm concrete slab	2.3	Enclosed	0.0	Tiles

Ceiling type

Building Features

Location	Material	Added insulation	Roof space above
Kitchen/Living	Plasterboard	3.5	No
Bedroom 2	Plasterboard	3.5	No
Circulation	Plasterboard	3.5	No
Bedroom 1	Plasterboard	3.5	No
ENS	Plasterboard	3.5	No
Bath	Plasterboard	3.5	No
L'dry	Plasterboard	3.5	No

Ceiling penetrations

Location	Number	Type	Width (mm)	Length (mm)	Seal/ unsealed
Kitchen/Living	12	Downlights	50	50	Sealed
Kitchen/Living	1	Exhaust Fans	180	180	Sealed
Bedroom 2	4	Downlights	50	50	Sealed
Circulation	4	Downlights	50	50	Sealed
Bedroom 1	4	Downlights	50	50	Sealed
Bath	1	Exhaust Fans	180	180	Sealed

Ceiling fans

Location	Number	Diameter (mm)

Roof type

Material	Added insulation	Roof colour
SlabExt:Slab - Suspended Slab - External Insul : 150mm: 150mm Suspended Slab - External Insul	0.0	light

Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **09CEBEVIK9** Date of Certificate: **4 Dec 2017** ★ Star rating: **6.9**

Additional information

Explanatory notes

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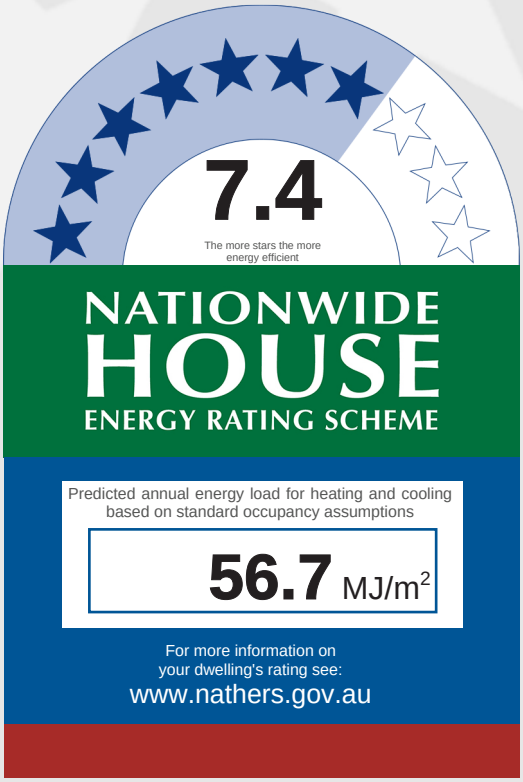
Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **HD259JXDVL** Date of Certificate: **4 Dec 2017** ★ Star rating: **7.4**

Assessor details

Accreditation number:	**20594**
Name:	**Suruchi Pathak**
Organisation:	**Suruchi Pathak**
Email:	**suruchipathak@gmail.com**
Phone:	**0434220286**
Declaration of interest:	**No potential conflicts of interest to declare**
Software:	**FirstRate5: 5.2.7 (3.13)**
AAO:	**ABSA**



Overview

Dwelling details

Address:	**1305, 24-26 Railway Parade**		
Suburb:	**Westmead**		
State:	**NSW**	Postcode:	**2145**
Type:	**New Home**	NCC Class:	**Class 2**
Lot/DP number:	**1/952720**	NatHERS climate zone:	**28**
Exposure:	**exposed**		

Key construction and insulation materials

(see following pages for details)

Construction:	Wall:	**Alucobond Panel,Conc100+PB**
	Roof:	**Neighbour above**
	Floor:	**Concrete**
Insulation:	Wall:	**R2.5(Added to all external)**
	Roof:	**NA**
	Floor:	**NA**
Glazing:		**Aluminum**
		Refer detailed report

Ceiling penetrations

(see following pages for details)

Sealed:	**48**
Unsealed:	**0**
TOTAL:**	**48**

Principal downlight type: **LED**

NOTE: This total is the maximum number of ceiling penetrations allowed to a ceiling (under a roof) for this certificate. **If this number is exceded in construction then this certificate IS NOT VALID and a new certificate is required. Loss of ceiling insulation for the penetrations listed has been taken into account with the rating.

Net floor area (m^2)

Conditioned:	**138.2**
Unconditioned:	**3.6**
Garage:	**-**
TOTAL:	**141.8**

Annual thermal performance loads (MJ/m^2)

Heating:	**20.9**
Cooling:	**35.8**
TOTAL:	**56.7**

Window selection - default windows only

Note on allowable window values: Only a 5% tolerance to the nominated SHGC window values shown on page 2 can be used with this rating.

Note: Only a +/-5% SHGC tolerance is allowed with this rating.

NB: This tolerance ONLY applies to SHGC, the U-value can always be lower but not higher than the values stated on page 2.

If any of the windows selected are outside the 5% tolerance then this certificate is no longer valid and the dwelling will need to be rerated to confirm compliance.

Plan documents

Plan ref/date:	**16-021 DA151-Rev5-3.10.2017**
Prepared by:	**Sissons Architects**

Scan to access this certificate online and confirm this is valid.

https://www.fr5.com.au/QRCodeLanding?PublicId=HD259JXDVL

* Nationwide House Energy Rating Scheme (NatHERS) is an initiative of the Australian, state and territory governments. For more details see www.nathers.gov.au

Building Features

Windows type and performance value

Window ID	Window type	U-value	SHGC
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27
ATB-003-04 B	Al Thermally Broken A DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27

Windows schedule

Window ID	Window no.	Height (mm)	Width (mm)	Orientation	Zone name	Outdoor shade
ATB-004-04 B	Opening 38	2660	4308	ESE	Kitchen/Living	No
ATB-004-04 B	Opening 39	2660	2842	SSW	Kitchen/Living	No
ATB-004-04 B	Opening 32	2660	1365	ESE	Kitchen/Living	No
ATB-004-04 B	Opening 33	2660	1330	ESE	Kitchen/Living	No
ATB-003-04 B	Opening 34	2660	1260	NNE	Kitchen/Living	No
ATB-003-04 B	Opening 35	2660	1261	NNE	Kitchen/Living	No
ATB-004-04 B	Opening 43	2660	1210	NNE	Kitchen/Living	No
ATB-004-04 B	Opening 36	2660	1532	NNE	Kitchen/Living	No
ATB-003-04 B	Opening 37	2660	1128	NNE	Kitchen/Living	No
ATB-004-04 B	Opening 44	2660	1095	NNE	Kitchen/Living	No
ATB-003-04 B	Opening 42	2660	1452	ESE	Bed1	No
ATB-003-04 B	Opening 40	2660	2010	ESE	Bedroom 2	No
ATB-003-04 B	Opening 41	2660	1128	ESE	Bed 3	No
ATB-004-04 B	Opening 45	2660	1070	ESE	Bed 3	No

Roof windows and skylight type and performance value

ID	Window type	U-value	SHGC

Roof window and skylight schedule

ID	Roof window/ skylight no.	Area (m^2)	Orientation	Zone name	Outdoor shade	Indoor shade/ diffuser

External wall type

Type	Insulation	Wall wrap
1 : FR5 - Concrete Block Solid/Core Filled		No
2 : FR5 - Cast Concrete	Polystyrene extruded: R2.5 (R2.5)	No
3 : Alcubond	Polystyrene extruded: R2.5 (R2.5)	No

External wall schedule

Building Features

Wall type	Area (m^2)	Orientation	Zone name	Fixed shade	Eaves
1 : FR5 - Concrete Block Solid/Core Filled	16.2	SSW	Kitchen/Living	No	No
2 : FR5 - Cast Concrete	12	ESE	Kitchen/Living	Yes	No
2 : FR5 - Cast Concrete	8.3	SSW	Kitchen/Living	Yes	Yes
3 : Alcubond	10.9	ESE	Kitchen/Living	No	No
3 : Alcubond	16.4	NNE	Kitchen/Living	No	No
2 : FR5 - Cast Concrete	3.3	WNW	Kitchen/Living	Yes	No
2 : FR5 - Cast Concrete	5.4	NNE	Kitchen/Living	Yes	No
2 : FR5 - Cast Concrete	3.3	ESE	Kitchen/Living	Yes	No
3 : Alcubond	8.8	NNE	Kitchen/Living	No	No
1 : FR5 - Concrete Block Solid/Core Filled	22.9	WNW	Kitchen/Living	No	No
1 : FR5 - Concrete Block Solid/Core Filled	8.1	WNW	Lory	No	No
1 : FR5 - Concrete Block Solid/Core Filled	2	NNE	Bath	No	No
1 : FR5 - Concrete Block Solid/Core Filled	9.8	WNW	Bath	No	No
1 : FR5 - Concrete Block Solid/Core Filled	8	SSW	Ensuite	No	No
1 : FR5 - Concrete Block Solid/Core Filled	5.3	WNW	Ensuite	No	No
1 : FR5 - Concrete Block Solid/Core Filled	5.5	SSW	Bed1	No	No
2 : FR5 - Cast Concrete	2.7	SSW	Bed1	No	No
3 : Alcubond	9.9	ESE	Bed1	No	No
1 : FR5 - Concrete Block Solid/Core Filled	4.4	WNW	Bed1	No	No
3 : Alcubond	9.9	ESE	Bedroom 2	No	No
3 : Alcubond	8.2	ESE	Bed 3	No	No
2 : FR5 - Cast Concrete	8.1	NNE	Bed 3	Yes	No

Internal wall type

Type	Area (m^2)	Insulation
1 : FR5 - Internal Plasterboard Stud Wall	83.3	

Floors

Location	Construction	Area (m^2)	Sub floor ventilation	Added insulation	Covering
Kitchen/Living	SuspSlab : 150mm: 150mm concrete slab	81.9	Enclosed	0.0	floattimber
Corridor	SuspSlab : 150mm: 150mm concrete slab	6.2	Enclosed	0.0	floattimber
Lory	SuspSlab : 150mm: 150mm concrete	3.6	Enclosed	0.0	Tiles

Building Features

	slab				
Bath	SuspSlab : 150mm: 150mm concrete slab	7.1	Enclosed	0.0	Tiles
Ensuite	SuspSlab : 150mm: 150mm concrete slab	5.9	Enclosed	0.0	Tiles
Bed1	SuspSlab : 150mm: 150mm concrete slab	16.4	Enclosed	0.0	Carpet
Bedroom 2	SuspSlab : 150mm: 150mm concrete slab	10.3	Enclosed	0.0	Carpet
Bed 3	SuspSlab : 150mm: 150mm concrete slab	10.3	Enclosed	0.0	Carpet

Ceiling type

Location	Material	Added insulation	Roof space above

Ceiling penetrations

Location	Number	Type	Width (mm)	Length (mm)	Seal/ unsealed
Kitchen/Living	1	Exhaust Fans	180	180	Sealed
Kitchen/Living	32	Downlights	50	50	Sealed
Bath	1	Exhaust Fans	180	180	Sealed
Bed1	6	Downlights	50	50	Sealed
Bedroom 2	4	Downlights	50	50	Sealed
Bed 3	4	Downlights	50	50	Sealed

Ceiling fans

Location	Number	Diameter (mm)

Roof type

Material	Added insulation	Roof colour
Ceil: Ceiling	0.0	medium

Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **HD259JXDVL** Date of Certificate: **4 Dec 2017** ★ Star rating: **7.4**

Additional information

Explanatory notes

About this report

Residential energy ratings address the quality of the building fabric i.e. walls, windows, floors and roof/ceilings. Ratings do not cover the energy or water efficiency of appliances including heating and cooling, hot water, dishwashers, ovens, fridges, TVs etc. or solar panel or water tank requirements. The efficiency or specification of these items is generally covered by other regulations, standards or guidelines.

General Information

A NatHERS House Energy Rating is a comprehensive, dynamic computer modelling evaluation of the floorplans, elevations and specifications to predict an energy load of a home. Not all of us use our homes in the same way, so ratings are generated using standard assumptions. This means homes can be compared across the country.

The actual energy consumption of your home may vary significantly from the predicted energy load figures in this report depending on issues such as the size of your household and your personal preferences, e.g. in terms of heating or cooling.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparative purposes between different house designs and for demonstrating that the design meets the required regulatory compliance.

Homes that are energy efficient use less energy, are warmer in winter, cooler in summer and cost less to run. The higher the star rating the more energy efficient.

This NatHERS House Energy Rating report was carefully prepared by your assessor on the basis of comprehensive modelling using standard procedures to rate your home using an underlying engine developed by the Australian Commonwealth Scientific and Industrial Research Organisation (CSIRO).

All information relating to energy loads presented in this report is based on a range of standard assumptions in order to allow for comparisons with reports prepared for other homes and to demonstrate minimum regulatory compliance. The standard assumptions include figures for occupancy, indoor air temperature and are based on a unique climate file for your region.

Accredited Assessors

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Disclaimer

The energy values quoted are for comparison purposes only; they are not a prediction of actual energy use. This rating only applies to the floor plan, construction details, orientation and climate as submitted and included in the attached drawing set that bears a stamp with the same number as this certificate. Changes to any of these details could affect the rating.

Contact

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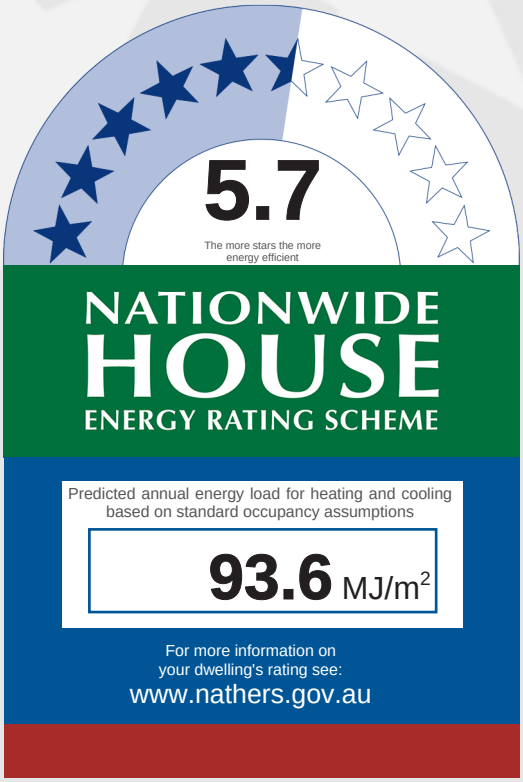
Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **817LG390T2** Date of Certificate: **4 Dec 2017** ★ Star rating: **5.7**

Assessor details

Accreditation number:	**20594**
Name:	**Suruchi Pathak**
Organisation:	**Suruchi Pathak**
Email:	**suruchipathak@gmail.com**
Phone:	**0434220286**
Declaration of interest:	**No potential conflicts of interest to declare**
Software:	**FirstRate5: 5.2.7 (3.13)**
AAO:	**ABSA**



Overview

Dwelling details

Address:	**1401, 24-26 Railway Parade**		
Suburb:	**Westmead**		
State:	**NSW**	Postcode:	**2145**
Type:	**New Home**	NCC Class:	**Class 2**
Lot/DP number:	**1/952720**	NatHERS climate zone:	**28**
Exposure:	**exposed**		

Key construction and insulation materials

(see following pages for details)

Construction:	Wall:	**Alucobond Panel,Conc100+PB**
	Roof:	**Concrete**
	Floor:	**Concrete**
Insulation:	Wall:	**R2.5(Added to all external)**
	Roof:	**R3.5+Ext insulation**
	Floor:	**NA**
Glazing:		**Aluminum**
		Refer detailed report

Ceiling penetrations

(see following pages for details)

Sealed:	**26**
Unsealed:	**0**
TOTAL:**	**26**

Principal downlight type: **LED**

NOTE: This total is the maximum number of ceiling penetrations allowed to a ceiling (under a roof) for this certificate. **If this number is exceded in construction then this certificate IS NOT VALID and a new certificate is required. Loss of ceiling insulation for the penetrations listed has been taken into account with the rating.

Net floor area (m^2)

Conditioned:	**72.3**
Unconditioned:	**2.3**
Garage:	**-**
TOTAL:	**74.6**

Annual thermal performance loads (MJ/m^2)

Heating:	**59.1**
Cooling:	**34.5**
TOTAL:	**93.6**

Window selection - default windows only

Note on allowable window values: Only a 5% tolerance to the nominated SHGC window values shown on page 2 can be used with this rating.

Note: Only a +/-5% SHGC tolerance is allowed with this rating.

NB: This tolerance ONLY applies to SHGC, the U-value can always be lower but not higher than the values stated on page 2.

If any of the windows selected are outside the 5% tolerance then this certificate is no longer valid and the dwelling will need to be rerated to confirm compliance.

Scan to access this certificate online and confirm this is valid.

https://www.fr5.com.au/QRCodeLanding?PublicId=817LG390T2

Plan documents

Plan ref/date:	**16-021 DA151-Rev5-3.10.2017**
Prepared by:	**Sissons Architects**

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Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **817LG390T2** Date of Certificate: **4 Dec 2017** ★ Star rating: **5.7**

Building Features

Windows type and performance value

Window ID	Window type	U-value	SHGC
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27
ATB-003-04 B	Al Thermally Broken A DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27

Windows schedule

Window ID	Window no.	Height (mm)	Width (mm)	Orientation	Zone name	Outdoor shade
ATB-004-04 B	Opening 1	2660	1200	SSW	Kitchen/Living	No
ATB-003-04 B	Opening 2	2660	1220	SSW	Kitchen/Living	No
ATB-003-04 B	Opening 18	2660	1210	SSW	Kitchen/Living	No
ATB-004-04 B	Opening 16	2660	1355	ESE	Kitchen/Living	No
ATB-004-04 B	Opening 24	2660	1365	ESE	Kitchen/Living	No
ATB-004-04 B	Opening 8	2660	2200	NNE	Kitchen/Living	No
ATB-004-04 B	Opening 5	2660	2960	ESE	Bedroom 2	No
ATB-004-04 B	Opening 19	2660	1560	SSW	Circulation	No
ATB-004-04 B	Opening 3	2660	1075	SSW	Bedroom 1	No
ATB-003-04 B	Opening 20	2660	1075	SSW	Bedroom 1	No

Roof windows and skylight type and performance value

ID	Window type	U-value	SHGC

Roof window and skylight schedule

ID	Roof window/ skylight no.	Area (m^2)	Orientation	Zone name	Outdoor shade	Indoor shade/ diffuser

External wall type

Type	Insulation	Wall wrap
1 : Alcubond	Polystyrene extruded: R2.5 (R2.5)	No
2 : FR5 - Cast Concrete	Polystyrene extruded: R2.5 (R2.5)	No
3 : FR5 - Concrete Block Solid/Core Filled		No

External wall schedule

Wall type	Area (m^2)	Orientation	Zone name	Fixed shade	Eaves
1 : Alcubond	15.9	SSW	Kitchen/Living	No	No
1 : Alcubond	10.6	ESE	Kitchen/Living	No	No

Building Features

2 : FR5 - Cast Concrete	6.4	NNE	Kitchen/Living	Yes	Yes
2 : FR5 - Cast Concrete	3.6	ESE	Kitchen/Living	Yes	Yes
2 : FR5 - Cast Concrete	3.1	WNW	Kitchen/Living	Yes	No
2 : FR5 - Cast Concrete	7.9	ESE	Bedroom 2	Yes	Yes
3 : FR5 - Concrete Block Solid/Core Filled	9.5	NNE	Bedroom 2	No	No
2 : FR5 - Cast Concrete	4.3	SSW	Circulation	Yes	No
3 : FR5 - Concrete Block Solid/Core Filled	4.1	NNE	Circulation	No	No
1 : Alcubond	8.5	SSW	Bedroom 1	No	No
2 : FR5 - Cast Concrete	3.1	ESE	Bedroom 1	Yes	No
3 : FR5 - Concrete Block Solid/Core Filled	9.5	WNW	Bedroom 1	No	No
3 : FR5 - Concrete Block Solid/Core Filled	4.9	WNW	ENS	No	No
3 : FR5 - Concrete Block Solid/Core Filled	5.1	NNE	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	2.3	WNW	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	3.3	NNE	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	4.9	WNW	Bath	No	No

Internal wall type

Type	Area (m^2)	Insulation
1 : FR5 - Internal Plasterboard Stud Wall	72	

Floors

Location	Construction	Area (m^2)	Sub floor ventilation	Added insulation	Covering
Kitchen/Living	SuspSlab : 150mm: 150mm concrete slab	27.9	Enclosed	0.0	floattimber
Bedroom 2	SuspSlab : 150mm: 150mm concrete slab	10.7	Enclosed	0.0	Carpet
Circulation	SuspSlab : 150mm: 150mm concrete slab	11.4	Enclosed	0.0	floattimber
Bedroom 1	SuspSlab : 150mm: 150mm concrete slab	11.1	Enclosed	0.0	Carpet
ENS	SuspSlab : 150mm: 150mm concrete slab	5.1	Enclosed	0.0	Tiles
Bath	SuspSlab : 150mm: 150mm concrete slab	6	Enclosed	0.0	Tiles
L'dry	SuspSlab : 150mm: 150mm concrete slab	2.3	Enclosed	0.0	Tiles

Building Features

Ceiling type

Location	Material	Added insulation	Roof space above
Kitchen/Living	Plasterboard	3.5	No
Bedroom 2	Plasterboard	3.5	No
Circulation	Plasterboard	3.5	No
Bedroom 1	Plasterboard	3.5	No
ENS	Plasterboard	3.5	No
Bath	Plasterboard	3.5	No
L'dry	Plasterboard	3.5	No

Ceiling penetrations

Location	Number	Type	Width (mm)	Length (mm)	Seal/ unsealed
Kitchen/Living	12	Downlights	50	50	Sealed
Kitchen/Living	1	Exhaust Fans	180	180	Sealed
Bedroom 2	4	Downlights	50	50	Sealed
Circulation	4	Downlights	50	50	Sealed
Bedroom 1	4	Downlights	50	50	Sealed
Bath	1	Exhaust Fans	180	180	Sealed

Ceiling fans

Location	Number	Diameter (mm)

Roof type

Material	Added insulation	Roof colour
Slab:Slab - Suspended Slab : 200mm: 200mm Suspended Slab	0.0	light

Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **817LG390T2** Date of Certificate: **4 Dec 2017** ★ Star rating: **5.7**

Additional information

Explanatory notes

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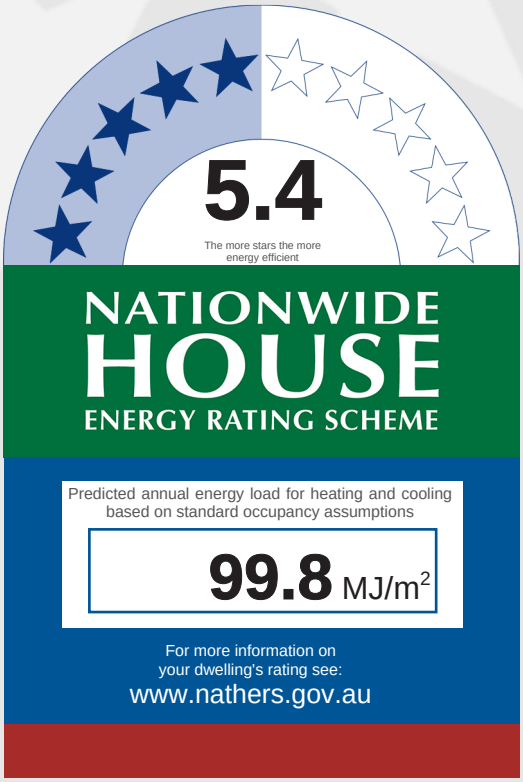
Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **IAV536T26H** Date of Certificate: **4 Dec 2017** ★ Star rating: **5.4**

Assessor details

Accreditation number:	**20594**
Name:	**Suruchi Pathak**
Organisation:	**Suruchi Pathak**
Email:	**suruchipathak@gmail.com**
Phone:	**0434220286**
Declaration of interest:	**No potential conflicts of interest to declare**
Software:	**FirstRate5: 5.2.7 (3.13)**
AAO:	**ABSA**



Overview

Dwelling details

Address:	**1402, 24-26 Railway Parade**		
Suburb:	**Westmead**		
State:	**NSW**	Postcode:	**2145**
Type:	**New Home**	NCC Class:	**Class 2**
Lot/DP number:	**1/952720**	NatHERS climate zone:	**28**
Exposure:	**exposed**		

Key construction and insulation materials

(see following pages for details)

Construction:	Wall:	**Alucobond Panel,Conc100+PB**
	Roof:	**Concrete**
	Floor:	**Concrete**
Insulation:	Wall:	**R2.5(Added to all external)**
	Roof:	**R3.5**
	Floor:	**NA**
Glazing:		**Aluminum**
		Refer detailed report

Ceiling penetrations

(see following pages for details)

Sealed:	**24**
Unsealed:	**0**
TOTAL:**	**24**

Principal downlight type: **LED**

NOTE: This total is the maximum number of ceiling penetrations allowed to a ceiling (under a roof) for this certificate. **If this number is exceded in construction then this certificate IS NOT VALID and a new certificate is required. Loss of ceiling insulation for the penetrations listed has been taken into account with the rating.

Net floor area (m^2)

Conditioned:	**72.6**
Unconditioned:	**2.3**
Garage:	**-**
TOTAL:	**74.9**

Annual thermal performance loads (MJ/m^2)

Heating:	**59.6**
Cooling:	**40.2**
TOTAL:	**99.8**

Window selection - default windows only

Note on allowable window values: Only a 5% tolerance to the nominated SHGC window values shown on page 2 can be used with this rating.

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Plan documents

Plan ref/date:	**16-021 DA151-Rev5-3.10.2017**
Prepared by:	**Sissons Architects**

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Building Features

Windows type and performance value

Window ID	Window type	U-value	SHGC
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27
ATB-003-04 B	Al Thermally Broken A DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27

Windows schedule

Window ID	Window no.	Height (mm)	Width (mm)	Orientation	Zone name	Outdoor shade
ATB-004-04 B	Opening 8	2660	2200	NNE	Kitchen/Living	No
ATB-004-04 B	Opening 16	2660	1355	WNW	Kitchen/Living	No
ATB-004-04 B	Opening 24	2660	1365	WNW	Kitchen/Living	No
ATB-004-04 B	Opening 1	2660	1067	SSW	Kitchen/Living	No
ATB-003-04 B	Opening 2	2660	1220	SSW	Kitchen/Living	No
ATB-003-04 B	Opening 18	2660	1210	SSW	Kitchen/Living	No
ATB-004-04 B	Opening 5	2660	2954	WNW	Bedroom 2	No
ATB-004-04 B	Opening 19	2660	1541	SSW	Circulation	No
ATB-004-04 B	Opening 3	2660	1075	SSW	Bedroom 1	No
ATB-003-04 B	Opening 20	2660	1075	SSW	Bedroom 1	No

Roof windows and skylight type and performance value

ID	Window type	U-value	SHGC

Roof window and skylight schedule

ID	Roof window/ skylight no.	Area (m^2)	Orientation	Zone name	Outdoor shade	Indoor shade/ diffuser

External wall type

Type	Insulation	Wall wrap
1 : FR5 - Cast Concrete	Polystyrene extruded: R2.5 (R2.5)	No
2 : Alcubond	Polystyrene extruded: R2.5 (R2.5)	No
3 : FR5 - Concrete Block Solid/Core Filled		No

External wall schedule

Wall type	Area (m^2)	Orientation	Zone name	Fixed shade	Eaves
1 : FR5 - Cast Concrete	3.1	ESE	Kitchen/Living	Yes	No
1 : FR5 - Cast Concrete	3.6	WNW	Kitchen/Living	No	Yes

Building Features

1 : FR5 - Cast Concrete	6.4	NNE	Kitchen/Living	Yes	Yes
2 : Alcubond	10.6	WNW	Kitchen/Living	No	No
2 : Alcubond	15.9	SSW	Kitchen/Living	No	No
3 : FR5 - Concrete Block Solid/Core Filled	9.5	NNE	Bedroom 2	No	No
1 : FR5 - Cast Concrete	7.9	WNW	Bedroom 2	No	Yes
3 : FR5 - Concrete Block Solid/Core Filled	4.1	NNE	Circulation	No	No
1 : FR5 - Cast Concrete	4.3	SSW	Circulation	Yes	No
3 : FR5 - Concrete Block Solid/Core Filled	9.5	ESE	Bedroom 1	No	No
1 : FR5 - Cast Concrete	3.1	WNW	Bedroom 1	Yes	No
2 : Alcubond	8.5	SSW	Bedroom 1	No	No
3 : FR5 - Concrete Block Solid/Core Filled	4.9	ESE	ENS	No	No
3 : FR5 - Concrete Block Solid/Core Filled	4.9	ESE	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	3.3	NNE	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	2.3	ESE	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	5.1	NNE	Bath	No	No

Internal wall type

Type	Area (m^2)	Insulation
1 : FR5 - Internal Plasterboard Stud Wall	72	

Floors

Location	Construction	Area (m^2)	Sub floor ventilation	Added insulation	Covering
Kitchen/Living	SuspSlab : 150mm: 150mm concrete slab	28.3	Enclosed	0.0	floattimber
Bedroom 2	SuspSlab : 150mm: 150mm concrete slab	10.7	Enclosed	0.0	Carpet
Circulation	SuspSlab : 150mm: 150mm concrete slab	11.4	Enclosed	0.0	floattimber
Bedroom 1	SuspSlab : 150mm: 150mm concrete slab	11.1	Enclosed	0.0	Carpet
ENS	SuspSlab : 150mm: 150mm concrete slab	5.1	Enclosed	0.0	Tiles
Bath	SuspSlab : 150mm: 150mm concrete slab	6	Enclosed	0.0	Tiles
L'dry	SuspSlab : 150mm: 150mm concrete slab	2.3	Enclosed	0.0	Tiles

Building Features

Ceiling type

Location	Material	Added insulation	Roof space above
Kitchen/Living	Plasterboard	3.5	No
Bedroom 2	Plasterboard	3.5	No
Circulation	Plasterboard	3.5	No
Bedroom 1	Plasterboard	3.5	No
ENS	Plasterboard	3.5	No
Bath	Plasterboard	3.5	No
L'dry	Plasterboard	3.5	No

Ceiling penetrations

Location	Number	Type	Width (mm)	Length (mm)	Seal/ unsealed
Kitchen/Living	10	Downlights	50	50	Sealed
Kitchen/Living	1	Exhaust Fans	180	180	Sealed
Bedroom 2	4	Downlights	50	50	Sealed
Circulation	4	Downlights	50	50	Sealed
Bedroom 1	4	Downlights	50	50	Sealed
Bath	1	Exhaust Fans	180	180	Sealed

Ceiling fans

Location	Number	Diameter (mm)

Roof type

Material	Added insulation	Roof colour
Slab:Slab - Suspended Slab : 200mm: 200mm Suspended Slab	0.0	light

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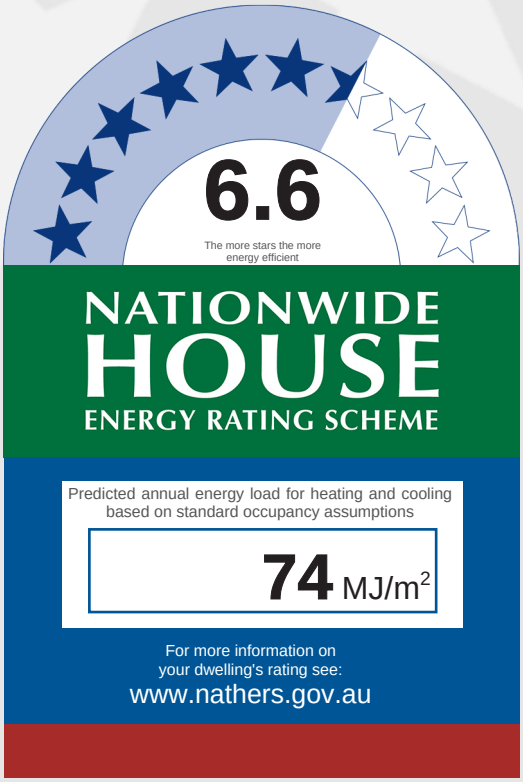
Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **YMN3W7VDO1** Date of Certificate: **4 Dec 2017** ★ Star rating: **6.6**

Assessor details

Accreditation number:	**20594**
Name:	**Suruchi Pathak**
Organisation:	**Suruchi Pathak**
Email:	**suruchipathak@gmail.com**
Phone:	**0434220286**
Declaration of interest:	**No potential conflicts of interest to declare**
Software:	**FirstRate5: 5.2.7 (3.13)**
AAO:	**ABSA**



Overview

Dwelling details

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Lot/DP number:	**1/952720**	NatHERS climate zone:	**28**
Exposure:	**exposed**		

Key construction and insulation materials

(see following pages for details)

Construction:	Wall:	**Alucobond Panel,Conc100+PB**
	Roof:	**Concrete**
	Floor:	**Concrete**
Insulation:	Wall:	**R2.5(Added to all external)**
	Roof:	**R3.5+ External Insulation**
	Floor:	**NA**
Glazing:		**Aluminum**
		Refer detailed report

Ceiling penetrations

(see following pages for details)

Sealed:	**20**
Unsealed:	**0**
TOTAL:**	**20**

Principal downlight type: **LED**

NOTE: This total is the maximum number of ceiling penetrations allowed to a ceiling (under a roof) for this certificate. **If this number is exceded in construction then this certificate IS NOT VALID and a new certificate is required. Loss of ceiling insulation for the penetrations listed has been taken into account with the rating.

Net floor area (m^2)

Conditioned:	**47.5**
Unconditioned:	**4.7**
Garage:	**-**
TOTAL:	**52.2**

Annual thermal performance loads (MJ/m^2)

Heating:	**33.3**
Cooling:	**40.7**
TOTAL:	**74**

Plan documents

Plan ref/date:	**16-021 DA151-Rev5-3.10.2017**
Prepared by:	**Sissons Architects**

Window selection - default windows only

Note on allowable window values: Only a 5% tolerance to the nominated SHGC window values shown on page 2 can be used with this rating.

Note: Only a +/-5% SHGC tolerance is allowed with this rating.

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Scan to access this certificate online and confirm this is valid.

https://www.fr5.com.au/QRCodeLanding?PublicId=YMN3W7VDO1

* Nationwide House Energy Rating Scheme (NatHERS) is an initiative of the Australian, state and territory governments. For more details see www.nathers.gov.au

Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **YMN3W7VDO1** Date of Certificate: **4 Dec 2017** ★ Star rating: **6.6**

Building Features

Windows type and performance value

Window ID	Window type	U-value	SHGC
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27
ATB-003-04 B	Al Thermally Broken A DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27

Windows schedule

Window ID	Window no.	Height (mm)	Width (mm)	Orientation	Zone name	Outdoor shade
ATB-004-04 B	Opening 49	2660	3000	WNW	Kitchen/Living 8	No
ATB-004-04 B	Opening 41	2660	2220	NNE	Kitchen/Living 8	No
ATB-003-04 B	Opening 28	2660	1415	WNW	Kitchen/Living 8	No
ATB-004-04 B	Opening 52	2660	1385	WNW	Kitchen/Living 8	No
ATB-003-04 B	Opening 29	2660	1080	WNW	Bedroom	No
ATB-004-04 B	Opening 51	2660	1070	WNW	Bedroom	No

Roof windows and skylight type and performance value

ID	Window type	U-value	SHGC

Roof window and skylight schedule

ID	Roof window/ skylight no.	Area (m^2)	Orientation	Zone name	Outdoor shade	Indoor shade/ diffuser

External wall type

Type	Insulation	Wall wrap
1 : FR5 - Cast Concrete	Polystyrene extruded: R2.5 (R2.5)	No
2 : FR5 - Concrete Block Solid/Core Filled		No
3 : Alcubond	Polystyrene extruded: R2.5 (R2.5)	No

External wall schedule

Wall type	Area (m^2)	Orientation	Zone name	Fixed shade	Eaves
1 : FR5 - Cast Concrete	3.2	SSW	Kitchen/Living 8	No	No
2 : FR5 - Concrete Block Solid/Core Filled	12.8	SSW	Kitchen/Living 8	No	No
2 : FR5 - Concrete Block Solid/Core Filled	19.5	ESE	Kitchen/Living 8	No	No
2 : FR5 - Concrete Block Solid/Core Filled	2	NNE	Kitchen/Living 8	No	No
1 : FR5 - Cast Concrete	8.5	WNW	Kitchen/Living 8	Yes	Yes
1 : FR5 - Cast Concrete	6.4	NNE	Kitchen/Living 8	Yes	Yes

Building Features

3 : Alcubond	11	WNW	Kitchen/Living 8	No	No
1 : FR5 - Cast Concrete	6.4	SSW	Bedroom	Yes	No
2 : FR5 - Concrete Block Solid/Core Filled	3.2	NNE	Bedroom	No	No
1 : FR5 - Cast Concrete	6.4	NNE	Bedroom	No	No
3 : Alcubond	8.1	WNW	Bedroom	No	No
2 : FR5 - Concrete Block Solid/Core Filled	8	ESE	Bath	No	No
2 : FR5 - Concrete Block Solid/Core Filled	4.1	NNE	Bath	No	No

Internal wall type

Type	Area (m^2)	Insulation
1 : FR5 - Internal Plasterboard Stud Wall	15.4	

Floors

Location	Construction	Area (m^2)	Sub floor ventilation	Added insulation	Covering
Kitchen/Living 8	SuspSlab : 150mm: 150mm concrete slab	36.5	Enclosed	0.0	floattimber
Bedroom	SuspSlab : 150mm: 150mm concrete slab	11	Enclosed	0.0	Carpet
Bath	SuspSlab : 150mm: 150mm concrete slab	4.7	Enclosed	0.0	Tiles

Ceiling type

Location	Material	Added insulation	Roof space above
Kitchen/Living 8	Plasterboard	3.5	No
Bedroom	Plasterboard	3.5	No
Bath	Plasterboard	3.5	No

Ceiling penetrations

Location	Number	Type	Width (mm)	Length (mm)	Seal/ unsealed
Kitchen/Living 8	1	Exhaust Fans	180	180	Sealed
Kitchen/Living 8	14	Downlights	50	50	Sealed
Bedroom	4	Downlights	50	50	Sealed
Bath	1	Exhaust Fans	180	180	Sealed

Ceiling fans

Building Features

Location	Number	Diameter (mm)

Roof type

Material	Added insulation	Roof colour
Slab:Slab - Suspended Slab : 200mm: 200mm Suspended Slab	0.0	light

Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **YMN3W7VDO1** Date of Certificate: **4 Dec 2017** ★ Star rating: **6.6**

Additional information

Explanatory notes

About this report

Residential energy ratings address the quality of the building fabric i.e. walls, windows, floors and roof/ceilings. Ratings do not cover the energy or water efficiency of appliances including heating and cooling, hot water, dishwashers, ovens, fridges, TVs etc. or solar panel or water tank requirements. The efficiency or specification of these items is generally covered by other regulations, standards or guidelines.

General Information

A NatHERS House Energy Rating is a comprehensive, dynamic computer modelling evaluation of the floorplans, elevations and specifications to predict an energy load of a home. Not all of us use our homes in the same way, so ratings are generated using standard assumptions. This means homes can be compared across the country.

The actual energy consumption of your home may vary significantly from the predicted energy load figures in this report depending on issues such as the size of your household and your personal preferences, e.g. in terms of heating or cooling.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparative purposes between different house designs and for demonstrating that the design meets the required regulatory compliance.

Homes that are energy efficient use less energy, are warmer in winter, cooler in summer and cost less to run. The higher the star rating the more energy efficient.

This NatHERS House Energy Rating report was carefully prepared by your assessor on the basis of comprehensive modelling using standard procedures to rate your home using an underlying engine developed by the Australian Commonwealth Scientific and Industrial Research Organisation (CSIRO).

All information relating to energy loads presented in this report is based on a range of standard assumptions in order to allow for comparisons with reports prepared for other homes and to demonstrate minimum regulatory compliance. The standard assumptions include figures for occupancy, indoor air temperature and are based on a unique climate file for your region.

Accredited Assessors

To ensure you get a high-quality, professional NatHERS House Energy Rating report, you should always use an accredited assessor, 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. Non-accredited assessors do not have this level of quality assurance or any on-going training requirements.

If you have any questions or concerns about this report, please direct them to your assessor in the first instance.

If your assessor is unable to address your questions or concerns, please contact their AAO listed under ‘assessor details’. You can also find a range of information about accredited assessors on the AAO websites.

Disclaimer

The energy values quoted are for comparison purposes only; they are not a prediction of actual energy use. This rating only applies to the floor plan, construction details, orientation and climate as submitted and included in the attached drawing set that bears a stamp with the same number as this certificate. Changes to any of these details could affect the rating.

Contact

For more information on the Nationwide House Energy Rating Scheme (NatHERS), visit www.nathers.gov.au

For more information on energy efficient design and insulation visit www.yourhome.gov.au

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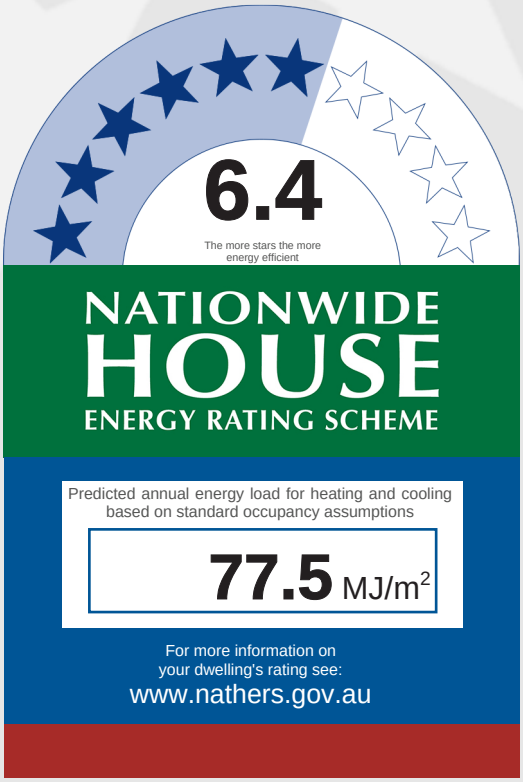
Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **LBD288B07H** Date of Certificate: **4 Dec 2017** ★ Star rating: **6.4**

Assessor details

Accreditation number:	**20594**
Name:	**Suruchi Pathak**
Organisation:	**Suruchi Pathak**
Email:	**suruchipathak@gmail.com**
Phone:	**0434220286**
Declaration of interest:	**No potential conflicts of interest to declare**
Software:	**FirstRate5: 5.2.7 (3.13)**
AAO:	**ABSA**



Overview

Dwelling details

Address:	**1404, 24-26 Railway Parade**		
Suburb:	**Westmead**		
State:	**NSW**	Postcode:	**2145**
Type:	**New Home**	NCC Class:	**Class 2**
Lot/DP number:	**1/952720**	NatHERS climate zone:	**28**
Exposure:	**exposed**		

Key construction and insulation materials

(see following pages for details)

Construction:	Wall:	**Alucobond Panel,Conc100+PB**
	Roof:	**Concrete**
	Floor:	**Concrete**
Insulation:	Wall:	**R2.5(Added to all external)**
	Roof:	**R3.5+Ext slab insulation**
	Floor:	**NA**
Glazing:		**Aluminum**
		Refer detailed report

Ceiling penetrations

(see following pages for details)

Sealed:	**26**
Unsealed:	**0**
TOTAL:**	**26**

Principal downlight type: **LED**

NOTE: This total is the maximum number of ceiling penetrations allowed to a ceiling (under a roof) for this certificate. **If this number is exceded in construction then this certificate IS NOT VALID and a new certificate is required. Loss of ceiling insulation for the penetrations listed has been taken into account with the rating.

Net floor area (m^2)

Conditioned:	**73.7**
Unconditioned:	**2.3**
Garage:	**-**
TOTAL:	**76**

Annual thermal performance loads (MJ/m^2)

Heating:	**35.3**
Cooling:	**42.2**
TOTAL:	**77.5**

Window selection - default windows only

Note on allowable window values: Only a 5% tolerance to the nominated SHGC window values shown on page 2 can be used with this rating.

Note: Only a +/-5% SHGC tolerance is allowed with this rating.

NB: This tolerance ONLY applies to SHGC, the U-value can always be lower but not higher than the values stated on page 2.

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https://www.fr5.com.au/QRCodeLanding?PublicId=LBD288B07H

Plan documents

Plan ref/date:	**16-021 DA151-Rev5-3.10.2017**
Prepared by:	**Sissons Architects**

Building Features

Windows type and performance value

Window ID	Window type	U-value	SHGC
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27
ATB-003-04 B	Al Thermally Broken A DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27
ATB-006-04 B	Al Thermally Broken B DG Argon Fill Low Solar Gain low-E -Clear	3	0.26

Windows schedule

Window ID	Window no.	Height (mm)	Width (mm)	Orientation	Zone name	Outdoor shade
ATB-004-04 B	Opening 1	2660	1067	NNE	Kitchen/Living	No
ATB-003-04 B	Opening 2	2660	1220	NNE	Kitchen/Living	No
ATB-003-04 B	Opening 18	2660	1210	NNE	Kitchen/Living	No
ATB-004-04 B	Opening 16	2660	1355	WNW	Kitchen/Living	No
ATB-004-04 B	Opening 24	2660	1365	WNW	Kitchen/Living	No
ATB-006-04 B	Opening 8	2660	2200	SSW	Kitchen/Living	No
ATB-006-04 B	Opening 5	2660	2954	WNW	Bedroom 2	No
ATB-006-04 B	Opening 19	2660	1541	NNE	Circulation	No
ATB-006-04 B	Opening 3	2660	1075	NNE	Bedroom 1	No
ATB-003-04 B	Opening 20	2660	1075	NNE	Bedroom 1	No

Roof windows and skylight type and performance value

ID	Window type	U-value	SHGC

Roof window and skylight schedule

ID	Roof window/ skylight no.	Area (m^2)	Orientation	Zone name	Outdoor shade	Indoor shade/ diffuser

External wall type

Type	Insulation	Wall wrap
1 : Alcubond	Polystyrene extruded: R2.5 (R2.5)	No
2 : FR5 - Cast Concrete	Polystyrene extruded: R2.5 (R2.5)	No
3 : FR5 - Concrete Block Solid/Core Filled		No

External wall schedule

Wall type	Area (m^2)	Orientation	Zone name	Fixed shade	Eaves
1 : Alcubond	15.9	NNE	Kitchen/Living	No	No

Building Features

1 : Alcubond	10.6	WNW	Kitchen/Living	No	No
2 : FR5 - Cast Concrete	6.4	SSW	Kitchen/Living	Yes	Yes
2 : FR5 - Cast Concrete	3.6	WNW	Kitchen/Living	Yes	Yes
2 : FR5 - Cast Concrete	3.1	ESE	Kitchen/Living	Yes	No
2 : FR5 - Cast Concrete	7.9	WNW	Bedroom 2	Yes	Yes
3 : FR5 - Concrete Block Solid/Core Filled	9.5	SSW	Bedroom 2	No	No
2 : FR5 - Cast Concrete	4.3	NNE	Circulation	Yes	No
3 : FR5 - Concrete Block Solid/Core Filled	4.1	SSW	Circulation	No	No
1 : Alcubond	8.5	NNE	Bedroom 1	No	No
2 : FR5 - Cast Concrete	3.1	WNW	Bedroom 1	Yes	No
3 : FR5 - Concrete Block Solid/Core Filled	9.5	ESE	Bedroom 1	No	No
3 : FR5 - Concrete Block Solid/Core Filled	4.9	ESE	ENS	No	No
3 : FR5 - Concrete Block Solid/Core Filled	8.5	SSW	Bath	No	No
3 : FR5 - Concrete Block Solid/Core Filled	7.1	ESE	Bath	No	No

Internal wall type

Type	Area (m^2)	Insulation
1 : FR5 - Internal Plasterboard Stud Wall	72	

Floors

Location	Construction	Area (m^2)	Sub floor ventilation	Added insulation	Covering
Kitchen/Living	SuspSlab : 150mm: 150mm concrete slab	28.1	Enclosed	0.0	floattimber
Bedroom 2	SuspSlab : 150mm: 150mm concrete slab	10.7	Enclosed	0.0	Carpet
Circulation	SuspSlab : 150mm: 150mm concrete slab	11.4	Enclosed	0.0	floattimber
Bedroom 1	SuspSlab : 150mm: 150mm concrete slab	11.3	Enclosed	0.0	Carpet
ENS	SuspSlab : 150mm: 150mm concrete slab	5.1	Enclosed	0.0	Tiles
Bath	SuspSlab : 150mm: 150mm concrete slab	7.1	Enclosed	0.0	Tiles
L'dry	SuspSlab : 150mm: 150mm concrete slab	2.3	Enclosed	0.0	Tiles

Ceiling type

Building Features

Location	Material	Added insulation	Roof space above
Kitchen/Living	Plasterboard	3.5	No
Bedroom 2	Plasterboard	3.5	No
Circulation	Plasterboard	3.5	No
Bedroom 1	Plasterboard	3.5	No
ENS	Plasterboard	3.5	No
Bath	Plasterboard	3.5	No
L'dry	Plasterboard	3.5	No

Ceiling penetrations

Location	Number	Type	Width (mm)	Length (mm)	Seal/ unsealed
Kitchen/Living	12	Downlights	50	50	Sealed
Kitchen/Living	1	Exhaust Fans	180	180	Sealed
Bedroom 2	4	Downlights	50	50	Sealed
Circulation	4	Downlights	50	50	Sealed
Bedroom 1	4	Downlights	50	50	Sealed
Bath	1	Exhaust Fans	180	180	Sealed

Ceiling fans

Location	Number	Diameter (mm)

Roof type

Material	Added insulation	Roof colour
Slab:Slab - Suspended Slab : 200mm: 200mm Suspended Slab	0.0	light

Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **LBD288B07H** Date of Certificate: **4 Dec 2017** ★ Star rating: **6.4**

Additional information

Explanatory notes

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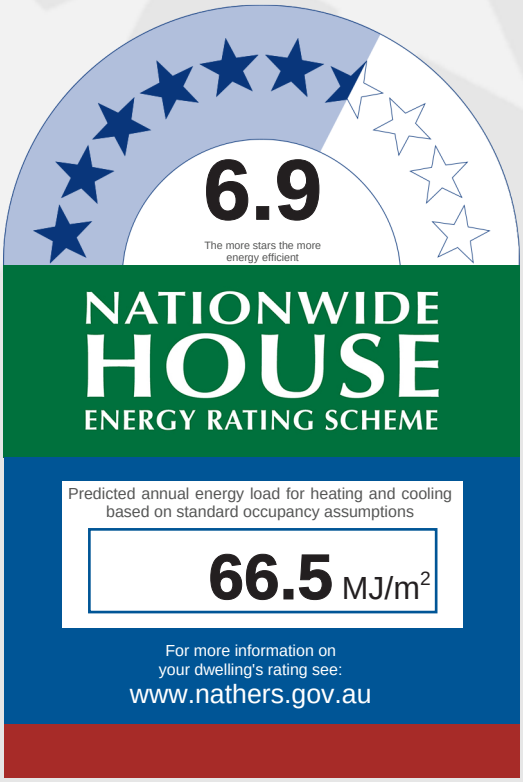
Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **04GOWVOEYJ** Date of Certificate: **4 Dec 2017** ★ Star rating: **6.9**

Assessor details

Accreditation number:	**20594**
Name:	**Suruchi Pathak**
Organisation:	**Suruchi Pathak**
Email:	**suruchipathak@gmail.com**
Phone:	**0434220286**
Declaration of interest:	**No potential conflicts of interest to declare**
Software:	**FirstRate5: 5.2.7 (3.13)**
AAO:	**ABSA**



Overview

Dwelling details

Address:	**1405, 24-26 Railway Parade**		
Suburb:	**Westmead**		
State:	**NSW**	Postcode:	**2145**
Type:	**New Home**	NCC Class:	**Class 2**
Lot/DP number:	**1/952720**	NatHERS climate zone:	**28**
Exposure:	**exposed**		

Key construction and insulation materials

(see following pages for details)

Construction:	Wall:	**Alucobond Panel,Conc100+PB**
	Roof:	**Neighbour above**
	Floor:	**Concrete**
Insulation:	Wall:	**R2.5(Added to all external)**
	Roof:	**R4.0**
	Floor:	**NA**
Glazing:		**Aluminum**
		Refer detailed report

Ceiling penetrations

(see following pages for details)

Sealed:	**48**
Unsealed:	**0**
TOTAL:**	**48**

Principal downlight type: **LED**

NOTE: This total is the maximum number of ceiling penetrations allowed to a ceiling (under a roof) for this certificate. **If this number is exceded in construction then this certificate IS NOT VALID and a new certificate is required. Loss of ceiling insulation for the penetrations listed has been taken into account with the rating.

Net floor area (m^2)

Conditioned:	**138.2**
Unconditioned:	**3.6**
Garage:	**-**
TOTAL:	**141.8**

Annual thermal performance loads (MJ/m^2)

Heating:	**31**
Cooling:	**35.5**
TOTAL:	**66.5**

Window selection - default windows only

Note on allowable window values: Only a 5% tolerance to the nominated SHGC window values shown on page 2 can be used with this rating.

Note: Only a +/-5% SHGC tolerance is allowed with this rating.

NB: This tolerance ONLY applies to SHGC, the U-value can always be lower but not higher than the values stated on page 2.

If any of the windows selected are outside the 5% tolerance then this certificate is no longer valid and the dwelling will need to be rerated to confirm compliance.

Plan documents

Plan ref/date:	**16-021 DA151-Rev5-3.10.2017**
Prepared by:	**Sissons Architects**

Scan to access this certificate online and confirm this is valid.

https://www.fr5.com.au/QRCodeLanding?PublicId=04GOWVOEYJ

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Building Features

Windows type and performance value

Window ID	Window type	U-value	SHGC
ATB-004-04 B	Al Thermally Broken B DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27
ATB-003-04 B	Al Thermally Broken A DG Air Fill Low Solar Gain low-E -Clear	3.1	0.27

Windows schedule

Window ID	Window no.	Height (mm)	Width (mm)	Orientation	Zone name	Outdoor shade
ATB-004-04 B	Opening 38	2660	4308	ESE	Kitchen/Living	No
ATB-004-04 B	Opening 39	2660	2842	SSW	Kitchen/Living	No
ATB-004-04 B	Opening 32	2660	1365	ESE	Kitchen/Living	No
ATB-004-04 B	Opening 33	2660	1330	ESE	Kitchen/Living	No
ATB-003-04 B	Opening 34	2660	1260	NNE	Kitchen/Living	No
ATB-003-04 B	Opening 35	2660	1261	NNE	Kitchen/Living	No
ATB-004-04 B	Opening 43	2660	1210	NNE	Kitchen/Living	No
ATB-004-04 B	Opening 36	2660	1532	NNE	Kitchen/Living	No
ATB-003-04 B	Opening 37	2660	1128	NNE	Kitchen/Living	No
ATB-004-04 B	Opening 44	2660	1095	NNE	Kitchen/Living	No
ATB-003-04 B	Opening 42	2660	1452	ESE	Bed1	No
ATB-003-04 B	Opening 40	2660	2093	ESE	Bedroom 2	No
ATB-003-04 B	Opening 41	2660	1128	ESE	Bed 3	No
ATB-004-04 B	Opening 45	2660	1070	ESE	Bed 3	No

Roof windows and skylight type and performance value

ID	Window type	U-value	SHGC

Roof window and skylight schedule

ID	Roof window/ skylight no.	Area (m^2)	Orientation	Zone name	Outdoor shade	Indoor shade/ diffuser

External wall type

Type	Insulation	Wall wrap
1 : FR5 - Concrete Block Solid/Core Filled		No
2 : FR5 - Cast Concrete	Polystyrene extruded: R2.5 (R2.5)	No
3 : Alcubond	Polystyrene extruded: R2.5 (R2.5)	No

External wall schedule

Building Features

Wall type	Area (m^2)	Orientation	Zone name	Fixed shade	Eaves
1 : FR5 - Concrete Block Solid/Core Filled	16.2	SSW	Kitchen/Living	No	No
2 : FR5 - Cast Concrete	12	ESE	Kitchen/Living	Yes	No
2 : FR5 - Cast Concrete	8.3	SSW	Kitchen/Living	Yes	Yes
3 : Alcubond	10.9	ESE	Kitchen/Living	No	No
3 : Alcubond	16.4	NNE	Kitchen/Living	No	No
2 : FR5 - Cast Concrete	3.3	WNW	Kitchen/Living	Yes	No
2 : FR5 - Cast Concrete	5.4	NNE	Kitchen/Living	Yes	No
2 : FR5 - Cast Concrete	3.3	ESE	Kitchen/Living	Yes	No
3 : Alcubond	8.8	NNE	Kitchen/Living	No	No
1 : FR5 - Concrete Block Solid/Core Filled	22.9	WNW	Kitchen/Living	No	No
1 : FR5 - Concrete Block Solid/Core Filled	8.1	WNW	Lory	No	No
1 : FR5 - Concrete Block Solid/Core Filled	2	NNE	Bath	No	No
1 : FR5 - Concrete Block Solid/Core Filled	9.8	WNW	Bath	No	No
1 : FR5 - Concrete Block Solid/Core Filled	8	SSW	Ensuite	No	No
1 : FR5 - Concrete Block Solid/Core Filled	5.3	WNW	Ensuite	No	No
1 : FR5 - Concrete Block Solid/Core Filled	5.5	SSW	Bed1	No	No
2 : FR5 - Cast Concrete	2.7	SSW	Bed1	No	No
3 : Alcubond	9.9	ESE	Bed1	No	No
1 : FR5 - Concrete Block Solid/Core Filled	4.4	WNW	Bed1	No	No
3 : Alcubond	9.9	ESE	Bedroom 2	No	No
3 : Alcubond	8.2	ESE	Bed 3	No	No
2 : FR5 - Cast Concrete	8.1	NNE	Bed 3	Yes	No

Internal wall type

Type	Area (m^2)	Insulation
1 : FR5 - Internal Plasterboard Stud Wall	83.3	

Floors

Location	Construction	Area (m^2)	Sub floor ventilation	Added insulation	Covering
Kitchen/Living	SuspSlab : 150mm: 150mm concrete slab	81.9	Enclosed	0.0	floattimber
Corridor	SuspSlab : 150mm: 150mm concrete slab	6.2	Enclosed	0.0	floattimber
Lory	SuspSlab : 150mm: 150mm concrete	3.6	Enclosed	0.0	Tiles

Building Features

	slab				
Bath	SuspSlab : 150mm: 150mm concrete slab	7.1	Enclosed	0.0	Tiles
Ensuite	SuspSlab : 150mm: 150mm concrete slab	5.9	Enclosed	0.0	Tiles
Bed1	SuspSlab : 150mm: 150mm concrete slab	16.4	Enclosed	0.0	Carpet
Bedroom 2	SuspSlab : 150mm: 150mm concrete slab	10.3	Enclosed	0.0	Carpet
Bed 3	SuspSlab : 150mm: 150mm concrete slab	10.3	Enclosed	0.0	Carpet

Ceiling type

Location	Material	Added insulation	Roof space above
Kitchen/Living	Plasterboard	3.5	No
Corridor	Plasterboard	3.5	No
Lory	Plasterboard	3.5	No
Bath	Plasterboard	3.5	No
Ensuite	Plasterboard	3.5	No
Bed1	Plasterboard	3.5	No
Bedroom 2	Plasterboard	3.5	No
Bed 3	Plasterboard	3.5	No

Ceiling penetrations

Location	Number	Type	Width (mm)	Length (mm)	Seal/ unsealed
Kitchen/Living	1	Exhaust Fans	180	180	Sealed
Kitchen/Living	32	Downlights	50	50	Sealed
Bath	1	Exhaust Fans	180	180	Sealed
Bed1	6	Downlights	50	50	Sealed
Bedroom 2	4	Downlights	50	50	Sealed
Bed 3	4	Downlights	50	50	Sealed

Ceiling fans

Location	Number	Diameter (mm)

Roof type

Building Features

Material	Added insulation	Roof colour
Slab:Slab - Suspended Slab : 200mm: 200mm Suspended Slab	0.0	light

Nationwide House Energy Rating Scheme* Certificate

Certificate Number: **04GOWVOEYJ** Date of Certificate: **4 Dec 2017** ★ Star rating: **6.9**

Additional information

Explanatory notes

About this report

Residential energy ratings address the quality of the building fabric i.e. walls, windows, floors and roof/ceilings. Ratings do not cover the energy or water efficiency of appliances including heating and cooling, hot water, dishwashers, ovens, fridges, TVs etc. or solar panel or water tank requirements. The efficiency or specification of these items is generally covered by other regulations, standards or guidelines.

General Information

A NatHERS House Energy Rating is a comprehensive, dynamic computer modelling evaluation of the floorplans, elevations and specifications to predict an energy load of a home. Not all of us use our homes in the same way, so ratings are generated using standard assumptions. This means homes can be compared across the country.

The actual energy consumption of your home may vary significantly from the predicted energy load figures in this report depending on issues such as the size of your household and your personal preferences, e.g. in terms of heating or cooling.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparative purposes between different house designs and for demonstrating that the design meets the required regulatory compliance.

Homes that are energy efficient use less energy, are warmer in winter, cooler in summer and cost less to run. The higher the star rating the more energy efficient.

This NatHERS House Energy Rating report was carefully prepared by your assessor on the basis of comprehensive modelling using standard procedures to rate your home using an underlying engine developed by the Australian Commonwealth Scientific and Industrial Research Organisation (CSIRO).

All information relating to energy loads presented in this report is based on a range of standard assumptions in order to allow for comparisons with reports prepared for other homes and to demonstrate minimum regulatory compliance. The standard assumptions include figures for occupancy, indoor air temperature and are based on a unique climate file for your region.

Accredited Assessors

To ensure you get a high-quality, professional NatHERS House Energy Rating report, you should always use an accredited assessor, 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. Non-accredited assessors do not have this level of quality assurance or any on-going training requirements.

If you have any questions or concerns about this report, please direct them to your assessor in the first instance.

If your assessor is unable to address your questions or concerns, please contact their AAO listed under ‘assessor details’. You can also find a range of information about accredited assessors on the AAO websites.

Disclaimer

The energy values quoted are for comparison purposes only; they are not a prediction of actual energy use. This rating only applies to the floor plan, construction details, orientation and climate as submitted and included in the attached drawing set that bears a stamp with the same number as this certificate. Changes to any of these details could affect the rating.

Contact

For more information on the Nationwide House Energy Rating Scheme (NatHERS), visit www.nathers.gov.au

For more information on energy efficient design and insulation visit www.yourhome.gov.au

* Nationwide House Energy Rating Scheme (NatHERS) is an initiative of the Australian, state and territory governments. For more details see www.nathers.gov.au

www.absa.net.au

ABSA
Australian Building Sustainability Association

NatHERS Rated 6.5/10 STARS*

*www.nathers.gov.au

NATIONWIDE HOUSE ENERGY RATING SCHEME

BUILDING ENERGY EFFICIENCY CERTIFICATE

Drill Pty Ltd
ISSUED TO

24-26 Railway Pde
ADDRESS

Site Lot 1,1&10

Westmead

NSW

2145

1011667472
CERTIFICATION NUMBER

04/12/2017
DATE

28
CLIMATE ZONE

FirstRate5 - v 5.2.6 (FirstRate5)
SOFTWARE

35.4 MJ/m^2 pa
SIMULATED ENERGY CONSUMPTION - HEATING

40.0 MJ/m^2 pa
SIMULATED ENERGY CONSUMPTION - COOLING

75.4 MJ/m^2 pa
TOTAL SIMULATED ENERGY CONSUMPTION

Suruchi Pathak
ASSESSOR NAME

20594
ASSESSOR NUMBER

Energia Design Concepts
COMPANY


ASSESSOR SIGNATURE

Issued by a BUILDING THERMAL PERFORMANCE ASSESSOR accredited by the Australian Building Sustainability Association to provide NatHERS house energy ratings.

This certificate is not for regulatory purposes and is for use by the homeowner only. The house energy rating has been based on information provided at the time of rating. Modifications made to the design or onsite substitution of materials may effect the rating.

ABSA-Version 1.2 -July 2014
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24-26 RAILWAY PARADE, WESTMEAD

Nathers (Thermal Comfort) notes

Proposed Residential Development at 24-26 Railway Parade Westmead NSW 2145

Window Glazing	Glazing Type	Frame Type	U value	SHGC Value	Description
ATB-004-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Sliding & Fixed
ATB-003-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Awning Windows
Products to be used with matching U values SHGC values.(custom windows).The values calculated include frames.The values are approved AFRC values for Residential.Refer www.wers.net					
Skylights	**Glazing Type**	**Frame Type**	**U value**	**SHGC Value**	**Description**
No Skylights proposed					
External Wall Type	**Insulation(Added)**	**Colour**			**Description**
100mm Cast Concrete+PB lining	R2.5	Light			As per Plans & Elevations
Alucobond Panel +PB lining	R2.5	Light			As per Plans & Elevations
Internal Wall Type	**Insulation(Added)**	**Colour**			**Description**
200mm Concrete Block-core filled	None				All Party Walls
Plasterboard on studs	None				Throughout internal of all units
Floors	**Insulation**	**Floor Covering**			**Description**
Concrete Slab on Ground	R2.5	Paraquetry/Tiles			Balconies/air below-Level 9 units & unit 1205
Susp Concrete Floor	None	Paraquetry/Tiles			Neighbours below
Roof/Ceiling Type	**Insulation(Added)**	**Colour**			**Description**
Concrete Roof	R3.5 to ceilings with Roof above	Medium			Throughout Level 14
External Shading					**Description**
Balconies					As per Plans & Elevations
Eaves	**Width**	**Vertical Offset**			**Description**
Additional Items					
Roof ventillation:None				Ventillated Skylights:None	
Sealed Exhaust Fans:Yes(self closing)				Downlights: Yes (Default 4 per 10 sqm)	
Seals to Windows to be provided as per AS2047					

THE RATING IS DONE WITH DEFAULT NUMBER OF DOWNLIGHTS INSTALLED.IF SUCH PENETRATIONS ARE ALTERED AT THE TIME OF CONSTRUCTION RE-ASSESSMENT WILL BE REQUIRED FOR COMPENSATION OF LOSS OF INSULATION AS PER NCC(Vol1)

6.5 Average star rating
NATIONWIDE HOUSE ENERGY RATING SCHEME
www.nathers.gov.au

Certificate Number: DJR73BX9ET
Assessor Name: Suruchi Pathak
Accreditation number: 20594
Certificate date: 4 Dec 2017
Dwelling address: 24-26 Railway Parade, Westmead NSW 2145

www.nathers.gov.au

https://www.fr5.com.au/QRCodeLanding?PublicId=DJR73BX9ET&GrpCert=1

ABSA Australian Building Sustainability Association — Class 2 Building Project Certification

Certification Number	1011667472
Certification Date	04/12/2017
Assessor Name	Suruchi Pathak
Assessor Number	20594
Assessor Signature	

Averaged Simulated Energy: HEATING: 35.4 MJ/m2 pa
Averaged Simulated Energy: COOLING: 40.0 MJ/m2 pa
Rated with Downlights: Partial
Averaged NatHERS Rating 75.4 MJ/m2 pa
6.5/10

General Notes

1. Do not scale drawings. Dimensions govern.
2. All dimensions are in millimetres unless noted otherwise.
3. All dimensions shall be verified on site before proceeding with the work
4. All omissions or discrepancies shall be notified to the architect
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6. All steelwork section sizes are indicative only. Refer to Structural Engineers drawings for serial sizes.

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Rev.	Date	Comment
A	28.05.2018	DA SUBMISSION

North

Project
24-26 Railway Parade Westmead 2145 NSW

Client
Drill Pty Ltd

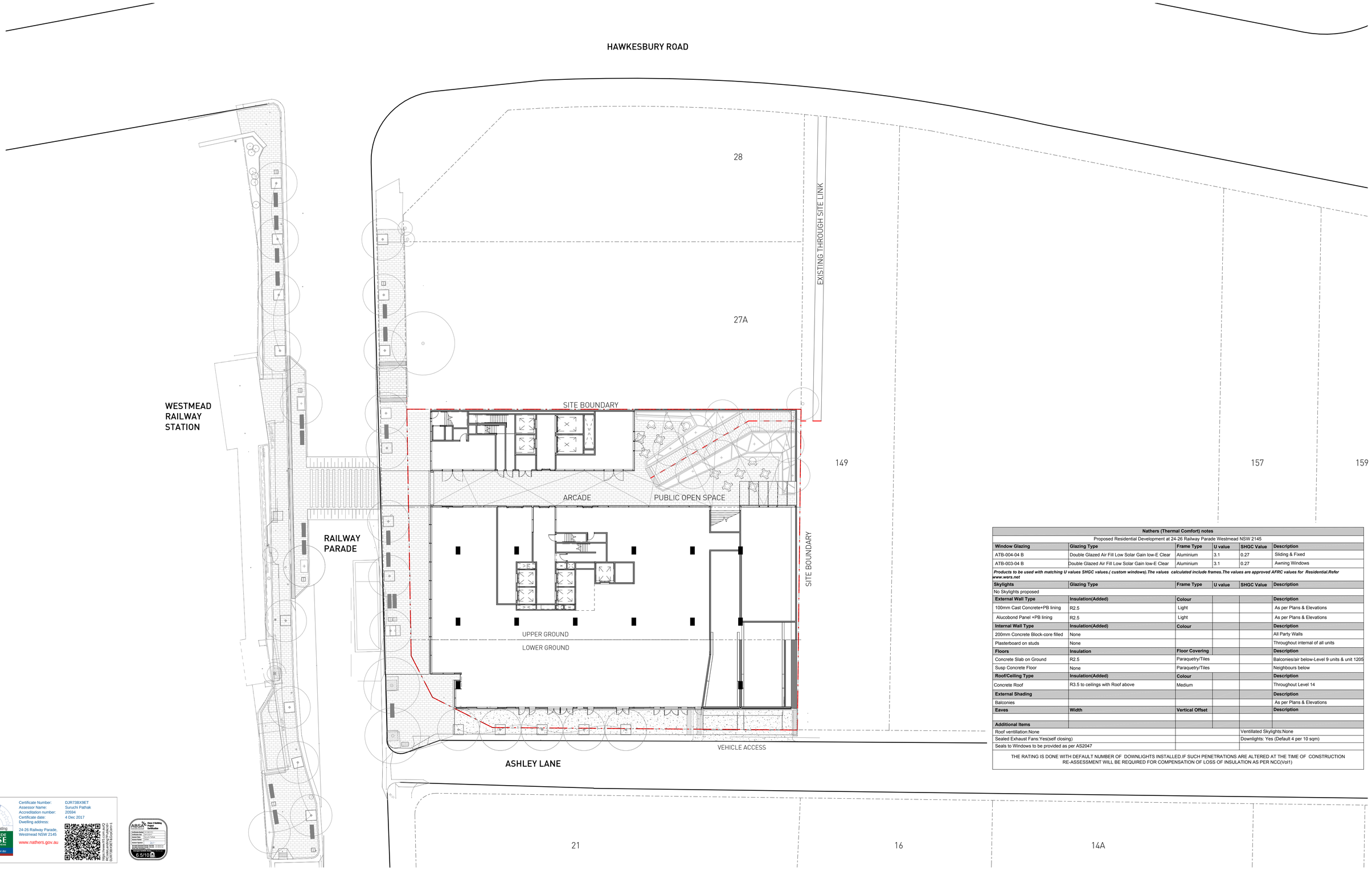
Architect
SISSONS ARCHITECTS
Studio 5, Level 2
81 Alexander St, Crows Nest, NSW 2065
Tel. 02 9460 8002
www.sissonsarchitects.com

Scale
@A1 HALF SCALE @ A3

Drawing Title
DRAWING LIST

DEVELOPMENT APPLICATION

16-021 DA001 A
Project No. Drawing No. Rev.



Nathers (Thermal Comfort) notes					
Proposed Residential Development at 24-26 Railway Parade Westmead NSW 2145					
Window Glazing	**Glazing Type**	**Frame Type**	**U value**	**SHGC Value**	**Description**
ATB-004-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Sliding & Fixed
ATB-003-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Awning Windows
Products to be used with matching U values SHGC values.(custom windows).The values calculated include frames.The values are approved AFRC values for Residential.Refer www.wers.net					
Skylights	**Glazing Type**	**Frame Type**	**U value**	**SHGC Value**	**Description**
No Skylights proposed					
External Wall Type	**Insulation(Added)**	**Colour**			**Description**
100mm Cast Concrete+PB lining	R2.5	Light			As per Plans & Elevations
Alucobond Panel +PB lining	R2.5	Light			As per Plans & Elevations
Internal Wall Type	**Insulation(Added)**	**Colour**			**Description**
200mm Concrete Block-core filled	None				All Party Walls
Plasterboard on studs	None				Throughout internal of all units
Floors	**Insulation**	**Floor Covering**			**Description**
Concrete Slab on Ground	R2.5	Paraquetry/Tiles			Balconies/air below-Level 9 units & unit 1205
Susp Concrete Floor	None	Paraquetry/Tiles			Neighbours below
Roof/Ceiling Type	**Insulation(Added)**	**Colour**			**Description**
Concrete Roof	R3.5 to ceilings with Roof above	Medium			Throughout Level 14
External Shading					**Description**
Balconies					As per Plans & Elevations
Eaves	**Width**	**Vertical Offset**			**Description**
Additional Items					
Roof ventillation:None				Ventillated Skylights:None	
Sealed Exhaust Fans:Yes(self closing)				Downlights: Yes (Default 4 per 10 sqm)	
Seals to Windows to be provided as per AS2047					

THE RATING IS DONE WITH DEFAULT NUMBER OF DOWNLIGHTS INSTALLED.IF SUCH PENETRATIONS ARE ALTERED AT THE TIME OF CONSTRUCTION RE-ASSESSMENT WILL BE REQUIRED FOR COMPENSATION OF LOSS OF INSULATION AS PER NCC(Vol1)

6.5 Average star rating
NATIONWIDE HOUSE ENERGY RATING SCHEME
www.nathers.gov.au

Certificate Number: DJR73BX9ET
Assessor Name: Suruchi Pathak
Accreditation number: 20594
Certificate date: 4 Dec 2017
Dwelling address: 24-26 Railway Parade, Westmead NSW 2145
www.nathers.gov.au

ABSA Class 2 Building Project Certification
6.5/10

General Notes

1. Do not scale drawings. Dimensions govern.
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6. All steelwork section sizes are indicative only. Refer to Structural Engineers drawings for serial sizes.

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Rev.	Date	Comment
A	28.05.2018	DA SUBMISSION

North

Project
24-26 Railway Parade Westmead 2145
NSW

Client
Drill Pty Ltd

Architect
SISSONS ARCHITECTS
Studio 5, Level 2
81 Alexander St, Crows Nest, NSW 2065
Tel. 02 9460 8002
www.sissonsarchitects.com

Scale
1 : 250 @A1 HALF SCALE @ A3

Drawing Title
OVERALL GROUND FLOOR PLAN - PROPOSED

DEVELOPMENT APPLICATION

16-021 DA009 — Project No. / Drawing No.

A — Rev.

Nathers (Thermal Comfort) notes					
Proposed Residential Development at 24-26 Railway Parade Westmead NSW 2145					
Window Glazing	**Glazing Type**	**Frame Type**	**U value**	**SHGC Value**	**Description**
ATB-004-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Sliding & Fixed
ATB-003-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Awning Windows
Products to be used with matching U values SHGC values.(custom windows).The values calculated include frames.The values are approved AFRC values for Residential.Refer www.wers.net					
Skylights	**Glazing Type**	**Frame Type**	**U value**	**SHGC Value**	**Description**
No Skylights proposed					
External Wall Type	**Insulation(Added)**	**Colour**			**Description**
100mm Cast Concrete+PB lining	R2.5	Light			As per Plans & Elevations
Alucobond Panel +PB lining	R2.5	Light			As per Plans & Elevations
Internal Wall Type	**Insulation(Added)**	**Colour**			**Description**
200mm Concrete Block-core filled	None				All Party Walls
Plasterboard on studs	None				Throughout internal of all units
Floors	**Insulation**	**Floor Covering**			**Description**
Concrete Slab on Ground	R2.5	Paraquetry/Tiles			Balconies/air below-Level 9 units & unit 1205
Susp Concrete Floor	None	Paraquetry/Tiles			Neighbours below
Roof/Ceiling Type	**Insulation(Added)**	**Colour**			**Description**
Concrete Roof	R3.5 to ceilings with Roof above	Medium			Throughout Level 14
External Shading					**Description**
Balconies					As per Plans & Elevations
Eaves	**Width**	**Vertical Offset**			**Description**
Additional Items					
Roof ventillation:None				Ventilated Skylights:None	
Sealed Exhaust Fans:Yes(self closing)				Downlights: Yes (Default 4 per 10 sqm)	
Seals to Windows to be provided as per AS2047					

THE RATING IS DONE WITH DEFAULT NUMBER OF DOWNLIGHTS INSTALLED.IF SUCH PENETRATIONS ARE ALTERED AT THE TIME OF CONSTRUCTION RE-ASSESSMENT WILL BE REQUIRED FOR COMPENSATION OF LOSS OF INSULATION AS PER NCC(Vol1)

SUPERMARKET	29	(1 ACCESSIBLE)
RETAIL	8	(1 ACCESSIBLE)
TAVERN	5	
F&B	1	
MEDICAL CENTRE	5	(2 ACCESSIBLE)
GYM	14	(1 ACCESSIBLE SPACE TO BE SHARED WITH RETAIL)
HOTEL	20	(2 ACCESSIBLE, 1 STAFF PARKING)
RESIDENT	33	(4 ACCESSIBLE)
VISITORS	7	(1 ACCESSIBLE SPACE TO BE SHARED WITH MEDICAL CENTRE)

PARKING LEGEND

SUPERMARKET
MIN CAR PARK SPACE 2.6 X 5.5
MIN AISLEWIDTH 6.6M

RETAIL
MIN CAR PARK SPACE 2.6 X 5.4
MIN AISLE WIDTH 5.8M

TAVERN
MIN CAR PARK SPACE 2.6 X 5.5
MIN AISLEWIDTH 5.8M

MEDICAL CENTRE
MIN CAR PARK SPACE 2.6 X 5.4
MIN AISLEWIDTH 5.8M

GYM
MIN CAR PARK SPACE 2.5 X 5.4
MIN AISLE WIDTH 5.8M

F & B
MIN CAR PARK SPACE 2.5 X 5.4
MIN AISLE WIDTH 5.8M

HOTEL
MIN CAR PARK SPACE 2.4 X 5.4
MIN AISLE WIDTH 5.8M

RESIDENTIAL
MIN CAR PARK SPACE 2.4 X 5.4
MIN AISLE WIDTH 5.8M

VISITOR
MIN CAR PARK SPACE 2.4 X 5.4
MIN AISLE WIDTH 5.8M

BICYCLE
BIKE PARK SPACE 0.5 X 2.0

Certificate Number: DJR73BX9ET
Assessor Name: Suruchi Pathak
Accreditation number: 20594
Certificate date: 4 Dec 2017
Dwelling address: 24-26 Railway Parade, Westmead NSW 2145
www.nathers.gov.au
6.5 Average star rating
NATIONWIDE HOUSE ENERGY RATING SCHEME

ABSA Class 2 Building Project Certification
6.5/10

USER CLASS REFER AS2890.1:2004
TABLE 1.1 CLASSIFICATION OF OFF-STREET CAR PARKING FACILITIES AND FIGURE 2.2 LAYOUTS FOR ANGLE PARKING SPACES

General Notes

1. Do not scale drawings. Dimensions govern.
2. All dimensions are in millimetres unless noted otherwise.
3. All dimensions shall be verified on site before proceeding with the work
4. All omissions or discrepancies shall be notified to the architect
5. Mechanical and Electrical plant and services shown are indicative only. Refer to Service Engineers drawings.
6. All steelwork section sizes are indicative only. Refer to Structural Engineers drawings for serial sizes.

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Rev.	Date	Comment
A	28.05.2018	DA SUBMISSION

REFER SWEPT PATHS DIAGRAMS FOR DETAILS.

North

Project: 24-26 Railway Parade Westmead 2145 NSW	Architect: SISSONS ARCHITECTS, Studio 5, Level 2, 81 Alexander St, Crows Nest, NSW 2065, Tel. 02 9460 8002, www.sissonsarchitects.com	Drawing Title: LB4 CAR PARK PLAN
		DEVELOPMENT APPLICATION
Client: Drill Pty Ltd	Scale: 1 : 100 @A1 HALF SCALE @ A3	16-021 DA111 (Project No. / Drawing No.) A (Rev.)

Nathers (Thermal Comfort) notes					
Proposed Residential Development at 24-26 Railway Parade Westmead NSW 2145					
Window Glazing	**Glazing Type**	**Frame Type**	**U value**	**SHGC Value**	**Description**
ATB-004-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Sliding & Fixed
ATB-003-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Awning Windows
Products to be used with matching U values SHGC values.(custom windows).The values calculated include frames.The values are approved AFRC values for Residential.Refer www.wers.net					
Skylights	**Glazing Type**	**Frame Type**	**U value**	**SHGC Value**	**Description**
No Skylights proposed					
External Wall Type	**Insulation(Added)**	**Colour**			**Description**
100mm Cast Concrete+PB lining	R2.5	Light			As per Plans & Elevations
Alucobond Panel +PB lining	R2.5	Light			As per Plans & Elevations
Internal Wall Type	**Insulation(Added)**	**Colour**			**Description**
200mm Concrete Block-core filled	None				All Party Walls
Plasterboard on studs	None				Throughout internal of all units
Floors	**Insulation**	**Floor Covering**			**Description**
Concrete Slab on Ground	R2.5	Paraquetry/Tiles			Balconies/air below-Level 9 units & unit 1205
Susp Concrete Floor	None	Paraquetry/Tiles			Neighbours below
Roof/Ceiling Type	**Insulation(Added)**	**Colour**			**Description**
Concrete Roof	R3.5 to ceilings with Roof above	Medium			Throughout Level 14
External Shading					**Description**
Balconies					As per Plans & Elevations
Eaves	**Width**	**Vertical Offset**			**Description**
Additional Items					
Roof ventillation:None				Ventillated Skylights:None	
Sealed Exhaust Fans:Yes(self closing)				Downlights: Yes (Default 4 per 10 sqm)	
Seals to Windows to be provided as per AS2047					
THE RATING IS DONE WITH DEFAULT NUMBER OF DOWNLIGHTS INSTALLED.IF SUCH PENETRATIONS ARE ALTERED AT THE TIME OF CONSTRUCTION RE-ASSESSMENT WILL BE REQUIRED FOR COMPENSATION OF LOSS OF INSULATION AS PER NCC(Vol1)					

PARKING BREAKDOWN BY USE

SUPERMARKET	29	(1 ACCESSIBLE)
RETAIL	8	(1 ACCESSIBLE)
TAVERN	5	
F&B	1	
MEDICAL CENTRE	5	(2 ACCESSIBLE)
GYM	14	(1 ACCESSIBLE SPACE TO BE SHARED WITH RETAIL)
HOTEL	20	(2 ACCESSIBLE, 1 STAFF PARKING)
RESIDENT	33	(4 ACCESSIBLE)
VISITORS	7	(1 ACCESSIBLE SPACE TO BE SHARED WITH MEDICAL CENTRE)

PARKING LEGEND

SUPERMARKET
MIN CAR PARK SPACE 2.6 X 5.5
MIN AISLEWIDTH 6.6M

RETAIL
MIN CAR PARK SPACE 2.6 X 5.4
MIN AISLE WIDTH 5.8M

TAVERN
MIN CAR PARK SPACE 2.6 X 5.5
MIN AISLEWIDTH 5.8M

MEDICAL CENTRE
MIN CAR PARK SPACE 2.6 X 5.4
MIN AISLEWIDTH 5.8M

GYM
MIN CAR PARK SPACE 2.5 X 5.4
MIN AISLE WIDTH 5.8M

F & B
MIN CAR PARK SPACE 2.5 X 5.4
MIN AISLE WIDTH 5.8M

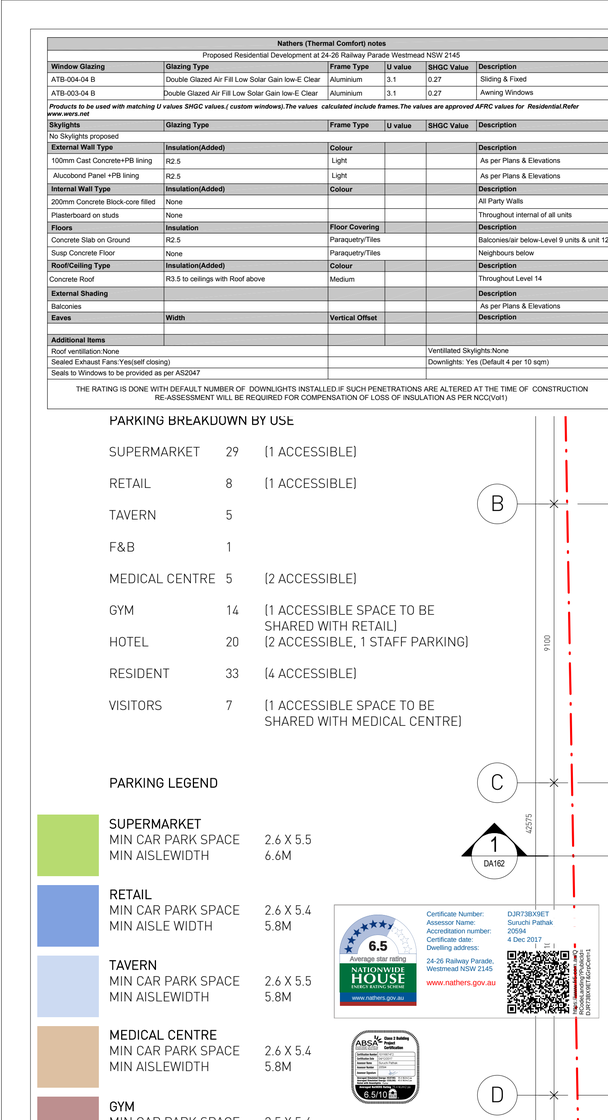
HOTEL
MIN CAR PARK SPACE 2.4 X 5.4
MIN AISLE WIDTH 5.8M

RESIDENTIAL
MIN CAR PARK SPACE 2.4 X 5.4
MIN AISLE WIDTH 5.8M

VISITOR
MIN CAR PARK SPACE 2.4 X 5.4
MIN AISLE WIDTH 5.8M

BICYCLE
BIKE PARK SPACE 0.5 X 2.0

USER CLASS REFER AS2890.1:2004
TABLE 1.1 CLASSIFICATION OF OFF-STREET CAR PARKING FACILITIES AND FIGURE 2.2 LAYOUTS FOR ANGLE PARKING SPACES



General Notes

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4. All omissions or discrepancies shall be notified to the architect
5. Mechanical and Electrical plant and services shown are indicative only. Refer to Service Engineers drawings.
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Rev.	Date	Comment
A	28.05.2018	DA SUBMISSION

REFER SWEPT PATHS DIAGRAMS FOR DETAILS.

North

Project
24-26 Railway Parade Westmead 2145
NSW

Client
Drill Pty Ltd

Architect
SISSONS ARCHITECTS
Studio 5, Level 2
81 Alexander St, Crows Nest, NSW 2065
Tel. 02 9460 8002
www.sissonsarchitects.com

Scale
1 : 100 @A1 HALF SCALE @ A3

Drawing Title
LB3 CAR PARK PLAN

DEVELOPMENT APPLICATION

16-021 DA112 A
Project No. Drawing No. Rev.

Nathers (Thermal Comfort) notes					
Proposed Residential Development at 24-26 Railway Parade Westmead NSW 2145					
Window Glazing	**Glazing Type**	**Frame Type**	**U value**	**SHGC Value**	**Description**
ATB-004-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Sliding & Fixed
ATB-003-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Awning Windows
Products to be used with matching U values SHGC values.(custom windows),The values calculated include frames.The values are approved AFRC values for Residential.Refer www.wers.net					
Skylights	**Glazing Type**	**Frame Type**	**U value**	**SHGC Value**	**Description**
No Skylights proposed					
External Wall Type	**Insulation(Added)**	**Colour**			**Description**
100mm Cast Concrete+PB lining	R2.5	Light			As per Plans & Elevations
Alucobond Panel +PB lining	R2.5	Light			As per Plans & Elevations
Internal Wall Type	**Insulation(Added)**	**Colour**			**Description**
200mm Concrete Block-core filled	None				All Party Walls
Plasterboard on studs	None				Throughout internal of all units
Floors	**Insulation**	**Floor Covering**			**Description**
Concrete Slab on Ground	R2.5	Parquetry/Tiles			Balconies/air below-Level 9 units & unit 1205
Susp Concrete Floor	None	Parquetry/Tiles			Neighbours below
Roof/Ceiling Type	**Insulation(Added)**	**Colour**			**Description**
Concrete Roof	R3.5 to ceilings with Roof above	Medium			Throughout Level 14
External Shading					**Description**
Balconies					As per Plans & Elevations
Eaves	**Width**	**Vertical Offset**			**Description**
Additional Items					
Roof ventilation:None				Ventilated Skylights:None	
Sealed Exhaust Fans:Yes(self closing)				Downlights: Yes (Default 4 per 10 sqm)	
Seals to Windows to be provided as per AS2047					
THE RATING IS DONE WITH DEFAULT NUMBER OF DOWNLIGHTS INSTALLED.IF SUCH PENETRATIONS ARE ALTERED AT THE TIME OF CONSTRUCTION RE-ASSESSMENT WILL BE REQUIRED FOR COMPENSATION OF LOSS OF INSULATION AS PER NCC(Vol1)					

PARKING BREAKDOWN BY USE

SUPERMARKET	29	(1 ACCESSIBLE)
RETAIL	8	(1 ACCESSIBLE)
TAVERN	5	
F&B	1	
MEDICAL CENTRE	5	(2 ACCESSIBLE)
GYM	14	(1 ACCESSIBLE SPACE TO BE SHARED WITH RETAIL)
HOTEL	20	(2 ACCESSIBLE, 1 STAFF PARKING)
RESIDENT	33	(4 ACCESSIBLE)
VISITORS	7	(1 ACCESSIBLE SPACE TO BE SHARED WITH MEDICAL CENTRE)

PARKING LEGEND

SUPERMARKET
MIN CAR PARK SPACE 2.6 X 5.5
MIN AISLEWIDTH 6.6M

RETAIL
MIN CAR PARK SPACE 2.6 X 5.4
MIN AISLE WIDTH 5.8M

TAVERN
MIN CAR PARK SPACE 2.6 X 5.5
MIN AISLEWIDTH 5.8M

MEDICAL CENTRE
MIN CAR PARK SPACE 2.6 X 5.4
MIN AISLEWIDTH 5.8M

GYM
MIN CAR PARK SPACE 2.5 X 5.4
MIN AISLE WIDTH 5.8M

F & B
MIN CAR PARK SPACE 2.5 X 5.4
MIN AISLE WIDTH 5.8M

HOTEL
MIN CAR PARK SPACE 2.4 X 5.4
MIN AISLE WIDTH 5.8M

RESIDENTIAL
MIN CAR PARK SPACE 2.4 X 5.4
MIN AISLE WIDTH 5.8M

VISITOR
MIN CAR PARK SPACE 2.4 X 5.4
MIN AISLE WIDTH 5.8M

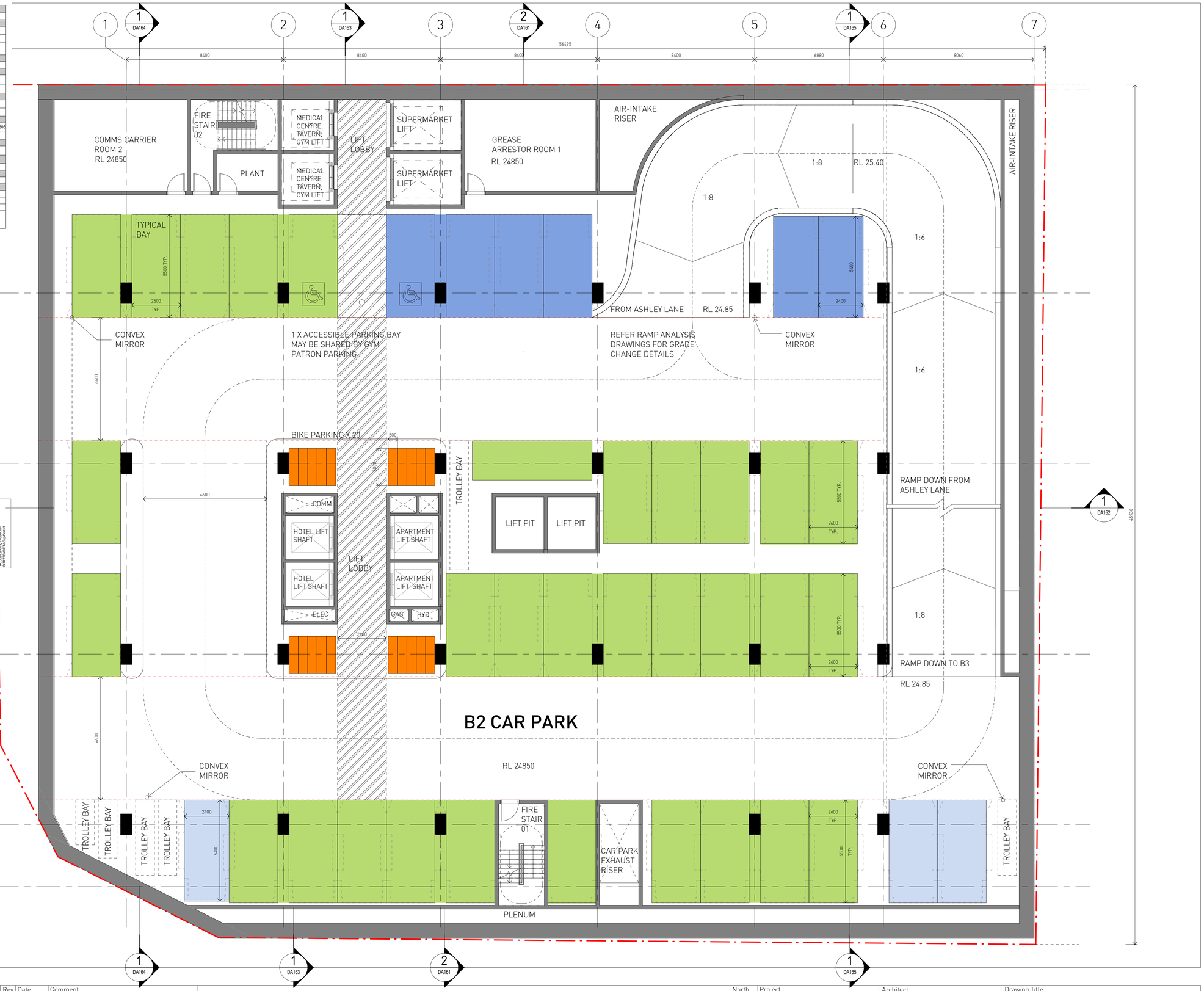
BICYCLE
BIKE PARK SPACE 0.5 X 2.0

USER CLASS REFER AS2890.1:2004
TABLE 1.1 CLASSIFICATION OF OFF-STREET CAR PARKING FACILITIES AND FIGURE 2.2 LAYOUTS FOR ANGLE PARKING SPACES

6.5 Average star rating
NATIONWIDE HOUSE ENERGY RATING SCHEME
www.nathers.gov.au

Certificate Number: DJR73BX9ET
Assessor Name: Suruchi Pathak
Accreditation number: 20594
Certificate date: 4 Dec 2017
Dwelling address: 24-26 Railway Parade, Westmead NSW 2145
www.nathers.gov.au

ABSA Class 2 Building Project Certification
6.5/10



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6. All steelwork section sizes are indicative only. Refer to Structural Engineers drawings for serial sizes.

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Rev.	Date	Comment
A	28.05.2018	DA SUBMISSION

REFER SWEPT PATHS DIAGRAMS FOR DETAILS.

North

Project
24-26 Railway Parade Westmead 2145
NSW

Client
Drill Pty Ltd

Architect
SISSONS ARCHITECTS
Studio 5, Level 2
81 Alexander St, Crows Nest, NSW 2065
Tel. 02 9460 8002
www.sissonsarchitects.com

Drawing Title
LB2 CAR PARK PLAN

DEVELOPMENT APPLICATION

Scale
1 : 100 @A1 HALF SCALE @ A3

16-021 DA113 A
Project No. Drawing No. Rev.

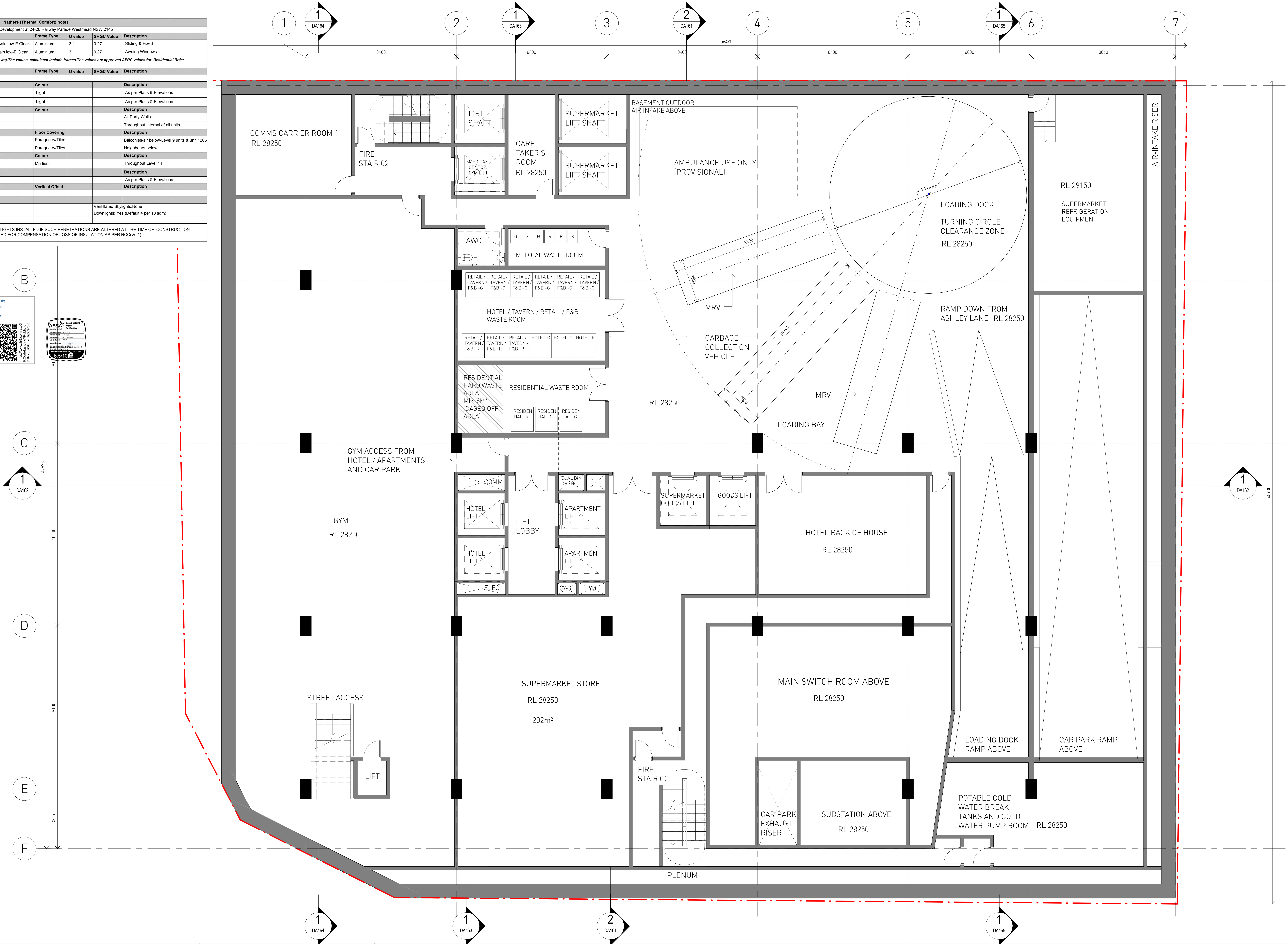
Nathers (Thermal Comfort) notes					
Proposed Residential Development at 24-26 Railway Parade Westmead NSW 2145					
Window Glazing	**Glazing Type**	**Frame Type**	**U value**	**SHGC Value**	**Description**
ATB-004-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Sliding & Fixed
ATB-003-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Awning Windows
Products to be used with matching U values SHGC values.(custom windows).The values calculated include frames.The values are approved AFRC values for Residential.Refer www.wers.net					
Skylights	**Glazing Type**	**Frame Type**	**U value**	**SHGC Value**	**Description**
No Skylights proposed					
External Wall Type	**Insulation(Added)**	**Colour**			**Description**
100mm Cast Concrete+PB lining	R2.5	Light			As per Plans & Elevations
Alucobond Panel +PB lining	R2.5	Light			As per Plans & Elevations
Internal Wall Type	**Insulation(Added)**	**Colour**			**Description**
200mm Concrete Block-core filled	None				All Party Walls
Plasterboard on studs	None				Throughout internal of all units
Floors	**Insulation**	**Floor Covering**			**Description**
Concrete Slab on Ground	R2.5	Paraquetry/Tiles			Balconies/air below-Level 9 units & unit 1205
Susp Concrete Floor	None	Paraquetry/Tiles			Neighbours below
Roof/Ceiling Type	**Insulation(Added)**	**Colour**			**Description**
Concrete Roof	R3.5 to ceilings with Roof above	Medium			Throughout Level 14
External Shading					**Description**
Balconies					As per Plans & Elevations
Eaves	**Width**	**Vertical Offset**			**Description**
Additional Items					
Roof ventillation:None				Ventillated Skylights:None	
Sealed Exhaust Fans:Yes(self closing)				Downlights: Yes (Default 4 per 10 sqm)	
Seals to Windows to be provided as per AS2047					

THE RATING IS DONE WITH DEFAULT NUMBER OF DOWNLIGHTS INSTALLED.IF SUCH PENETRATIONS ARE ALTERED AT THE TIME OF CONSTRUCTION RE-ASSESSMENT WILL BE REQUIRED FOR COMPENSATION OF LOSS OF INSULATION AS PER NCC(Vol1)

6.5
Average star rating
NATIONWIDE HOUSE ENERGY RATING SCHEME
www.nathers.gov.au

Certificate Number: DJR73BX9ET
Assessor Name: Suruchi Pathak
Accreditation number: 20594
Certificate date: 4 Dec 2017
Dwelling address: 24-26 Railway Parade, Westmead NSW 2145
www.nathers.gov.au
https://www.fr5.com.au/QRCodeLanding?PublicId=DJR73BX9ET&GrpCert=1

ABSA Australian Building Sustainability Association — Class 2 Building Project Certification
Certification Number: 1011667472
Certification Date: 04/12/2017
Assessor Name: Suruchi Pathak
Assessor Number: 20594
Assessor Signature
Averaged Simulated Energy: HEATING: 35.4 MJ/m2 pa
Averaged Simulated Energy: COOLING: 40.0 MJ/m2 pa
Rated with Downlights: Partial
Averaged NatHERS Rating 75.4 MJ/m2 pa
6.5/10



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REFER SWEPT PATHS DIAGRAMS FOR DETAILS.

North

Project: 24-26 Railway Parade Westmead 2145 NSW

Architect: SISSONS ARCHITECTS
Studio 5, Level 2
81 Alexander St, Crows Nest, NSW 2065
Tel. 02 9460 8002
www.sissonsarchitects.com

Drawing Title: LB1 GYM_STORE_LOADING DOCK PLAN

DEVELOPMENT APPLICATION

Client: Drill Pty Ltd

Scale: 1 : 100 @A1 HALF SCALE @ A3

Project No.: 16-021 Drawing No.: DA114 Rev.: A

Nathers (Thermal Comfort) notes					
Proposed Residential Development at 24-26 Railway Parade Westmead NSW 2145					
Window Glazing	**Glazing Type**	**Frame Type**	**U value**	**SHGC Value**	**Description**
ATB-004-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Sliding & Fixed
ATB-003-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Awning Windows
Products to be used with matching U values SHGC values.(custom windows).The values calculated include frames.The values are approved AFRC values for Residential.Refer www.wers.net					
Skylights	**Glazing Type**	**Frame Type**	**U value**	**SHGC Value**	**Description**
No Skylights proposed					
External Wall Type	**Insulation(Added)**	**Colour**			**Description**
100mm Cast Concrete+PB lining	R2.5	Light			As per Plans & Elevations
Alucobond Panel +PB lining	R2.5	Light			As per Plans & Elevations
Internal Wall Type	**Insulation(Added)**	**Colour**			**Description**
200mm Concrete Block-core filled	None				All Party Walls
Plasterboard on studs	None				Throughout internal of all units
Floors	**Insulation**	**Floor Covering**			**Description**
Concrete Slab on Ground	R2.5	Paraquetry/Tiles			Balconies/air below-Level 9 units & unit 1205
Susp Concrete Floor	None	Paraquetry/Tiles			Neighbours below
Roof/Ceiling Type	**Insulation(Added)**	**Colour**			**Description**
Concrete Roof	R3.5 to ceilings with Roof above	Medium			Throughout Level 14
External Shading					**Description**
Balconies					As per Plans & Elevations
Eaves	**Width**	**Vertical Offset**			**Description**
Additional Items					
Roof ventillation:None				Ventillated Skylights:None	
Sealed Exhaust Fans:Yes(self closing)				Downlights: Yes (Default 4 per 10 sqm)	
Seals to Windows to be provided as per AS2047					

THE RATING IS DONE WITH DEFAULT NUMBER OF DOWNLIGHTS INSTALLED.IF SUCH PENETRATIONS ARE ALTERED AT THE TIME OF CONSTRUCTION RE-ASSESSMENT WILL BE REQUIRED FOR COMPENSATION OF LOSS OF INSULATION AS PER NCC(Vol1)

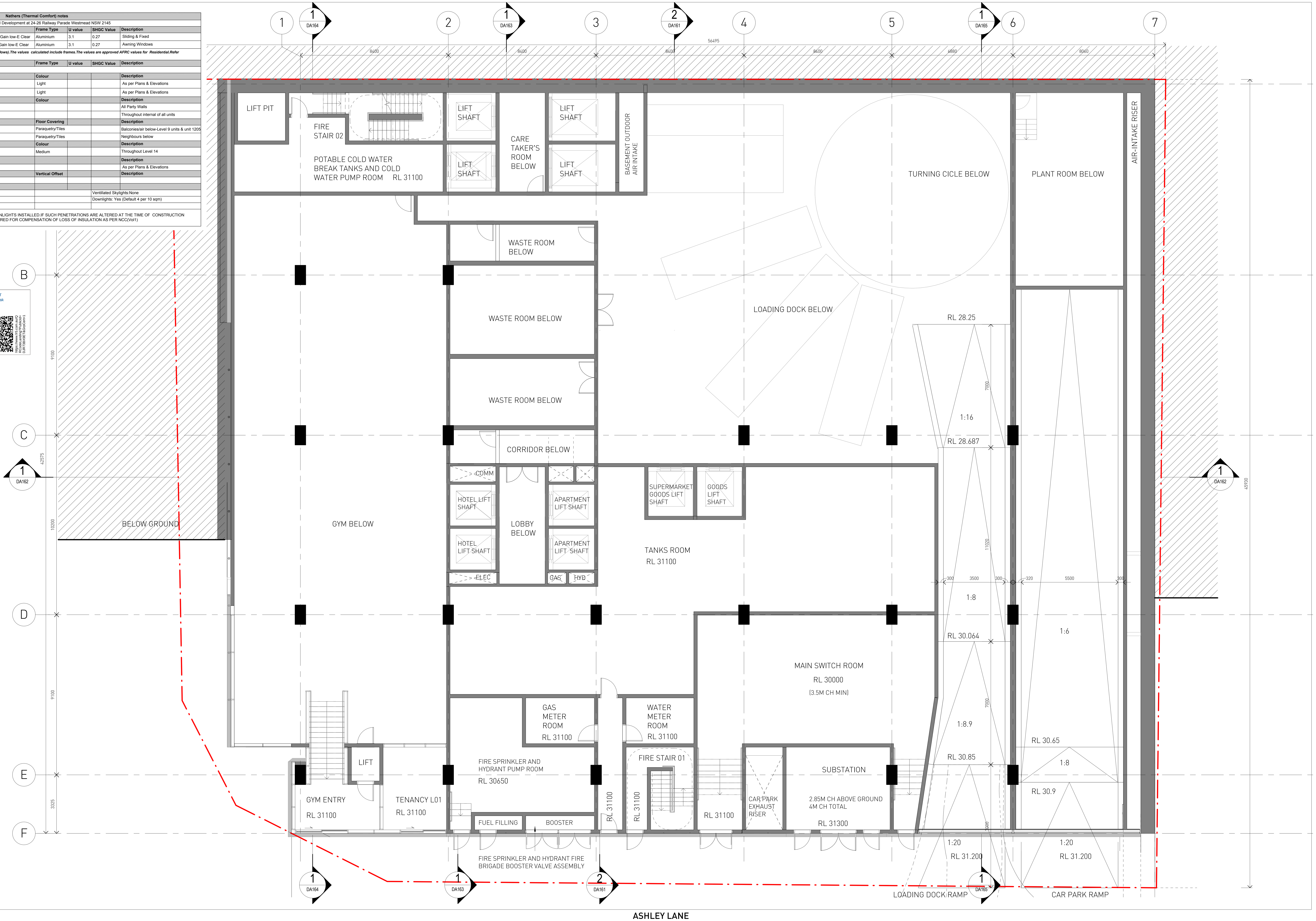
6.5 Average star rating
NATIONWIDE HOUSE ENERGY RATING SCHEME
www.nathers.gov.au

Certificate Number: DJR73BX9ET
Assessor Name: Suruchi Pathak
Accreditation number: 20594
Certificate date: 4 Dec 2017
Dwelling address: 24-26 Railway Parade, Westmead NSW 2145
www.nathers.gov.au
https://www.fr5.com.au/QRCodeLanding?PublicId=DJR73BX9ET&GrpCert=1

ABSA Australian Building Sustainability Association — Class 2 Building Project Certification

Certification Number	1011667472
Certification Date	04/12/2017
Assessor Name	Suruchi Pathak
Assessor Number	20594
Assessor Signature	

Averaged Simulated Energy: HEATING: 35.4 MJ/m2 pa
Averaged Simulated Energy: COOLING: 40.0 MJ/m2 pa
Rated with Downlights: Partial
Averaged NatHERS Rating 75.4 MJ/m2 pa
6.5/10



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6. All steelwork section sizes are indicative only. Refer to Structural Engineers drawings for serial sizes.

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Rev.	Date	Comment
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REFER SWEPT PATHS DIAGRAMS FOR DETAILS.

REFER RAMP ANALYSIS DRAWINGS FOR GRADE CHANGE DETAILS

North

Project: 24-26 Railway Parade Westmead 2145 NSW

Client: Drill Pty Ltd

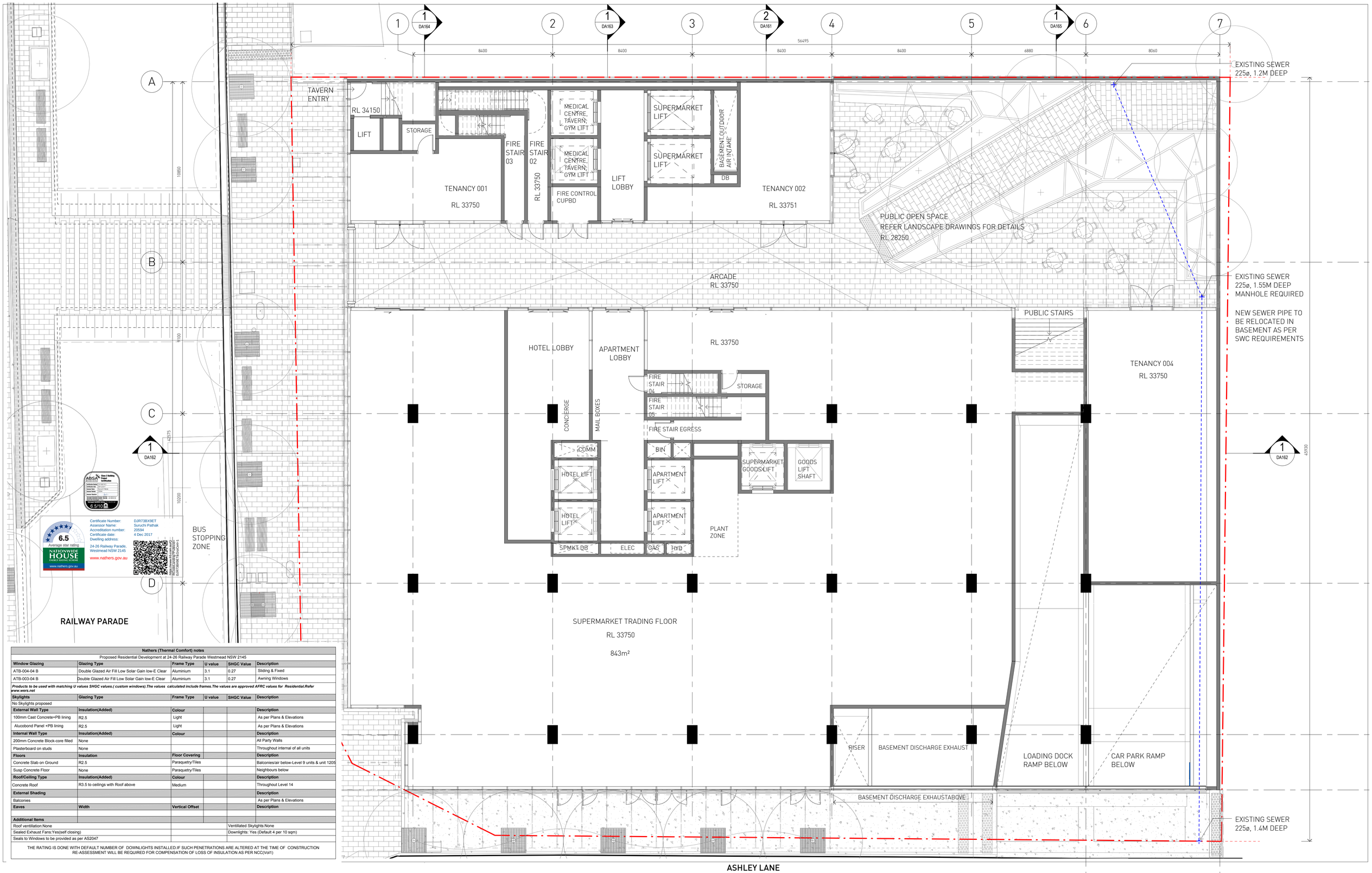
Architect: SISSONS ARCHITECTS
Studio 5, Level 2
81 Alexander St, Crows Nest, NSW 2065
Tel. 02 9460 8002
www.sissonsarchitects.com

Scale: 1 : 100 @A1 HALF SCALE @ A3

Drawing Title: LOWER GROUND - ASHLEY LANE

DEVELOPMENT APPLICATION

Project No. 16-021 Drawing No. DA115 Rev. A



Certificate Number: DJR73BX9ET
Assessor Name: Suruchi Pathak
Accreditation number: 20594
Certificate date: 4 Dec 2017
Dwelling address: 24-26 Railway Parade, Westmead NSW 2145
www.nathers.gov.au
6.5 Average star rating
NATIONWIDE HOUSE ENERGY RATING SCHEME www.nathers.gov.au

Nathers (Thermal Comfort) notes

Proposed Residential Development at 24-26 Railway Parade Westmead NSW 2145

Window Glazing	Glazing Type	Frame Type	U value	SHGC Value	Description
ATB-004-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Sliding & Fixed
ATB-003-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Awning Windows

Products to be used with matching U values SHGC values.(custom windows).The values calculated include frames.The values are approved AFRC values for Residential.Refer www.wers.net

Skylights	Glazing Type	Frame Type	U value	SHGC Value	Description
No Skylights proposed					
External Wall Type	**Insulation(Added)**	**Colour**			**Description**
100mm Cast Concrete+PB lining	R2.5	Light			As per Plans & Elevations
Alucobond Panel +PB lining	R2.5	Light			As per Plans & Elevations
Internal Wall Type	**Insulation(Added)**	**Colour**			**Description**
200mm Concrete Block-core filled	None				All Party Walls
Plasterboard on studs	None				Throughout internal of all units
Floors	**Insulation**	**Floor Covering**			**Description**
Concrete Slab on Ground	R2.5	Paraquetry/Tiles			Balconies/air below-Level 9 units & unit 1205
Susp Concrete Floor	None	Paraquetry/Tiles			Neighbours below
Roof/Ceiling Type	**Insulation(Added)**	**Colour**			**Description**
Concrete Roof	R3.5 to ceilings with Roof above	Medium			Throughout Level 14
External Shading					**Description**
Balconies					As per Plans & Elevations
Eaves	**Width**	**Vertical Offset**			**Description**
Additional Items					
Roof ventillation:None				Ventillated Skylights:None	
Sealed Exhaust Fans:Yes(self closing)				Downlights: Yes (Default 4 per 10 sqm)	
Seals to Windows to be provided as per AS2047					

THE RATING IS DONE WITH DEFAULT NUMBER OF DOWNLIGHTS INSTALLED.IF SUCH PENETRATIONS ARE ALTERED AT THE TIME OF CONSTRUCTION RE-ASSESSMENT WILL BE REQUIRED FOR COMPENSATION OF LOSS OF INSULATION AS PER NCC(Vol1)

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6. All steelwork section sizes are indicative only. Refer to Structural Engineers drawings for serial sizes.

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North

Project
24-26 Railway Parade Westmead 2145
NSW

Client
Drill Pty Ltd

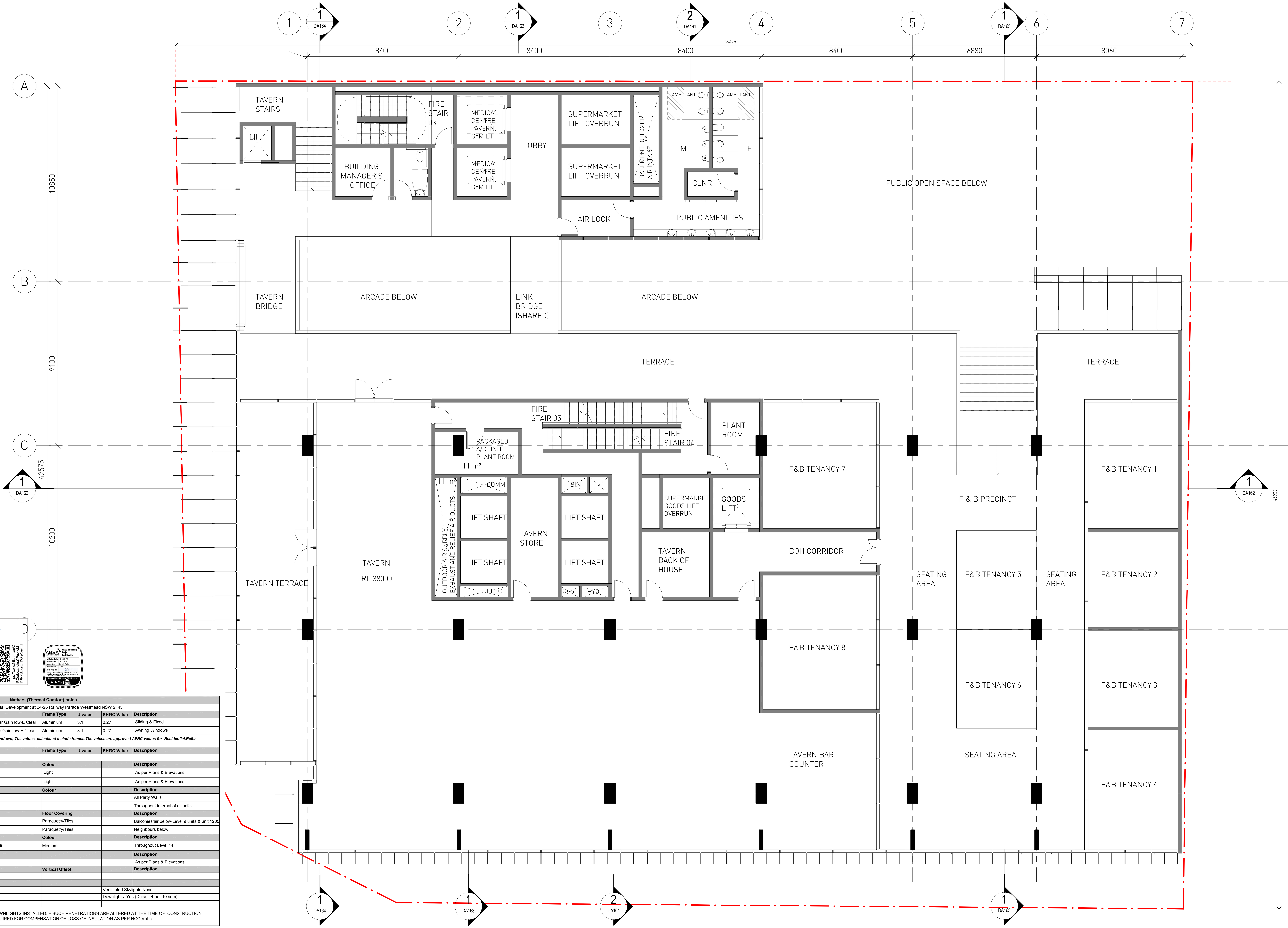
Architect
SISSONS ARCHITECTS
Studio 5, Level 2
81 Alexander St, Crows Nest, NSW 2065
Tel. 02 9460 8002
www.sissonsarchitects.com

Drawing Title
UPPER GROUND - RAILWAY PARADE

DEVELOPMENT APPLICATION

Scale
1 : 100 @A1 HALF SCALE @ A3

16-021 DA116 A
Project No. Drawing No. Rev.



6.5
Average star rating
NATIONWIDE HOUSE ENERGY RATING SCHEME
www.nathers.gov.au

Certificate Number: DJR73BX9ET
Assessor Name: Suruchi Pathak
Accreditation number: 20594
Certificate date: 4 Dec 2017
Dwelling address:
24-26 Railway Parade, Westmead NSW 2145
www.nathers.gov.au

https://www.fr5.com.au/QRCodeLanding?PublicId=DJR73BX9ET&GrpCert=1

ABSA Australian Building Sustainability Association
Class 2 Building Project Certification
Averaged NatHERS Rating
6.5/10

Nathers (Thermal Comfort) notes					
Proposed Residential Development at 24-26 Railway Parade Westmead NSW 2145					
Window Glazing	**Glazing Type**	**Frame Type**	**U value**	**SHGC Value**	**Description**
ATB-004-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Sliding & Fixed
ATB-003-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Awning Windows
Products to be used with matching U values SHGC values.(custom windows).The values calculated include frames.The values are approved AFRC values for Residential.Refer www.wers.net					
Skylights	**Glazing Type**	**Frame Type**	**U value**	**SHGC Value**	**Description**
No Skylights proposed					
External Wall Type	**Insulation(Added)**	**Colour**			**Description**
100mm Cast Concrete+PB lining	R2.5	Light			As per Plans & Elevations
Alucobond Panel +PB lining	R2.5	Light			As per Plans & Elevations
Internal Wall Type	**Insulation(Added)**	**Colour**			**Description**
200mm Concrete Block-core filled	None				All Party Walls
Plasterboard on studs	None				Throughout internal of all units
Floors	**Insulation**	**Floor Covering**			**Description**
Concrete Slab on Ground	R2.5	Paraquetry/Tiles			Balconies/air below-Level 9 units & unit 1205
Susp Concrete Floor	None	Paraquetry/Tiles			Neighbours below
Roof/Ceiling Type	**Insulation(Added)**	**Colour**			**Description**
Concrete Roof	R3.5 to ceilings with Roof above	Medium			Throughout Level 14
External Shading					**Description**
Balconies					As per Plans & Elevations
Eaves	**Width**	**Vertical Offset**			**Description**
Additional Items					
Roof ventillation:None			Ventillated Skylights:None		
Sealed Exhaust Fans:Yes(self closing)			Downlights: Yes (Default 4 per 10 sqm)		
Seals to Windows to be provided as per AS2047					
THE RATING IS DONE WITH DEFAULT NUMBER OF DOWNLIGHTS INSTALLED.IF SUCH PENETRATIONS ARE ALTERED AT THE TIME OF CONSTRUCTION RE-ASSESSMENT WILL BE REQUIRED FOR COMPENSATION OF LOSS OF INSULATION AS PER NCC(Vol1)					

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North

Project
24-26 Railway Parade Westmead 2145
NSW

Client
Drill Pty Ltd

Architect
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Studio 5, Level 2
81 Alexander St, Crows Nest, NSW 2065
Tel. 02 9460 8002
www.sissonsarchitects.com

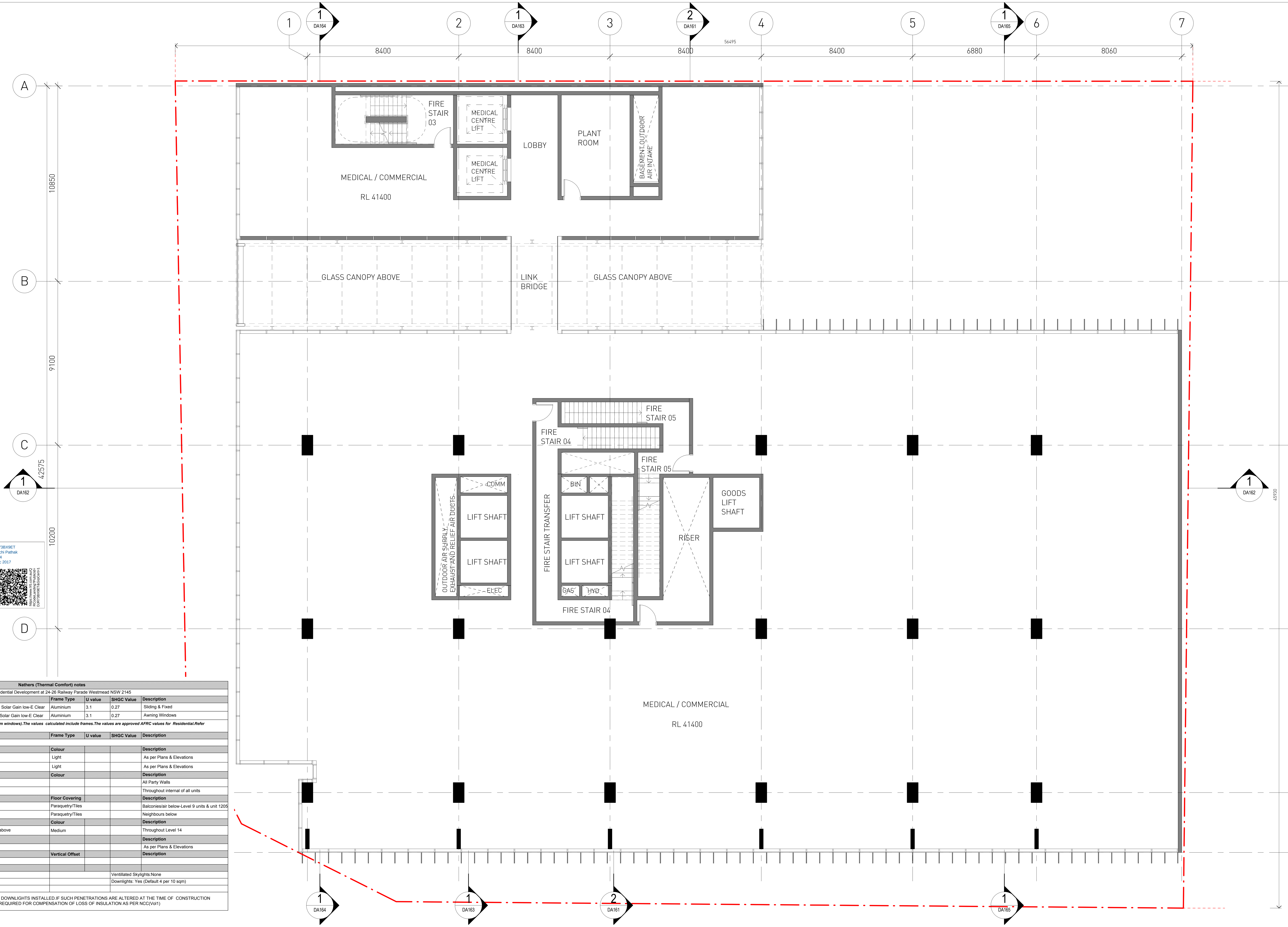
Scale
1 : 100 @A1 HALF SCALE @ A3

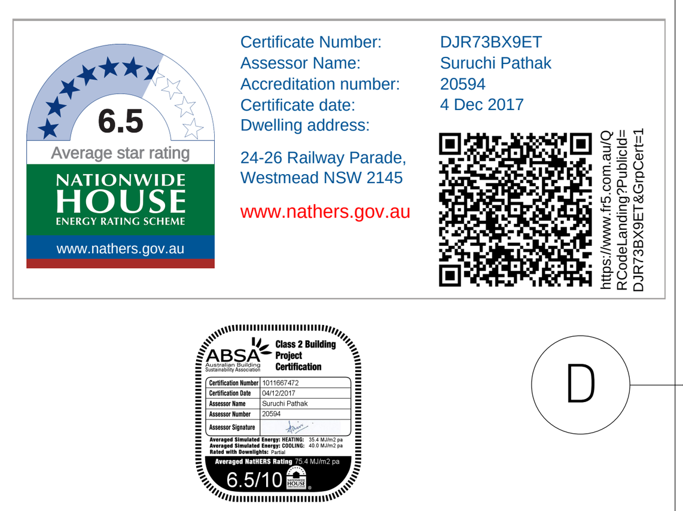
Drawing Title
LEVEL 01 - TAVERN_F&B PRECINCT

DEVELOPMENT APPLICATION

16-021 DA117 A

Project No. Drawing No. Rev.





Nathers (Thermal Comfort) notes					
Proposed Residential Development at 24-26 Railway Parade Westmead NSW 2145					
Window Glazing	**Glazing Type**	**Frame Type**	**U value**	**SHGC Value**	**Description**
ATB-004-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Sliding & Fixed
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Products to be used with matching U values SHGC values.(custom windows).The values calculated include frames.The values are approved AFRC values for Residential.Refer www.wers.net					
Skylights	**Glazing Type**	**Frame Type**	**U value**	**SHGC Value**	**Description**
No Skylights proposed					
External Wall Type	**Insulation(Added)**	**Colour**			**Description**
100mm Cast Concrete+PB lining	R2.5	Light			As per Plans & Elevations
Alucobond Panel +PB lining	R2.5	Light			As per Plans & Elevations
Internal Wall Type	**Insulation(Added)**	**Colour**			**Description**
200mm Concrete Block-core filled	None				All Party Walls
Plasterboard on studs	None				Throughout internal of all units
Floors	**Insulation**	**Floor Covering**			**Description**
Concrete Slab on Ground	R2.5	Paraquetry/Tiles			Balconies/air below-Level 9 units & unit 1205
Susp Concrete Floor	None	Paraquetry/Tiles			Neighbours below
Roof/Ceiling Type	**Insulation(Added)**	**Colour**			**Description**
Concrete Roof	R3.5 to ceilings with Roof above	Medium			Throughout Level 14
External Shading					**Description**
Balconies					As per Plans & Elevations
Eaves	**Width**	**Vertical Offset**			**Description**
Additional Items					
Roof ventillation:None				Ventillated Skylights:None	
Sealed Exhaust Fans:Yes(self closing)				Downlights: Yes (Default 4 per 10 sqm)	
Seals to Windows to be provided as per AS2047					

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Rev.	Date	Comment
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North

Project
24-26 Railway Parade Westmead 2145 NSW

Client
Drill Pty Ltd

Architect
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81 Alexander St, Crows Nest, NSW 2065
Tel. 02 9460 8002
www.sissonsarchitects.com

Scale
1 : 100 @A1 HALF SCALE @ A3

Drawing Title
LEVEL 02 - MEDICAL CENTRE

DEVELOPMENT APPLICATION

16-021 DA118 A

Project No. Drawing No. Rev.

6.5 Average star rating
NATIONWIDE HOUSE ENERGY RATING SCHEME
www.nathers.gov.au

Certificate Number: DJR73BX9ET
Assessor Name: Suruchi Pathak
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https://www.fr5.com.au/QRCodeLanding?PublicId=DJR73BX9ET&GrpCert=1

ABSA Australian Building Sustainability Association — Class 2 Building Project Certification
Certification Number 1011667472
Certification Date 04/12/2017
Assessor Name Suruchi Pathak
Assessor Number 20594
Assessor Signature
Averaged Simulated Energy: HEATING: 35.4 MJ/m2 pa
Averaged Simulated Energy: COOLING: 40.0 MJ/m2 pa
Rated with Downlights: Partial
Averaged NatHERS Rating 75.4 MJ/m2 pa
6.5/10

Nathers (Thermal Comfort) notes

Proposed Residential Development at 24-26 Railway Parade Westmead NSW 2145

Window Glazing	Glazing Type	Frame Type	U value	SHGC Value	Description
ATB-004-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Sliding & Fixed
ATB-003-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Awning Windows
Products to be used with matching U values SHGC values.(custom windows).The values calculated include frames.The values are approved AFRC values for Residential.Refer www.wers.net					
Skylights	**Glazing Type**	**Frame Type**	**U value**	**SHGC Value**	**Description**
No Skylights proposed					
External Wall Type	**Insulation(Added)**	**Colour**			**Description**
100mm Cast Concrete+PB lining	R2.5	Light			As per Plans & Elevations
Alucobond Panel +PB lining	R2.5	Light			As per Plans & Elevations
Internal Wall Type	**Insulation(Added)**	**Colour**			**Description**
200mm Concrete Block-core filled	None				All Party Walls
Plasterboard on studs	None				Throughout internal of all units
Floors	**Insulation**	**Floor Covering**			**Description**
Concrete Slab on Ground	R2.5	Paraquetry/Tiles			Balconies/air below-Level 9 units & unit 1205
Susp Concrete Floor	None	Paraquetry/Tiles			Neighbours below
Roof/Ceiling Type	**Insulation(Added)**	**Colour**			**Description**
Concrete Roof	R3.5 to ceilings with Roof above	Medium			Throughout Level 14
External Shading					**Description**
Balconies					As per Plans & Elevations
Eaves	**Width**	**Vertical Offset**			**Description**
Additional Items					
Roof ventillation:None				Ventillated Skylights:None	
Sealed Exhaust Fans:Yes(self closing)				Downlights: Yes (Default 4 per 10 sqm)	
Seals to Windows to be provided as per AS2047					

THE RATING IS DONE WITH DEFAULT NUMBER OF DOWNLIGHTS INSTALLED.IF SUCH PENETRATIONS ARE ALTERED AT THE TIME OF CONSTRUCTION RE-ASSESSMENT WILL BE REQUIRED FOR COMPENSATION OF LOSS OF INSULATION AS PER NCC(Vol1)

General Notes

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6. All steelwork section sizes are indicative only. Refer to Structural Engineers drawings for serial sizes.

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Rev.	Date	Comment
A	28.05.2018	DA SUBMISSION

North

Project: 24-26 Railway Parade Westmead 2145 NSW

Client: Drill Pty Ltd

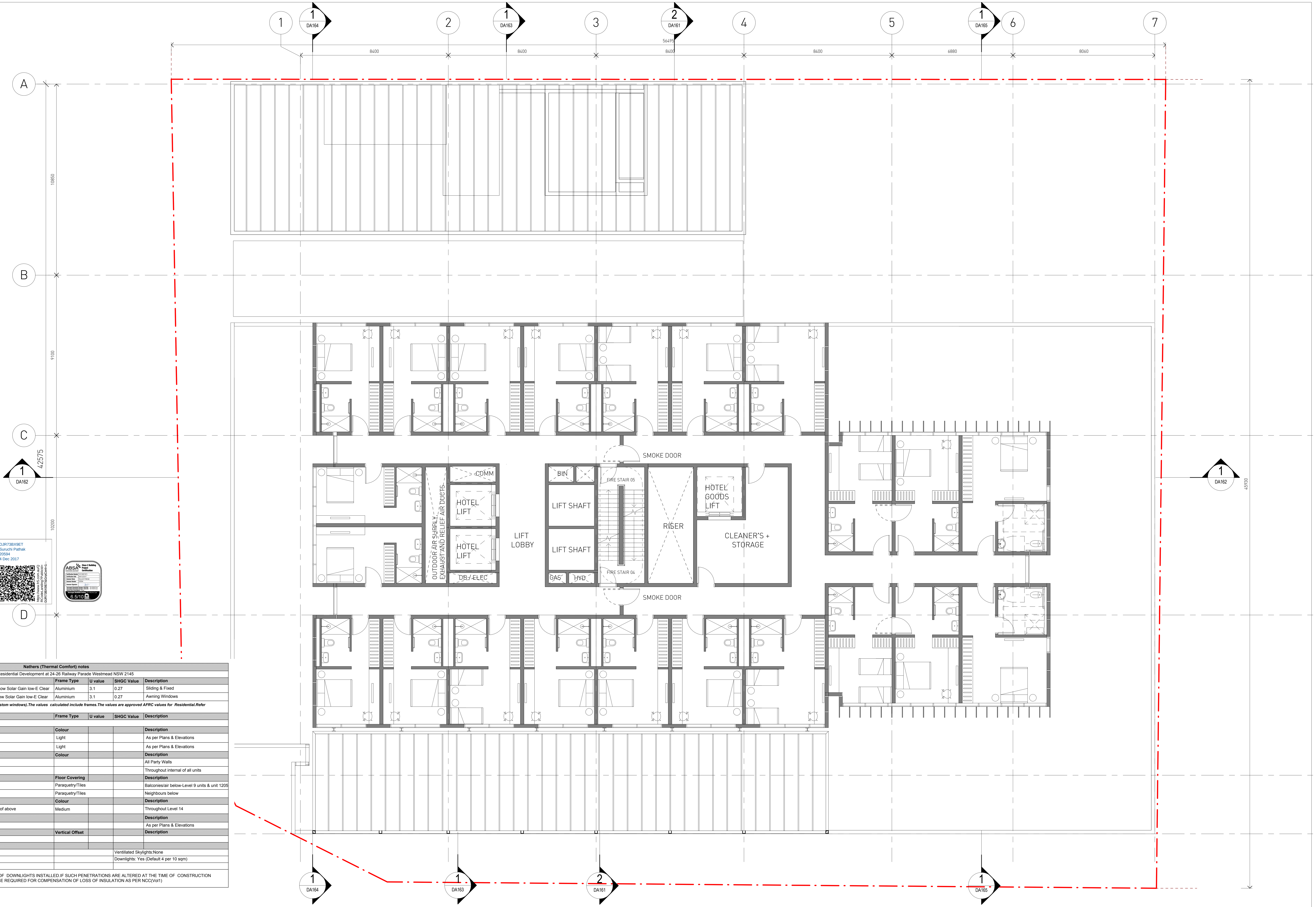
Architect: SISSONS ARCHITECTS
Studio 5, Level 2
81 Alexander St, Crows Nest, NSW 2065
Tel. 02 9460 8002
www.sissonsarchitects.com

Scale: 1 : 100 @A1 HALF SCALE @ A3

Drawing Title: LEVEL 03 - HOTEL LOBBY

DEVELOPMENT APPLICATION

Project No. 16-021 Drawing No. DA119 Rev. A



6.5
Average star rating
NATIONWIDE HOUSE ENERGY RATING SCHEME
www.nathers.gov.au

Certificate Number: DJR73BX9ET
Assessor Name: Suruchi Pathak
Accreditation number: 20594
Certificate date: 4 Dec 2017
Dwelling address:
24-26 Railway Parade,
Westmead NSW 2145
www.nathers.gov.au

https://www.fr5.com.au/QRCodeLanding?PublicId=DJR73BX9ET&GrpCert=1

ABSA Australian Building Sustainability Association
Class 2 Building Project Certification

Certification Number	1011667472
Certification Date	04/12/2017
Assessor Name	Suruchi Pathak
Assessor Number	20594
Assessor Signature	

Averaged Simulated Energy: HEATING: 35.4 MJ/m2 pa
Averaged Simulated Energy: COOLING: 40.0 MJ/m2 pa
Rated with Downlights: Partial
Averaged NatHERS Rating 75.4 MJ/m2 pa
6.5/10

Nathers (Thermal Comfort) notes

Proposed Residential Development at 24-26 Railway Parade Westmead NSW 2145

Window Glazing	Glazing Type	Frame Type	U value	SHGC Value	Description
ATB-004-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Sliding & Fixed
ATB-003-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Awning Windows
Products to be used with matching U values SHGC values.(custom windows).The values calculated include frames.The values are approved AFRC values for Residential.Refer www.wers.net					
Skylights	**Glazing Type**	**Frame Type**	**U value**	**SHGC Value**	**Description**
No Skylights proposed					
External Wall Type	**Insulation(Added)**	**Colour**			**Description**
100mm Cast Concrete+PB lining	R2.5	Light			As per Plans & Elevations
Alucobond Panel +PB lining	R2.5	Light			As per Plans & Elevations
Internal Wall Type	**Insulation(Added)**	**Colour**			**Description**
200mm Concrete Block-core filled	None				All Party Walls
Plasterboard on studs	None				Throughout internal of all units
Floors	**Insulation**	**Floor Covering**			**Description**
Concrete Slab on Ground	R2.5	Paraquetry/Tiles			Balconies/air below-Level 9 units & unit 1205
Susp Concrete Floor	None	Paraquetry/Tiles			Neighbours below
Roof/Ceiling Type	**Insulation(Added)**	**Colour**			**Description**
Concrete Roof	R3.5 to ceilings with Roof above	Medium			Throughout Level 14
External Shading					**Description**
Balconies					As per Plans & Elevations
Eaves	**Width**	**Vertical Offset**			**Description**
Additional Items					
Roof ventillation:None				Ventillated Skylights:None	
Sealed Exhaust Fans:Yes(self closing)				Downlights: Yes (Default 4 per 10 sqm)	
Seals to Windows to be provided as per AS2047					

THE RATING IS DONE WITH DEFAULT NUMBER OF DOWNLIGHTS INSTALLED.IF SUCH PENETRATIONS ARE ALTERED AT THE TIME OF CONSTRUCTION RE-ASSESSMENT WILL BE REQUIRED FOR COMPENSATION OF LOSS OF INSULATION AS PER NCC(Vol1)

General Notes

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6. All steelwork section sizes are indicative only. Refer to Structural Engineers drawings for serial sizes.

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Rev.	Date	Comment
A	28.05.2018	DA SUBMISSION

North

Project
24-26 Railway Parade Westmead 2145 NSW

Client
Drill Pty Ltd

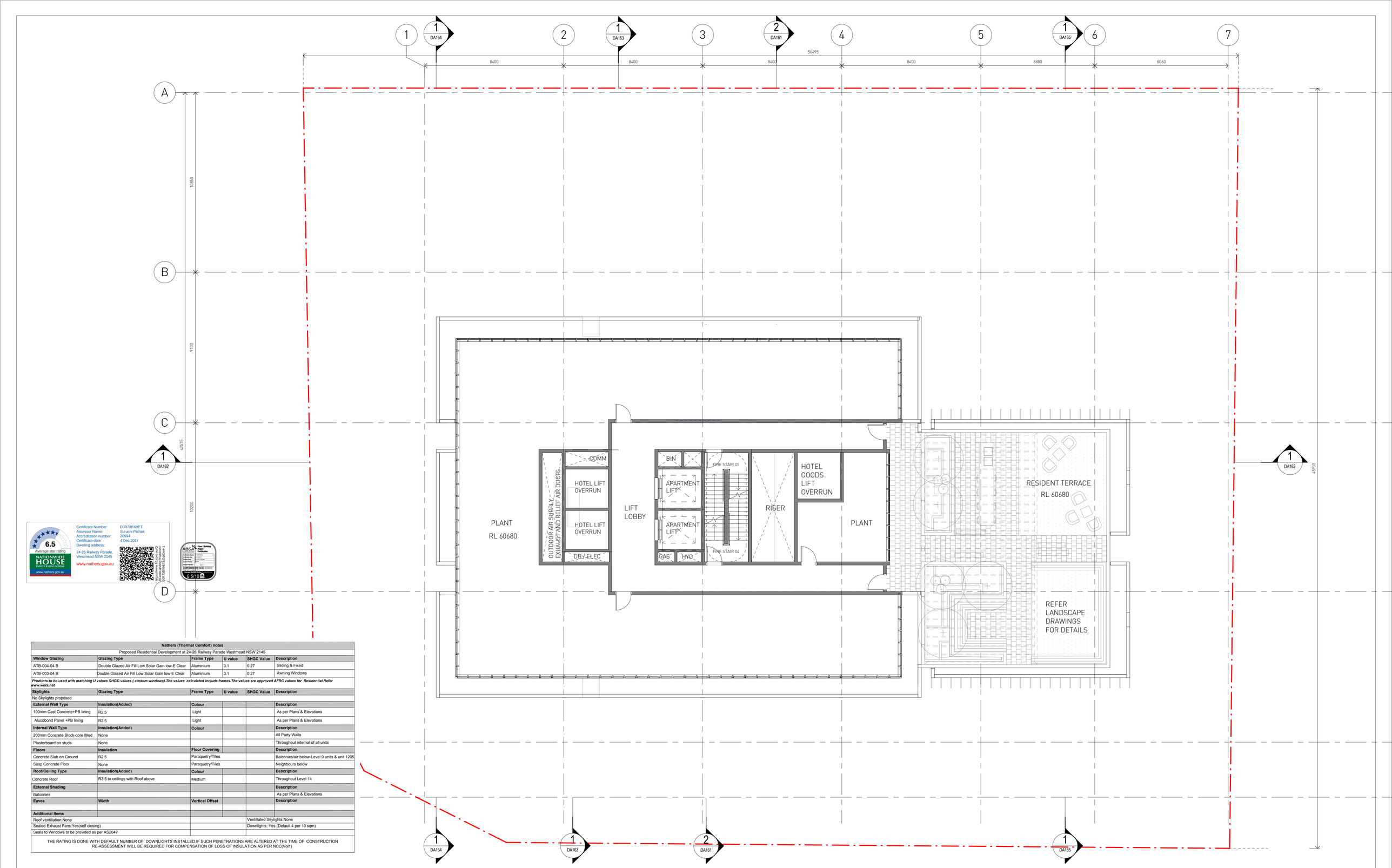
Architect
SISSONS ARCHITECTS
Studio 5, Level 2
81 Alexander St, Crows Nest, NSW 2065
Tel. 02 9460 8002
www.sissonsarchitects.com

Scale
1 : 100 @A1 HALF SCALE @ A3

Drawing Title
LEVEL 04- LEVEL 07 - HOTEL

DEVELOPMENT APPLICATION

16-021 DA120 A
Project No. Drawing No. Rev.



Certificate Number: DJR73BX9ET
Assessor Name: Suruchi Pathak
Accreditation number: 20594
Certificate date: 4 Dec 2017
Dwelling address: 24-26 Railway Parade, Westmead NSW 2145
www.nathers.gov.au

6.5 Average star rating
NATIONWIDE HOUSE ENERGY RATING SCHEME
www.nathers.gov.au

ABSA Class 2 Building Project Certificate
6.5/10

Nathers (Thermal Comfort) notes					
Proposed Residential Development at 24-26 Railway Parade Westmead NSW 2145					
Window Glazing	**Glazing Type**	**Frame Type**	**U value**	**SHGC Value**	**Description**
ATB-004-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Sliding & Fixed
ATB-003-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Awning Windows
Products to be used with matching U values SHGC values.(custom windows).The values calculated include frames.The values are approved AFRC values for Residential.Refer www.wers.net					
Skylights	**Glazing Type**	**Frame Type**	**U value**	**SHGC Value**	**Description**
No Skylights proposed					
External Wall Type	**Insulation(Added)**	**Colour**			**Description**
100mm Cast Concrete+PB lining	R2.5	Light			As per Plans & Elevations
Alucobond Panel +PB lining	R2.5	Light			As per Plans & Elevations
Internal Wall Type	**Insulation(Added)**	**Colour**			**Description**
200mm Concrete Block-core filled	None				All Party Walls
Plasterboard on studs	None				Throughout internal of all units
Floors	**Insulation**	**Floor Covering**			**Description**
Concrete Slab on Ground	R2.5	Paraquetry/Tiles			Balconies/air below-Level 9 units & unit 1205
Susp Concrete Floor	None	Paraquetry/Tiles			Neighbours below
Roof/Ceiling Type	**Insulation(Added)**	**Colour**			**Description**
Concrete Roof	R3.5 to ceilings with Roof above	Medium			Throughout Level 14
External Shading					**Description**
Balconies					As per Plans & Elevations
Eaves	**Width**	**Vertical Offset**			**Description**
Additional Items					
Roof ventilation:None				Ventillated Skylights:None	
Sealed Exhaust Fans:Yes(self closing)				Downlights: Yes (Default 4 per 10 sqm)	
Seals to Windows to be provided as per AS2047					
THE RATING IS DONE WITH DEFAULT NUMBER OF DOWNLIGHTS INSTALLED.IF SUCH PENETRATIONS ARE ALTERED AT THE TIME OF CONSTRUCTION RE-ASSESSMENT WILL BE REQUIRED FOR COMPENSATION OF LOSS OF INSULATION AS PER NCC(Volt)					

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6. All steelwork section sizes are indicative only. Refer to Structural Engineers drawings for serial sizes.

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Rev.	Date	Comment
A	28.05.2018	DA SUBMISSION

North

Project
24-26 Railway Parade Westmead 2145
NSW

Client
Drill Pty Ltd

Architect
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81 Alexander St, Crows Nest, NSW 2065
Tel. 02 9460 8002
www.sissonsarchitects.com

Scale
1 : 100 @A1 HALF SCALE @ A3

Drawing Title
LEVEL 08 - PLANT ROOM

DEVELOPMENT APPLICATION

16-021 DA121
Project No. Drawing No.

A
Rev.

TYPE A

Nathers (Thermal Comfort) notes

Proposed Residential Development at 24-26 Railway Parade Westmead NSW 2145

Window Glazing	Glazing Type	Frame Type	U value	SHGC Value	Description
ATB-004-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Sliding & Fixed
ATB-003-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Awning Windows

Products to be used with matching U values SHGC values.(custom windows).The values calculated include frames.The values are approved AFRC values for Residential.Refer www.wers.net

Skylights	Glazing Type	Frame Type	U value	SHGC Value	Description
No Skylights proposed					
External Wall Type	**Insulation(Added)**	**Colour**			**Description**
100mm Cast Concrete+PB lining	R2.5	Light			As per Plans & Elevations
Alucobond Panel +PB lining	R2.5	Light			As per Plans & Elevations
Internal Wall Type	**Insulation(Added)**	**Colour**			**Description**
200mm Concrete Block-core filled	None				All Party Walls
Plasterboard on studs	None				Throughout internal of all units
Floors	**Insulation**	**Floor Covering**			**Description**
Concrete Slab on Ground	R2.5	Paraquetry/Tiles			Balconies/air below-Level 9 units & unit 1205
Susp Concrete Floor	None	Paraquetry/Tiles			Neighbours below
Roof/Ceiling Type	**Insulation(Added)**	**Colour**			**Description**
Concrete Roof	R3.5 to ceilings with Roof above	Medium			Throughout Level 14
External Shading					**Description**
Balconies					As per Plans & Elevations
Eaves	**Width**	**Vertical Offset**			**Description**
Additional Items					
Roof ventillation:None				Ventillated Skylights:None	
Sealed Exhaust Fans:Yes(self closing)				Downlights: Yes (Default 4 per 10 sqm)	
Seals to Windows to be provided as per AS2047					

THE RATING IS DONE WITH DEFAULT NUMBER OF DOWNLIGHTS INSTALLED.IF SUCH PENETRATIONS ARE ALTERED AT THE TIME OF CONSTRUCTION RE-ASSESSMENT WILL BE REQUIRED FOR COMPENSATION OF LOSS OF INSULATION AS PER NCC(Vol1)

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Rev.	Date	Comment
A	28.05.2018	DA SUBMISSION

North

Project
24-26 Railway Parade Westmead 2145
NSW

Client
Drill Pty Ltd

Architect
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Studio 5, Level 2
81 Alexander St, Crows Nest, NSW 2065
Tel. 02 9460 8002
www.sissonsarchitects.com

Scale
1 : 100 @A1 HALF SCALE @ A3

Drawing Title
LEVEL 09-11 APARTMENT FLOOR TYPE A

DEVELOPMENT APPLICATION

16-021 DA122 — Project No. / Drawing No.

A — Rev.

TYPE B

Certificate Number: DJR738X9ET
Assessor Name: Suruchi Pathak
Accreditation number: 20594
Certificate date: 4 Dec 2017
Dwelling address: 24-26 Railway Parade, Westmead NSW 2145
www.nathers.gov.au

Nathers (Thermal Comfort) notes

Proposed Residential Development at 24-26 Railway Parade Westmead NSW 2145

Window Glazing	Glazing Type	Frame Type	U value	SHGC Value	Description
ATB-004-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Sliding & Fixed
ATB-003-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Awning Windows

Products to be used with matching U values SHGC values.(custom windows).The values calculated include frames.The values are approved AFRC values for Residential.Refer www.wers.net

Skylights	Glazing Type	Frame Type	U value	SHGC Value	Description
No Skylights proposed					
External Wall Type	**Insulation(Added)**	**Colour**			**Description**
100mm Cast Concrete+PB lining	R2.5	Light			As per Plans & Elevations
Alucobond Panel +PB lining	R2.5	Light			As per Plans & Elevations
Internal Wall Type	**Insulation(Added)**	**Colour**			**Description**
200mm Concrete Block-core filled	None				All Party Walls
Plasterboard on studs	None				Throughout internal of all units
Floors	**Insulation**	**Floor Covering**			**Description**
Concrete Slab on Ground	R2.5	Paraquetry/Tiles			Balconies/air below-Level 9 units & unit 1205
Susp Concrete Floor	None	Paraquetry/Tiles			Neighbours below
Roof/Ceiling Type	**Insulation(Added)**	**Colour**			**Description**
Concrete Roof	R3.5 to ceilings with Roof above	Medium			Throughout Level 14
External Shading					**Description**
Balconies					As per Plans & Elevations
Eaves	**Width**	**Vertical Offset**			**Description**
Additional Items					
Roof ventillation:None				Ventillated Skylights:None	
Sealed Exhaust Fans:Yes(self closing)				Downlights: Yes (Default 4 per 10 sqm)	
Seals to Windows to be provided as per AS2047					

THE RATING IS DONE WITH DEFAULT NUMBER OF DOWNLIGHTS INSTALLED.IF SUCH PENETRATIONS ARE ALTERED AT THE TIME OF CONSTRUCTION RE-ASSESSMENT WILL BE REQUIRED FOR COMPENSATION OF LOSS OF INSULATION AS PER NCC(Vol1)

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Rev.	Date	Comment
A	28.05.2018	DA SUBMISSION

North

Project
24-26 Railway Parade Westmead 2145
NSW

Client
Drill Pty Ltd

Architect
SISSONS ARCHITECTS
Studio 5, Level 2
81 Alexander St, Crows Nest, NSW 2065
Tel. 02 9460 8002
www.sissonsarchitects.com

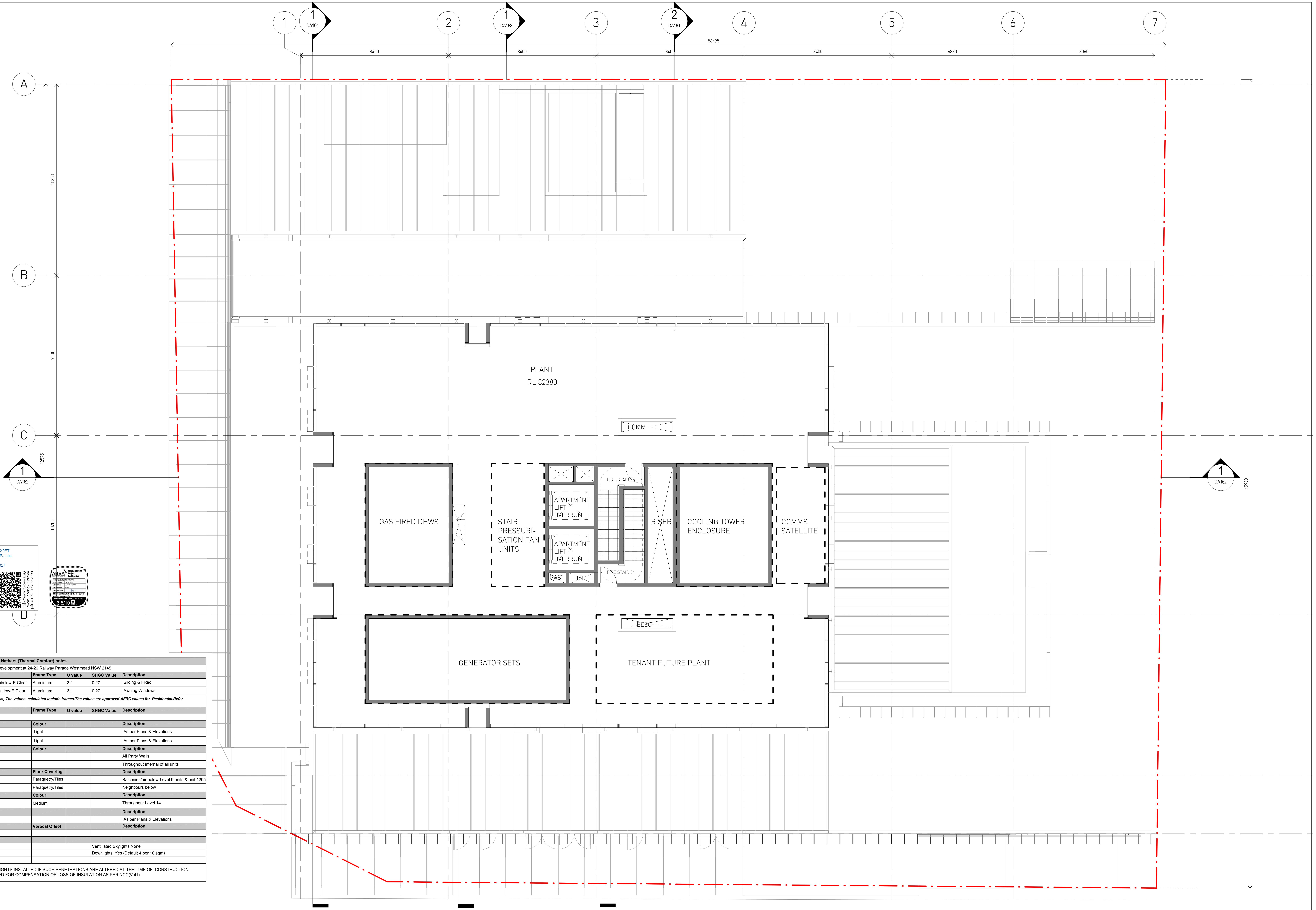
Scale
1 : 100 @A1 HALF SCALE @ A3

Drawing Title
LEVEL 12-14 APARTMENT FLOOR TYPE B

DEVELOPMENT APPLICATION

16-021 DA123
Project No. Drawing No.

A
Rev.



Certificate Number: DJR73BX9ET
Assessor Name: Suruchi Pathak
Accreditation number: 20594
Certificate date: 4 Dec 2017
Dwelling address: 24-26 Railway Parade, Westmead NSW 2145
www.nathers.gov.au

6.5 Average star rating
NATIONWIDE HOUSE ENERGY RATING SCHEME
www.nathers.gov.au

https://www.fr5.com.au/QRCodeLanding?PublicId=DJR73BX9ET&GrpCert=1

ABSA Australian Building Sustainability Association — Class 2 Building Project Certification
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Rated with Downlights: Partial
Averaged NatHERS Rating 75.4 MJ/m2 pa
6.5/10

Nathers (Thermal Comfort) notes

Proposed Residential Development at 24-26 Railway Parade Westmead NSW 2145

Window Glazing	Glazing Type	Frame Type	U value	SHGC Value	Description
ATB-004-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Sliding & Fixed
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Products to be used with matching U values SHGC values.(custom windows).The values calculated include frames.The values are approved AFRC values for Residential.Refer www.wers.net					
Skylights	**Glazing Type**	**Frame Type**	**U value**	**SHGC Value**	**Description**
No Skylights proposed					
External Wall Type	**Insulation(Added)**	**Colour**			**Description**
100mm Cast Concrete+PB lining	R2.5	Light			As per Plans & Elevations
Alucobond Panel +PB lining	R2.5	Light			As per Plans & Elevations
Internal Wall Type	**Insulation(Added)**	**Colour**			**Description**
200mm Concrete Block-core filled	None				All Party Walls
Plasterboard on studs	None				Throughout internal of all units
Floors	**Insulation**	**Floor Covering**			**Description**
Concrete Slab on Ground	R2.5	Paraquetry/Tiles			Balconies/air below-Level 9 units & unit 1205
Susp Concrete Floor	None	Paraquetry/Tiles			Neighbours below
Roof/Ceiling Type	**Insulation(Added)**	**Colour**			**Description**
Concrete Roof	R3.5 to ceilings with Roof above	Medium			Throughout Level 14
External Shading					**Description**
Balconies					As per Plans & Elevations
Eaves	**Width**	**Vertical Offset**			**Description**
Additional Items					
Roof ventillation:None				Ventillated Skylights:None	
Sealed Exhaust Fans:Yes(self closing)				Downlights: Yes (Default 4 per 10 sqm)	
Seals to Windows to be provided as per AS2047					
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Rev.	Date	Comment
A	28.05.2018	DA SUBMISSION

North

Project
24-26 Railway Parade Westmead 2145
NSW

Client
Drill Pty Ltd

Architect
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Tel. 02 9460 8002
www.sissonsarchitects.com

Scale
1 : 100 @A1 HALF SCALE @ A3

Drawing Title
ROOF PLAN

DEVELOPMENT APPLICATION

16-021 DA124 A

Project No. Drawing No. Rev.

EXTERNAL WALL SYSTEMS

EWS-001	EXTERNAL WALL SYSTEM 1 PANEL TYPES: GLA-001, PAN-001, PAN-002 FRAME: DARK GREY ALUMINIUM FRAME
EWS-002	EXTERNAL WALL SYSTEM 2 PANEL TYPES: LVR-003 FRAME: DARK GREY ALUMINIUM FRAME
EWS-003	EXTERNAL WALL SYSTEM 3 PANEL TYPES: GLA-001, LVR-004 FRAME: DARK GREY ALUMINIUM FRAME

EXTERNAL FINISHES LEGEND

BAL-001	GLASS BALUSTRADE GLASS: GLA-003
CAN-001	CLEAR GLASS CANOPY - ENTRY AREA GLASS: GLA-002 FRAME: STEEL FRAME COLOUR: DARK GREY
CAN-002	OPEN CANOPY - L3 PLANT ROOF FRAME: STEEL FRAME COLOUR: DARK GREY
CAN-003	CLEAR GLASS CANOPY - ABOVE ARCADE, HOTEL TERRACE GLASS: GLA-002 FRAME: STEEL FRAME COLOUR: DARK GREY
COL-001	CONCRETE COLUMN COLOUR: DARK GREY
COL-002	STEEL COLUMN COLOUR: DARK GREY
CON-001	CONCRETE WALL COLOUR: DARK GREY
CON-002	CONCRETE WALL CLADDING: SANDSTONE
CON-003	CONCRETE CANOPY COLOUR: DARK GREY
GLA-001	DOUBLE GLAZED HIGH PERFORMANCE LOW-E SOLAR NEUTRAL GREY TINTED GLASS
GLA-002	HEAT STRENGTHENED CUSTOM LAMINATE CLEAR GLASS WITH SERAPHIC FRIT
GLA-003	SINGLE GLAZED GREY TINTED GLASS
LVR-001	ALUMINIUM LOUVRES COLOUR: DARK GREY
LVR-002	ALUMINIUM LOUVRES COLOUR: LIGHT GREY
LVR-003	GLASS LOUVRES GLASS: GLA-003
LVR-004	FIXED VERTICAL ALUMINIUM LOUVRES COLOUR: BRONZE
PAN-001	SOLID PANEL COLOUR: NATURAL COPPER
PAN-002	SOLID PANEL COLOUR: WHITE
SCR-001	SCREEN GLASS: GLA-003 FRAME: STEEL FRAME COLOUR: DARK GREY
SOF-001	SOFFIT COLOUR: NATURAL COPPER
SPD-001	SPANDREL COLOUR: DARK GREY

Nathers (Thermal Comfort) notes

Proposed Residential Development at 24-26 Railway Parade Westmead NSW 2145

Window Glazing	Glazing Type	Frame Type	U value	SHGC Value	Description
ATB-004-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Sliding & Fixed
ATB-003-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Awning Windows
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Skylights	**Glazing Type**	**Frame Type**	**U value**	**SHGC Value**	**Description**
No Skylights proposed					
External Wall Type	**Insulation(Added)**	**Colour**			**Description**
100mm Cast Concrete+PB lining	R2.5	Light			As per Plans & Elevations
Alucobond Panel +PB lining	R2.5	Light			As per Plans & Elevations
Internal Wall Type	**Insulation(Added)**	**Colour**			**Description**
200mm Concrete Block-core filled	None				All Party Walls
Plasterboard on studs	None				Throughout internal of all units
Floors	**Insulation**	**Floor Covering**			**Description**
Concrete Slab on Ground	R2.5	Paraquetry/Tiles			Balconies/air below-Level 9 units & unit 1205
Susp Concrete Floor	None	Paraquetry/Tiles			Neighbours below
Roof/Ceiling Type	**Insulation(Added)**	**Colour**			**Description**
Concrete Roof	R3.5 to ceilings with Roof above	Medium			Throughout Level 14
External Shading					**Description**
Balconies					As per Plans & Elevations
Eaves	**Width**	**Vertical Offset**			**Description**
Additional Items					
Roof ventillation:None				Ventillated Skylights:None	
Sealed Exhaust Fans:Yes(self closing)				Downlights: Yes (Default 4 per 10 sqm)	
Seals to Windows to be provided as per AS2047					

THE RATING IS DONE WITH DEFAULT NUMBER OF DOWNLIGHTS INSTALLED.IF SUCH PENETRATIONS ARE ALTERED AT THE TIME OF CONSTRUCTION RE-ASSESSMENT WILL BE REQUIRED FOR COMPENSATION OF LOSS OF INSULATION AS PER NCC(Vol1)

General Notes

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6. All steelwork section sizes are indicative only. Refer to Structural Engineers drawings for serial sizes.

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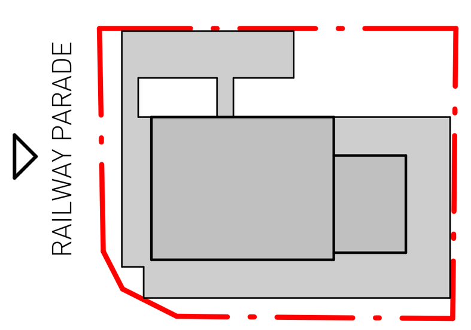

North

Project
24-26 Railway Parade Westmead 2145
NSW

Client
Drill Pty Ltd

Architect
SISSONS ARCHITECTS
Studio 5, Level 2
81 Alexander St, Crows Nest, NSW 2065
Tel. 02 9460 8002
www.sissonsarchitects.com

Scale
1 : 150 @A1 HALF SCALE @ A3

Drawing Title
RAILWAY PARADE ELEVATION (SOUTH)

DEVELOPMENT APPLICATION

16-021 DA151 A

Project No. Drawing No. Rev.

EXTERNAL WALL SYSTEMS

EWS-001 EXTERNAL WALL SYSTEM 1
PANEL TYPES: GLA-001, PAN-001, PAN-002
FRAME: DARK GREY ALUMINIUM FRAME

EWS-002 EXTERNAL WALL SYSTEM 2
PANEL TYPES: LVR-003
FRAME: DARK GREY ALUMINIUM FRAME

EWS-003 EXTERNAL WALL SYSTEM 3
PANEL TYPES: GLA-001, LVR-004
FRAME: DARK GREY ALUMINIUM FRAME

EXTERNAL FINISHES LEGEND

BAL-001 GLASS BALUSTRADE
GLASS: GLA-003

CAN-001 CLEAR GLASS CANOPY - ENTRY AREA
GLASS: GLA-002
FRAME: STEEL FRAME
COLOUR: DARK GREY

CAN-002 OPEN CANOPY - L3 PLANT ROOF
FRAME: STEEL FRAME
COLOUR: DARK GREY

CAN-003 CLEAR GLASS CANOPY - ABOVE ARCADE, HOTEL TERRACE
GLASS: GLA-002
FRAME: STEEL FRAME
COLOUR: DARK GREY

COL-001 CONCRETE COLUMN
COLOUR: DARK GREY

COL-002 STEEL COLUMN
COLOUR: DARK GREY

CON-001 CONCRETE WALL
COLOUR: DARK GREY

CON-002 CONCRETE WALL
CLADDING: SANDSTONE

CON-003 CONCRETE CANOPY
COLOUR: DARK GREY

GLA-001 DOUBLE GLAZED HIGH PERFORMANCE LOW-E SOLAR NEUTRAL GREY TINTED GLASS

GLA-002 HEAT STRENGTHENED CUSTOM LAMINATE CLEAR GLASS WITH SERAPHIC FRIT

GLA-003 SINGLE GLAZED GREY TINTED GLASS

LVR-001 ALUMINIUM LOUVRES
COLOUR: DARK GREY

LVR-002 ALUMINIUM LOUVRES
COLOUR: LIGHT GREY

LVR-003 GLASS LOUVRES
GLASS: GLA-003

LVR-004 FIXED VERTICAL ALUMINIUM LOUVRES
COLOUR: BRONZE

PAN-001 SOLID PANEL
COLOUR: NATURAL COPPER

PAN-002 SOLID PANEL
COLOUR: WHITE

SCR-001 SCREEN
GLASS: GLA-003
FRAME: STEEL FRAME
COLOUR: DARK GREY

SOF-001 SOFFIT
COLOUR: NATURAL COPPER

SPD-001 SPANDREL
COLOUR: DARK GREY

Nathers (Thermal Comfort) notes

Proposed Residential Development at 24-26 Railway Parade Westmead NSW 2145

Window Glazing	Glazing Type	Frame Type	U value	SHGC Value	Description
ATB-004-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Sliding & Fixed
ATB-003-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Awning Windows
Products to be used with matching U values SHGC values.(custom windows).The values calculated include frames.The values are approved AFRC values for Residential.Refer www.wers.net					
Skylights	**Glazing Type**	**Frame Type**	**U value**	**SHGC Value**	**Description**
No Skylights proposed					
External Wall Type	**Insulation(Added)**	**Colour**			**Description**
100mm Cast Concrete+PB lining	R2.5	Light			As per Plans & Elevations
Alucobond Panel +PB lining	R2.5	Light			As per Plans & Elevations
Internal Wall Type	**Insulation(Added)**	**Colour**			**Description**
200mm Concrete Block-core filled	None				All Party Walls
Plasterboard on studs	None				Throughout internal of all units
Floors	**Insulation**	**Floor Covering**			**Description**
Concrete Slab on Ground	R2.5	Paraquetry/Tiles			Balconies/air below-Level 9 units & unit 1205
Susp Concrete Floor	None	Paraquetry/Tiles			Neighbours below
Roof/Ceiling Type	**Insulation(Added)**	**Colour**			**Description**
Concrete Roof	R3.5 to ceilings with Roof above	Medium			Throughout Level 14
External Shading					**Description**
Balconies					As per Plans & Elevations
Eaves	**Width**	**Vertical Offset**			**Description**
Additional Items					
Roof ventillation:None			Ventillated Skylights:None		
Sealed Exhaust Fans:Yes(self closing)			Downlights: Yes (Default 4 per 10 sqm)		
Seals to Windows to be provided as per AS2047					

THE RATING IS DONE WITH DEFAULT NUMBER OF DOWNLIGHTS INSTALLED.IF SUCH PENETRATIONS ARE ALTERED AT THE TIME OF CONSTRUCTION RE-ASSESSMENT WILL BE REQUIRED FOR COMPENSATION OF LOSS OF INSULATION AS PER NCC(Vol1)

General Notes

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6. All steelwork section sizes are indicative only. Refer to Structural Engineers drawings for serial sizes.

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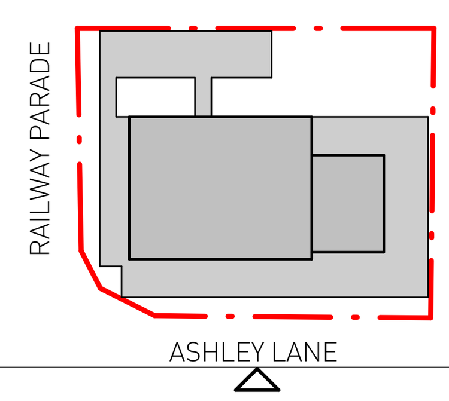

North

Project
24-26 Railway Parade Westmead 2145
NSW

Client
Drill Pty Ltd

Architect
SISSONS ARCHITECTS
Studio 5, Level 2
81 Alexander St, Crows Nest, NSW 2065
Tel. 02 9460 8002
www.sissonsarchitects.com

Scale
1 : 150 @A1 HALF SCALE @ A3

Drawing Title
ASHLEY LANE ELEVATION (EAST)

DEVELOPMENT APPLICATION

16-021 DA152 A

Project No. Drawing No. Rev.

EXTERNAL WALL SYSTEMS

EWS-001	EXTERNAL WALL SYSTEM 1 PANEL TYPES: GLA-001, PAN-001, PAN-002 FRAME: DARK GREY ALUMINIUM FRAME
EWS-002	EXTERNAL WALL SYSTEM 2 PANEL TYPES: LVR-003 FRAME: DARK GREY ALUMINIUM FRAME
EWS-003	EXTERNAL WALL SYSTEM 3 PANEL TYPES: GLA-001, LVR-004 FRAME: DARK GREY ALUMINIUM FRAME

EXTERNAL FINISHES LEGEND

BAL-001	GLASS BALUSTRADE GLASS: GLA-003
CAN-001	CLEAR GLASS CANOPY - ENTRY AREA GLASS: GLA-002 FRAME: STEEL FRAME COLOUR: DARK GREY
CAN-002	OPEN CANOPY - L3 PLANT ROOF FRAME: STEEL FRAME COLOUR: DARK GREY
CAN-003	CLEAR GLASS CANOPY - ABOVE ARCADE, HOTEL TERRACE GLASS: GLA-002 FRAME: STEEL FRAME COLOUR: DARK GREY
COL-001	CONCRETE COLUMN COLOUR: DARK GREY
COL-002	STEEL COLUMN COLOUR: DARK GREY
CON-001	CONCRETE WALL COLOUR: DARK GREY
CON-002	CONCRETE WALL CLADDING: SANDSTONE
CON-003	CONCRETE CANOPY COLOUR: DARK GREY
GLA-001	DOUBLE GLAZED HIGH PERFORMANCE LOW-E SOLAR NEUTRAL GREY TINTED GLASS
GLA-002	HEAT STRENGTHENED CUSTOM LAMINATE CLEAR GLASS WITH SERAPHIC FRIT
GLA-003	SINGLE GLAZED GREY TINTED GLASS
LVR-001	ALUMINIUM LOUVRES COLOUR: DARK GREY
LVR-002	ALUMINIUM LOUVRES COLOUR: LIGHT GREY
LVR-003	GLASS LOUVRES GLASS: GLA-003
LVR-004	FIXED VERTICAL ALUMINIUM LOUVRES COLOUR: BRONZE
PAN-001	SOLID PANEL COLOUR: NATURAL COPPER
PAN-002	SOLID PANEL COLOUR: WHITE
SCR-001	SCREEN GLASS: GLA-003 FRAME: STEEL FRAME COLOUR: DARK GREY
SOF-001	SOFFIT COLOUR: NATURAL COPPER
SPD-001	SPANDREL COLOUR: DARK GREY

Nathers (Thermal Comfort) notes					
Proposed Residential Development at 24-26 Railway Parade Westmead NSW 2145					
Window Glazing	**Glazing Type**	**Frame Type**	**U value**	**SHGC Value**	**Description**
ATB-004-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Sliding & Fixed
ATB-003-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Awning Windows
Products to be used with matching U values SHGC values.(custom windows).The values calculated include frames.The values are approved AFRC values for Residential.Refer www.wers.net					
Skylights	**Glazing Type**	**Frame Type**	**U value**	**SHGC Value**	**Description**
No Skylights proposed					
External Wall Type	**Insulation(Added)**	**Colour**			**Description**
100mm Cast Concrete+PB lining	R2.5	Light			As per Plans & Elevations
Alucobond Panel +PB lining	R2.5	Light			As per Plans & Elevations
Internal Wall Type	**Insulation(Added)**	**Colour**			**Description**
200mm Concrete Block-core filled	None				All Party Walls
Plasterboard on studs	None				Throughout internal of all units
Floors	**Insulation**	**Floor Covering**			**Description**
Concrete Slab on Ground	R2.5	Paraquetry/Tiles			Balconies/air below-Level 9 units & unit 1205
Susp Concrete Floor	None	Paraquetry/Tiles			Neighbours below
Roof/Ceiling Type	**Insulation(Added)**	**Colour**			**Description**
Concrete Roof	R3.5 to ceilings with Roof above	Medium			Throughout Level 14
External Shading					**Description**
Balconies					As per Plans & Elevations
Eaves	**Width**	**Vertical Offset**			**Description**
Additional Items					
Roof ventillation:None			Ventillated Skylights:None		
Sealed Exhaust Fans:Yes(self closing)			Downlights: Yes (Default 4 per 10 sqm)		
Seals to Windows to be provided as per AS2047					

THE RATING IS DONE WITH DEFAULT NUMBER OF DOWNLIGHTS INSTALLED.IF SUCH PENETRATIONS ARE ALTERED AT THE TIME OF CONSTRUCTION RE-ASSESSMENT WILL BE REQUIRED FOR COMPENSATION OF LOSS OF INSULATION AS PER NCC(Vol1)

6.5
Average star rating
NATIONWIDE HOUSE ENERGY RATING SCHEME
www.nathers.gov.au

Certificate Number: DJR73BX9ET
Assessor Name: Suruchi Pathak
Accreditation number: 20594
Certificate date: 4 Dec 2017
Dwelling address: 24-26 Railway Parade, Westmead NSW 2145
www.nathers.gov.au
https://www.fr5.com.au/QRCodeLanding?PublicId=DJR73BX9ET&GrpCert=1

ABSA Australian Building Sustainability Association — Class 2 Building Project Certification

Certification Number	1011667472
Certification Date	04/12/2017
Assessor Name	Suruchi Pathak
Assessor Number	20594
Assessor Signature	

Averaged Simulated Energy: HEATING: 35.4 MJ/m2 pa
Averaged Simulated Energy: COOLING: 40.0 MJ/m2 pa
Rated with Downlights: Partial
Averaged NatHERS Rating 75.4 MJ/m2 pa
6.5/10

General Notes

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6. All steelwork section sizes are indicative only. Refer to Structural Engineers drawings for serial sizes.

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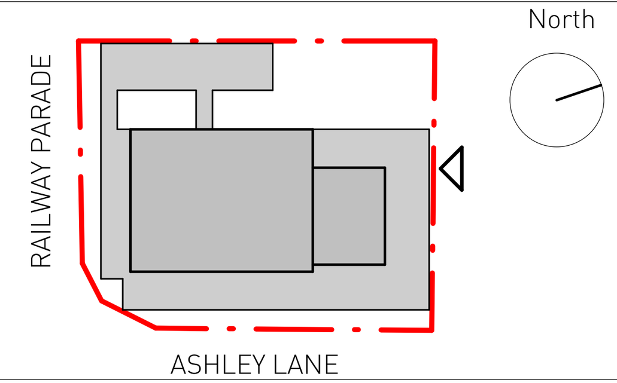


Project: 24-26 Railway Parade Westmead 2145 NSW

Architect: SISSONS ARCHITECTS
Studio 5, Level 2
81 Alexander St, Crows Nest, NSW 2065
Tel. 02 9460 8002
www.sissonsarchitects.com

Client: Drill Pty Ltd

Scale: 1 : 150 @A1 HALF SCALE @ A3

Drawing Title: NORTH ELEVATION

DEVELOPMENT APPLICATION

Project No. 16-021 Drawing No. DA153 Rev. A

EXTERNAL WALL SYSTEMS

EWS-001 EXTERNAL WALL SYSTEM 1
PANEL TYPES: GLA-001, PAN-001, PAN-002
FRAME: DARK GREY ALUMINIUM FRAME

EWS-002 EXTERNAL WALL SYSTEM 2
PANEL TYPES: LVR-003
FRAME: DARK GREY ALUMINIUM FRAME

EWS-003 EXTERNAL WALL SYSTEM 3
PANEL TYPES: GLA-001, LVR-004
FRAME: DARK GREY ALUMINIUM FRAME

EXTERNAL FINISHES LEGEND

BAL-001 GLASS BALUSTRADE
GLASS: GLA-003

CAN-001 CLEAR GLASS CANOPY - ENTRY AREA
GLASS: GLA-002
FRAME: STEEL FRAME
COLOUR: DARK GREY

CAN-002 OPEN CANOPY - L3 PLANT ROOF
FRAME: STEEL FRAME
COLOUR: DARK GREY

CAN-003 CLEAR GLASS CANOPY - ABOVE ARCADE, HOTEL TERRACE
GLASS: GLA-002
FRAME: STEEL FRAME
COLOUR: DARK GREY

COL-001 CONCRETE COLUMN
COLOUR: DARK GREY

COL-002 STEEL COLUMN
COLOUR: DARK GREY

CON-001 CONCRETE WALL
COLOUR: DARK GREY

CON-002 CONCRETE WALL
CLADDING: SANDSTONE

CON-003 CONCRETE CANOPY
COLOUR: DARK GREY

GLA-001 DOUBLE GLAZED HIGH PERFORMANCE LOW-E SOLAR NEUTRAL GREY TINTED GLASS

GLA-002 HEAT STRENGTHENED CUSTOM LAMINATE CLEAR GLASS WITH SERAPHIC FRIT

GLA-003 SINGLE GLAZED GREY TINTED GLASS

LVR-001 ALUMINIUM LOUVRES
COLOUR: DARK GREY

LVR-002 ALUMINIUM LOUVRES
COLOUR: LIGHT GREY

LVR-003 GLASS LOUVRES
GLASS: GLA-003

LVR-004 FIXED VERTICAL ALUMINIUM LOUVRES
COLOUR: BRONZE

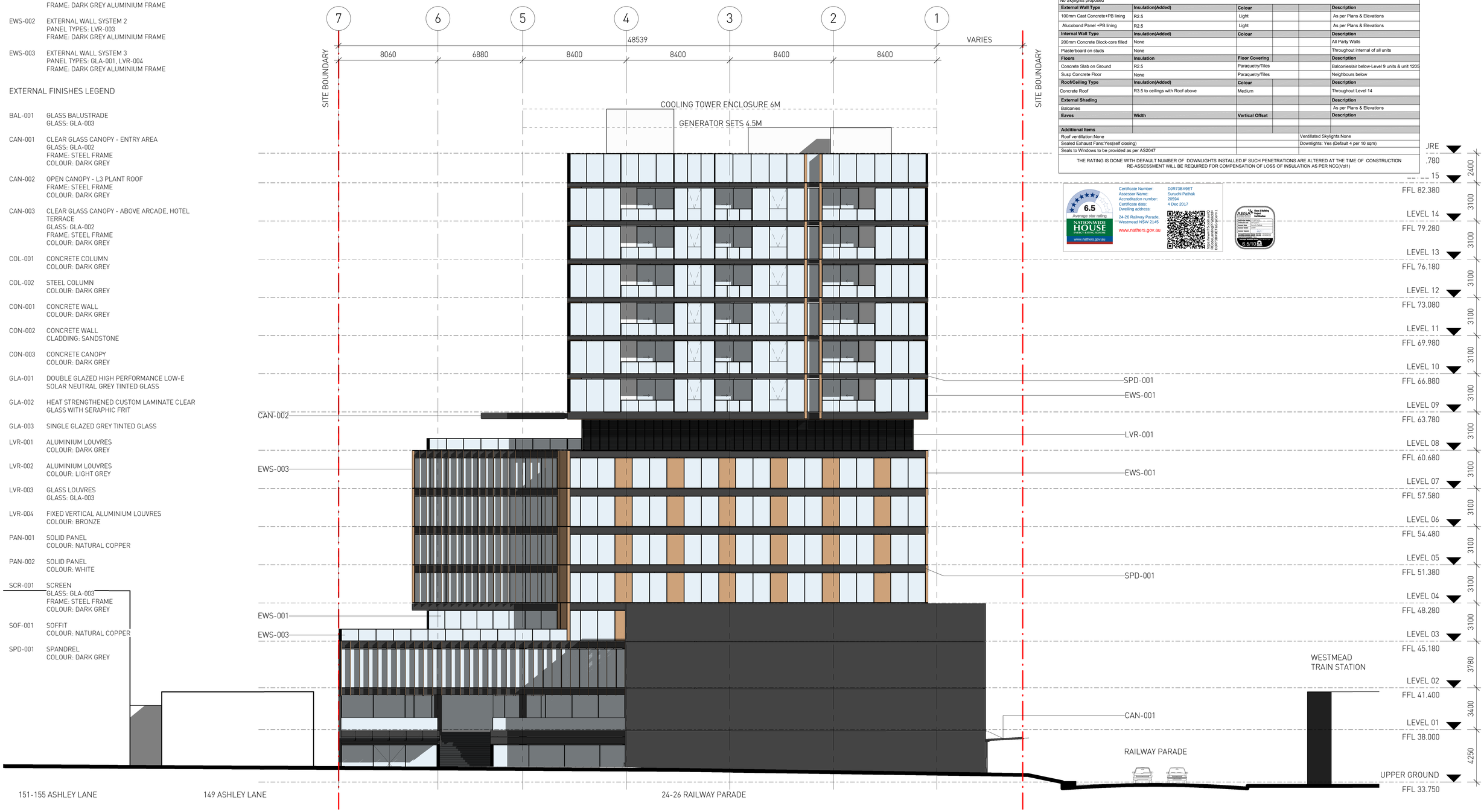
PAN-001 SOLID PANEL
COLOUR: NATURAL COPPER

PAN-002 SOLID PANEL
COLOUR: WHITE

SCR-001 SCREEN
GLASS: GLA-003
FRAME: STEEL FRAME
COLOUR: DARK GREY

SOF-001 SOFFIT
COLOUR: NATURAL COPPER

SPD-001 SPANDREL
COLOUR: DARK GREY



Nathers (Thermal Comfort) notes					
Proposed Residential Development at 24-26 Railway Parade Westmead NSW 2145					
Window Glazing	**Glazing Type**	**Frame Type**	**U value**	**SHGC Value**	**Description**
ATB-004-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Sliding & Fixed
ATB-003-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Awning Windows
Products to be used with matching U values SHGC values.(custom windows).The values calculated include frames.The values are approved AFRC values for Residential.Refer www.wers.net					
Skylights	**Glazing Type**	**Frame Type**	**U value**	**SHGC Value**	**Description**
No Skylights proposed					
External Wall Type	**Insulation(Added)**	**Colour**			**Description**
100mm Cast Concrete+PB lining	R2.5	Light			As per Plans & Elevations
Alucobond Panel +PB lining	R2.5	Light			As per Plans & Elevations
Internal Wall Type	**Insulation(Added)**	**Colour**			**Description**
200mm Concrete Block-core filled	None				All Party Walls
Plasterboard on studs	None				Throughout internal of all units
Floors	**Insulation**	**Floor Covering**			**Description**
Concrete Slab on Ground	R2.5	Paraquetry/Tiles			Balconies/air below-Level 9 units & unit 1205
Susp Concrete Floor	None	Paraquetry/Tiles			Neighbours below
Roof/Ceiling Type	**Insulation(Added)**	**Colour**			**Description**
Concrete Roof	R3.5 to ceilings with Roof above	Medium			Throughout Level 14
External Shading					**Description**
Balconies					As per Plans & Elevations
Eaves	**Width**	**Vertical Offset**			**Description**
Additional Items					
Roof ventillation:None				Ventillated Skylights:None	
Sealed Exhaust Fans:Yes(self closing)				Downlights: Yes (Default 4 per 10 sqm)	
Seals to Windows to be provided as per AS2047					

THE RATING IS DONE WITH DEFAULT NUMBER OF DOWNLIGHTS INSTALLED.IF SUCH PENETRATIONS ARE ALTERED AT THE TIME OF CONSTRUCTION RE-ASSESSMENT WILL BE REQUIRED FOR COMPENSATION OF LOSS OF INSULATION AS PER NCC(Vol1)

6.5 Average star rating
NATIONWIDE HOUSE ENERGY RATING SCHEME
www.nathers.gov.au

Certificate Number: DJR738X9ET
Assessor Name: Suruchi Pathak
Accreditation number: 20594
Certificate date: 4 Dec 2017
Dwelling address: 24-26 Railway Parade, Westmead NSW 2145
www.nathers.gov.au

ABSA Class 2 Building Project Certificate
6.5/10

General Notes

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6. All steelwork section sizes are indicative only. Refer to Structural Engineers drawings for serial sizes.

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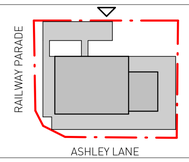

North

Project
24-26 Railway Parade Westmead 2145
NSW

Client
Drill Pty Ltd

Architect
SISSONS ARCHITECTS
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81 Alexander St, Crows Nest, NSW 2065
Tel. 02 9460 8002
www.sissonsarchitects.com

Scale
1 : 150 @A1 HALF SCALE @ A3

Drawing Title
WEST ELEVATION
DEVELOPMENT APPLICATION

16-021 DA154 A
Project No. Drawing No. Rev.

EXTERNAL WALL SYSTEMS

EWS-001 EXTERNAL WALL SYSTEM 1
PANEL TYPES: GLA-001, PAN-001, PAN-002
FRAME: DARK GREY ALUMINIUM FRAME

EWS-002 EXTERNAL WALL SYSTEM 2
PANEL TYPES: LVR-003
FRAME: DARK GREY ALUMINIUM FRAME

EWS-003 EXTERNAL WALL SYSTEM 3
PANEL TYPES: GLA-001, LVR-004
FRAME: DARK GREY ALUMINIUM FRAME

EXTERNAL FINISHES LEGEND

BAL-001 GLASS BALUSTRADE
GLASS: GLA-003

CAN-001 CLEAR GLASS CANOPY - ENTRY AREA
GLASS: GLA-002
FRAME: STEEL FRAME
COLOUR: DARK GREY

CAN-002 OPEN CANOPY - L3 PLANT ROOF
FRAME: STEEL FRAME
COLOUR: DARK GREY

CAN-003 CLEAR GLASS CANOPY - ABOVE ARCADE, HOTEL TERRACE
GLASS: GLA-002
FRAME: STEEL FRAME
COLOUR: DARK GREY

COL-001 CONCRETE COLUMN
COLOUR: DARK GREY

COL-002 STEEL COLUMN
COLOUR: DARK GREY

CON-001 CONCRETE WALL
COLOUR: DARK GREY

CON-002 CONCRETE WALL
CLADDING: SANDSTONE

CON-003 CONCRETE CANOPY
COLOUR: DARK GREY

GLA-001 DOUBLE GLAZED HIGH PERFORMANCE LOW-E SOLAR NEUTRAL GREY TINTED GLASS

GLA-002 HEAT STRENGTHENED CUSTOM LAMINATE CLEAR GLASS WITH SERAPHIC FRIT

GLA-003 SINGLE GLAZED GREY TINTED GLASS

LVR-001 ALUMINIUM LOUVRES
COLOUR: DARK GREY

LVR-002 ALUMINIUM LOUVRES
COLOUR: LIGHT GREY

LVR-003 GLASS LOUVRES
GLASS: GLA-003

LVR-004 FIXED VERTICAL ALUMINIUM LOUVRES
COLOUR: BRONZE

PAN-001 SOLID PANEL
COLOUR: NATURAL COPPER

PAN-002 SOLID PANEL
COLOUR: WHITE

SCR-001 SCREEN
GLASS: GLA-003
FRAME: STEEL FRAME
COLOUR: DARK GREY

SOF-001 SOFFIT
COLOUR: NATURAL COPPER

SPD-001 SPANDREL
COLOUR: DARK GREY

Nathers (Thermal Comfort) notes

Proposed Residential Development at 24-26 Railway Parade Westmead NSW 2145

Window Glazing	Glazing Type	Frame Type	U value	SHGC Value	Description
ATB-004-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Sliding & Fixed
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Plasterboard on studs	None				Throughout internal of all units
Floors	**Insulation**	**Floor Covering**			**Description**
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Susp Concrete Floor	None	Paraquetry/Tiles			Neighbours below
Roof/Ceiling Type	**Insulation(Added)**	**Colour**			**Description**
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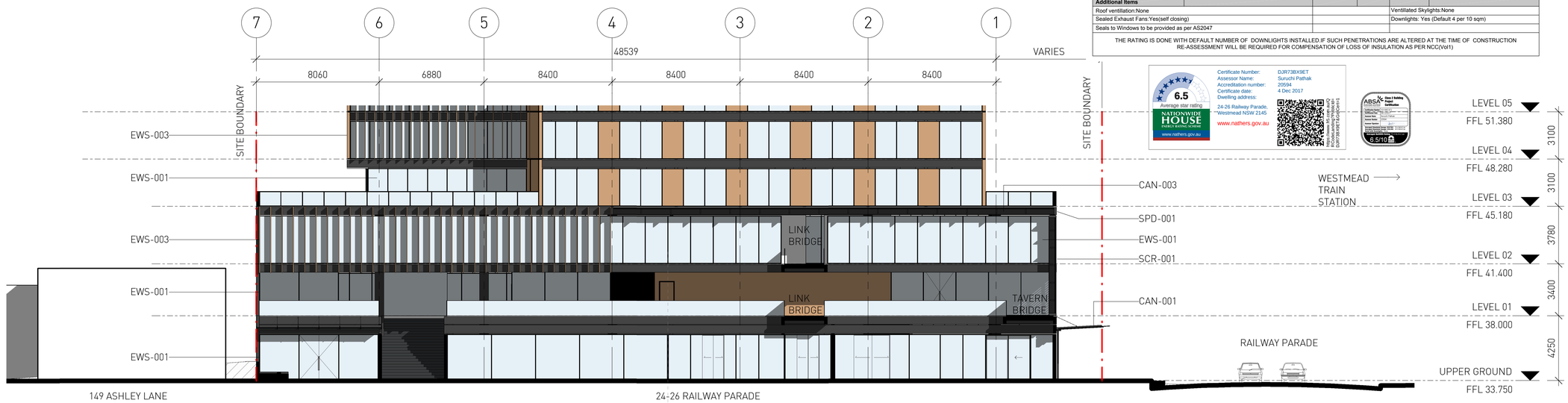
External Shading					**Description**
Balconies					As per Plans & Elevations
Eaves	**Width**	**Vertical Offset**			**Description**
Additional Items					
Roof ventillation:None				Ventillated Skylights:None	
Sealed Exhaust Fans:Yes(self closing)				Downlights: Yes (Default 4 per 10 sqm)	
Seals to Windows to be provided as per AS2047					

THE RATING IS DONE WITH DEFAULT NUMBER OF DOWNLIGHTS INSTALLED.IF SUCH PENETRATIONS ARE ALTERED AT THE TIME OF CONSTRUCTION RE-ASSESSMENT WILL BE REQUIRED FOR COMPENSATION OF LOSS OF INSULATION AS PER NCC(Vol1)



General Notes

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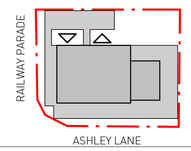
Rev.	Date	Comment
A	28.05.2018	DA SUBMISSION



North

Project
24-26 Railway Parade Westmead 2145
NSW

Client
Drill Pty Ltd

Architect
SISSONS ARCHITECTS
Studio 5, Level 2
81 Alexander St, Crows Nest, NSW 2065
Tel. 02 9460 8002
www.sissonsarchitects.com

Drawing Title
ARCADE ELEVATIONS

DEVELOPMENT APPLICATION

Scale
1 : 150 @A1 HALF SCALE @ A3

16-021 DA155 A
Project No. Drawing No. Rev.

Nathers (Thermal Comfort) notes					
Proposed Residential Development at 24-26 Railway Parade Westmead NSW 2145					
Window Glazing	**Glazing Type**	**Frame Type**	**U value**	**SHGC Value**	**Description**
ATB-004-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Sliding & Fixed
ATB-003-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Awning Windows
Products to be used with matching U values SHGC values.(custom windows).The values calculated include frames.The values are approved AFRC values for Residential.Refer www.wers.net					
Skylights	**Glazing Type**	**Frame Type**	**U value**	**SHGC Value**	**Description**
No Skylights proposed					
External Wall Type	**Insulation(Added)**	**Colour**			**Description**
100mm Cast Concrete+PB lining	R2.5	Light			As per Plans & Elevations
Alucobond Panel +PB lining	R2.5	Light			As per Plans & Elevations
Internal Wall Type	**Insulation(Added)**	**Colour**			**Description**
200mm Concrete Block-core filled	None				All Party Walls
Plasterboard on studs	None				Throughout internal of all units
Floors	**Insulation**	**Floor Covering**			**Description**
Concrete Slab on Ground	R2.5	Paraquetry/Tiles			Balconies/air below-Level 9 units & unit 1205
Susp Concrete Floor	None	Paraquetry/Tiles			Neighbours below
Roof/Ceiling Type	**Insulation(Added)**	**Colour**			**Description**
Concrete Roof	R3.5 to ceilings with Roof above	Medium			Throughout Level 14
External Shading					**Description**
Balconies					As per Plans & Elevations
Eaves	**Width**	**Vertical Offset**			**Description**
Additional Items					
Roof ventillation:None				Ventillated Skylights:None	
Sealed Exhaust Fans:Yes(self closing)				Downlights: Yes (Default 4 per 10 sqm)	
Seals to Windows to be provided as per AS2047					
THE RATING IS DONE WITH DEFAULT NUMBER OF DOWNLIGHTS INSTALLED.IF SUCH PENETRATIONS ARE ALTERED AT THE TIME OF CONSTRUCTION RE-ASSESSMENT WILL BE REQUIRED FOR COMPENSATION OF LOSS OF INSULATION AS PER NCC(Volt)					

6.5 Average star rating
NATIONWIDE HOUSE ENERGY RATING SCHEME
www.nathers.gov.au

Certificate Number: DJR73BX9ET
Assessor Name: Suruchi Pathak
Accreditation number: 20594
Certificate date: 4 Dec 2017
Dwelling address: 24-26 Railway Parade, Westmead NSW 2145
www.nathers.gov.au

ABSA Star 2 Building Panel Certificate
6.5/10

General Notes

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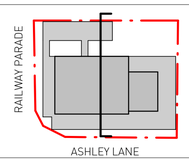

North

Project
24-26 Railway Parade Westmead 2145
NSW

Client
Drill Pty Ltd

Architect
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Studio 5, Level 2
81 Alexander St, Crows Nest, NSW 2065
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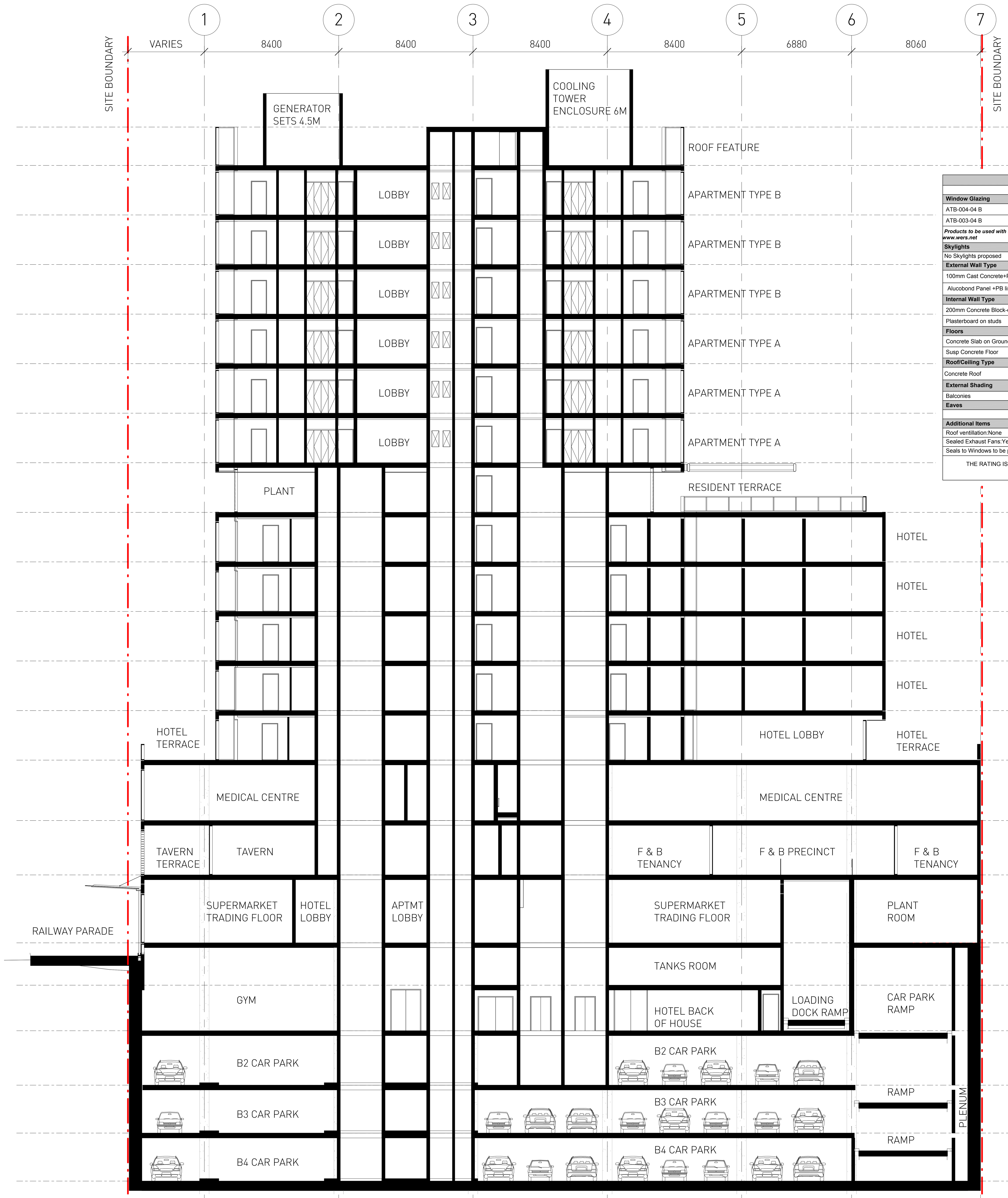
www.sissonsarchitects.com

Scale
1 : 150 @A1 HALF SCALE @ A3

Drawing Title
SECTION 1

DEVELOPMENT APPLICATION

16-021 DA161 A
Project No. Drawing No. Rev.



Certificate Number: DJR73BX9ET
Assessor Name: Suruchi Pathak
Accreditation number: 20594
Certificate date: 4 Dec 2017
Dwelling address:
24-26 Railway Parade, Westmead NSW 2145
www.nathers.gov.au

https://www.fr5.com.au/QRCodeLanding?PublicId=DJR73BX9ET&GrpCert=1

ABSA Class 2 Building Project Certification

Certification Number	1011667472
Certification Date	04/12/2017
Assessor Name	Suruchi Pathak
Assessor Number	20594
Assessor Signature	

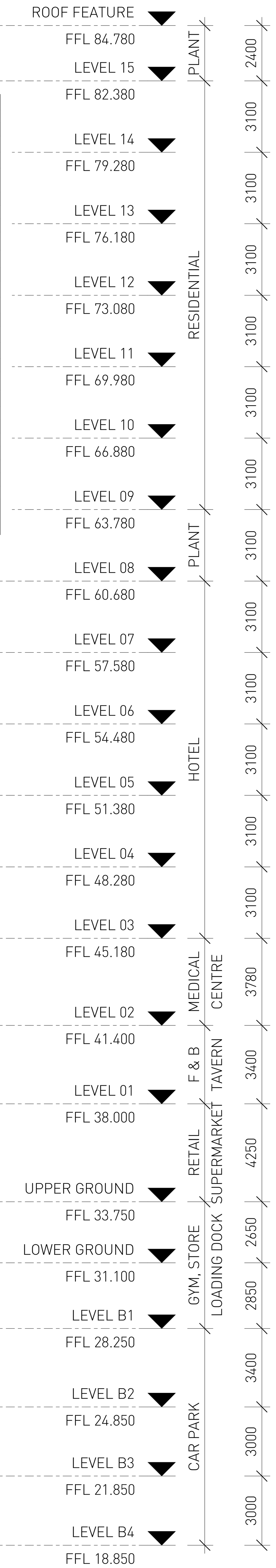
Averaged Simulated Energy: HEATING: 35.4 MJ/m2 pa
Averaged Simulated Energy: COOLING: 40.0 MJ/m2 pa
Rated with Downlights: Partial
Averaged NatHERS Rating 75.4 MJ/m2 pa
6.5/10

Nathers (Thermal Comfort) notes

Proposed Residential Development at 24-26 Railway Parade Westmead NSW 2145

Window Glazing	Glazing Type	Frame Type	U value	SHGC Value	Description
ATB-004-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Sliding & Fixed
ATB-003-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Awning Windows
Products to be used with matching U values SHGC values.(custom windows).The values calculated include frames.The values are approved AFRC values for Residential.Refer www.wers.net					
Skylights	**Glazing Type**	**Frame Type**	**U value**	**SHGC Value**	**Description**
No Skylights proposed					
External Wall Type	**Insulation(Added)**	**Colour**			**Description**
100mm Cast Concrete+PB lining	R2.5	Light			As per Plans & Elevations
Alucobond Panel +PB lining	R2.5	Light			As per Plans & Elevations
Internal Wall Type	**Insulation(Added)**	**Colour**			**Description**
200mm Concrete Block-core filled	None				All Party Walls
Plasterboard on studs	None				Throughout internal of all units
Floors	**Insulation**	**Floor Covering**			**Description**
Concrete Slab on Ground	R2.5	Paraquetry/Tiles			Balconies/air below-Level 9 units & unit 1205
Susp Concrete Floor	None	Paraquetry/Tiles			Neighbours below
Roof/Ceiling Type	**Insulation(Added)**	**Colour**			**Description**
Concrete Roof	R3.5 to ceilings with Roof above	Medium			Throughout Level 14
External Shading					**Description**
Balconies					As per Plans & Elevations
Eaves	**Width**	**Vertical Offset**			**Description**
Additional Items					
Roof ventillation:None				Ventillated Skylights:None	
Sealed Exhaust Fans:Yes(self closing)				Downlights: Yes (Default 4 per 10 sqm)	
Seals to Windows to be provided as per AS2047					

THE RATING IS DONE WITH DEFAULT NUMBER OF DOWNLIGHTS INSTALLED.IF SUCH PENETRATIONS ARE ALTERED AT THE TIME OF CONSTRUCTION RE-ASSESSMENT WILL BE REQUIRED FOR COMPENSATION OF LOSS OF INSULATION AS PER NCC(Vol1)



General Notes

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6. All steelwork section sizes are indicative only. Refer to Structural Engineers drawings for serial sizes.

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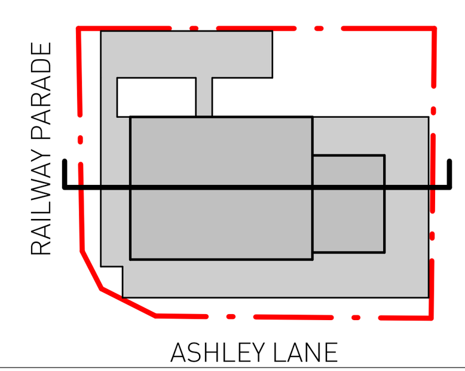

North

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24-26 Railway Parade Westmead 2145
NSW

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Tel. 02 9460 8002
www.sissonsarchitects.com

Scale
1 : 150 @A1 HALF SCALE @ A3

Drawing Title
SECTION 2

DEVELOPMENT APPLICATION

16-021 DA162 A

Project No. Drawing No. Rev.

Nathers (Thermal Comfort) notes					
Proposed Residential Development at 24-26 Railway Parade Westmead NSW 2145					
Window Glazing	**Glazing Type**	**Frame Type**	**U value**	**SHGC Value**	**Description**
ATB-004-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Sliding & Fixed
ATB-003-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Awning Windows
Products to be used with matching U values SHGC values.(custom windows).The values calculated include frames.The values are approved AFRC values for Residential.Refer www.wers.net					
Skylights	**Glazing Type**	**Frame Type**	**U value**	**SHGC Value**	**Description**
No Skylights proposed					
External Wall Type	**Insulation(Added)**	**Colour**			**Description**
100mm Cast Concrete+PB lining	R2.5	Light			As per Plans & Elevations
Alucobond Panel +PB lining	R2.5	Light			As per Plans & Elevations
Internal Wall Type	**Insulation(Added)**	**Colour**			**Description**
200mm Concrete Block-core filled	None				All Party Walls
Plasterboard on studs	None				Throughout internal of all units
Floors	**Insulation**	**Floor Covering**			**Description**
Concrete Slab on Ground	R2.5	Paraquetry/Tiles			Balconies/air below-Level 9 units & unit 1205
Susp Concrete Floor	None	Paraquetry/Tiles			Neighbours below
Roof/Ceiling Type	**Insulation(Added)**	**Colour**			**Description**
Concrete Roof	R3.5 to ceilings with Roof above	Medium			Throughout Level 14
External Shading					**Description**
Balconies					As per Plans & Elevations
Eaves	**Width**	**Vertical Offset**			**Description**
Additional Items					
Roof ventillation:None				Ventillated Skylights:None	
Sealed Exhaust Fans:Yes(self closing)				Downlights: Yes (Default 4 per 10 sqm)	
Seals to Windows to be provided as per AS2047					
THE RATING IS DONE WITH DEFAULT NUMBER OF DOWNLIGHTS INSTALLED.IF SUCH PENETRATIONS ARE ALTERED AT THE TIME OF CONSTRUCTION RE-ASSESSMENT WILL BE REQUIRED FOR COMPENSATION OF LOSS OF INSULATION AS PER NCC(Vol1)					

6.5
Average star rating
NATIONWIDE HOUSE ENERGY RATING SCHEME
www.nathers.gov.au

Certificate Number: DJR73BX9ET
Assessor Name: Suruchi Pathak
Accreditation number: 20594
Certificate date: 4 Dec 2017
Dwelling address: 24-26 Railway Parade, Westmead NSW 2145
www.nathers.gov.au

ABSA Class 2 Building Project Certification
6.5/10

General Notes

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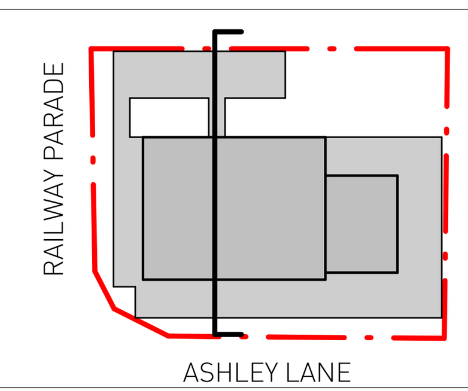

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Scale
1 : 150 @A1 HALF SCALE @ A3

Drawing Title
SECTION 3

DEVELOPMENT APPLICATION

16-021 DA163 A
Project No. Drawing No. Rev.

Nathers (Thermal Comfort) notes					
Proposed Residential Development at 24-26 Railway Parade Westmead NSW 2145					
Window Glazing	**Glazing Type**	**Frame Type**	**U value**	**SHGC Value**	**Description**
ATB-004-04 B	Double Glazed Air Fill Low Solar Gain low-E Clear	Aluminium	3.1	0.27	Sliding & Fixed
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Skylights	**Glazing Type**	**Frame Type**	**U value**	**SHGC Value**	**Description**
No Skylights proposed					
External Wall Type	**Insulation(Added)**	**Colour**			**Description**
100mm Cast Concrete+PB lining	R2.5	Light			As per Plans & Elevations
Alucobond Panel +PB lining	R2.5	Light			As per Plans & Elevations
Internal Wall Type	**Insulation(Added)**	**Colour**			**Description**
200mm Concrete Block-core filled	None				All Party Walls
Plasterboard on studs	None				Throughout internal of all units
Floors	**Insulation**	**Floor Covering**			**Description**
Concrete Slab on Ground	R2.5	Paraquetry/Tiles			Balconies/air below-Level 9 units & unit 1205
Susp Concrete Floor	None	Paraquetry/Tiles			Neighbours below
Roof/Ceiling Type	**Insulation(Added)**	**Colour**			**Description**
Concrete Roof	R3.5 to ceilings with Roof above	Medium			Throughout Level 14
External Shading					**Description**
Balconies					As per Plans & Elevations
Eaves	**Width**	**Vertical Offset**			**Description**
Additional Items					
Roof ventillation:None				Ventillated Skylights:None	
Sealed Exhaust Fans:Yes(self closing)				Downlights: Yes (Default 4 per 10 sqm)	
Seals to Windows to be provided as per AS2047					
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6.5 Average star rating
NATIONWIDE HOUSE ENERGY RATING SCHEME
www.nathers.gov.au

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Assessor Name: Suruchi Pathak
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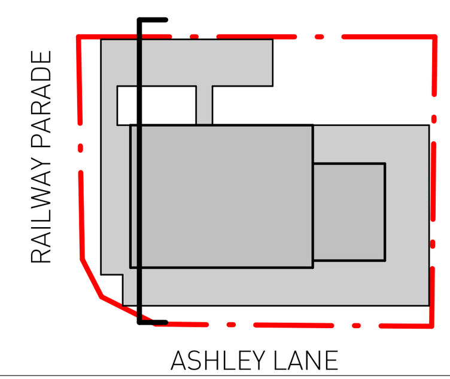

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Tel. 02 9460 8002
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Scale
1 : 150 @A1 HALF SCALE @ A3

Drawing Title
SECTION 4

DEVELOPMENT APPLICATION

16-021 DA164 A
Project No. Drawing No. Rev.