



JOHN ARMSBY

Thermal Performance Assessor

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17th January 2013

PROJECT

PROPOSED MIXED USE DEVELOPMENT

PORTSIDE WHARF BUILDING 20, PORTSIDE WHARF
HAMILTON, QLD 4007

CLIENT

BROOKFIELD RESIDENTIAL PROPERTIES

LEVEL 1, FLARE BUILDING, 39 HERCULES ST
HAMILTON, QLD 4007

SECTION J RESIDENTIAL

ENERGY COMPLIANCE REPORT FOR DEVELOPMENT APPLICATION

**RESPONSE TO INFORMATION REQUEST FROM UDA DEVELOPMENT
APPLICATION - DEV2012/399 DATED 19 DEC 2012**

RATER: JOHN ARMSBY

REG: VIC/BDAV/12/0518

RATING DATE: 17/01/2013

FINAL REPORT

REV -

Please refer to the attached summary of projected verification of building performance using FirstRate5 to analyse a large range of the overall unit types, including screen captures and report of the lowest performing unit.

Yours faithfully,

John Armsby

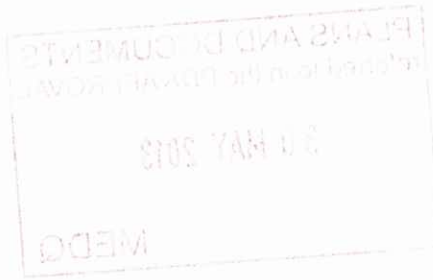
Architect/Energy Consultant

Thermal Performance Assessor - VIC/BDAV/12/0518

Member BDAV - 3074

Architect - ARBV 17198

- Tas 527



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FINAL REPORT

PORTSIDE WHARF BUILDING 20, PORTSIDE WHARF, HAMILTON

SUMMARY

The advice from the building surveyor is that the project is being assessed under BCA 2005.

This requires that the residential units achieve a 3 star minimum with a 3.5 star average rating.

To achieve this, our findings indicate that a supertoned tinted glass type will be acceptable throughout from an energy rating perspective. No double glazing appears necessary. We have used generic supertoned units.

UNITS

A large cross section of units has been rated in FirstRate5 (version 5.1.7). These units achieved a minimum star rating of 3.0 stars with an average of at least 3.5 stars as required by the BCA Building Code of Australia (QLD). We believe the average rating will be in excess of 4.5 stars.

UNIT CONSTRUCTION

Wall Construction

- External – Compressed Cement Sheet panels with added insulation value of R1.0 minimum.
- External Spandrel - added insulation value of R1.0 minimum.
- Internal Party Walls - added insulation value of R1.0 minimum (required for acoustic separation).

Ceilings

- Between Floors - Plasterboard ceiling to lightweight bondek slab with no added insulation (excluding Unit 21 detailed below).
- At Roof level – Metal roof decking with added insulation value of R3.0 minimum in the ceiling.
- Unit 21 requires added insulation value of R2.0 minimum to the ceiling below the bondek slab (plant area above) and added insulation value of R3.0 minimum in the ceiling (below the metal roof decking) where external from the Plant above.

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Floors

- All Floors - Lightweight bondek slab with no added insulation. Carpet throughout excluding all wet areas which are tiled.

Windows

Generic Aluminium Improved glazing suites with single glazed supertoned glass was used for the rating and the glazing must perform at this standard or above.

A number of glass types were trialled and will work but would need to be tested and separate advice issued if required. A generic system was used for the preliminary rating in place of a G. James or similar suite which, if selected, would likely give superior thermal performance. Use of generic suite offers a greater flexibility in glass and framing suite choices at a later date. The glazing used has the follow thermal properties:-

Generic 07 - (GGG-05-030a)

Glass - U-value: 5.85 Shading Coeff: 0.67 Solar Heat Gain Factor: 0.58
Frame - U-value: 9.3 Vision Area: 0.84
Total Glazing System - U-value: 6.29 Solar Heat Gain Factor: 0.52

The best performing unit and the worst performing unit (unit 10 and unit 21 respectively) were also rated using Generic 06 – Toned glass and G. James 6mm Azuria glass. The difference in performance between the 3 glazing units was negligible.

Please refer to the attached summary of projected verification of building performance, using FirstRate5 to analyse a large range of the overall unit types.

Yours faithfully,

John Armsby
Architect/Energy Consultant
Thermal Performance Assessor - VIC/BDAV/12/0518
Member BDAV - 3074
Architect - ARBV 17198
- Tas 527

FINAL REPORT

THERMAL PERFORMANCE ASSESSMENT

REV -

ENERGY RATING PREPARED BY JOHN ARMSBY, THERMAL PERFORMANCE ASSESSOR - VIC/BDV/12/0518

PORTSIDE WHARF BUILDING 20, PORTSIDE WHARF, HAMILTON

CLIENT - BROOKFIELD RESIDENTIAL PROPERTIES

ARCHITECT - TVS ARCHITECTURE

17-Jan-13

LEVEL	UNIT NO.	TYPE	STAR RATING	LIKE UNIT	FLOOR AVERAGE	COMMENTS
LEVEL 1						
	01	-	4.4	09		
	02	-	5.2	RATED		
	03	-	5.5	11		
	04	-	4.3	RATED		
	05	-	4.4	13		
	06	-	5.0	14		
	07	-	5.7	15		
	08	-	5.0	RATED		
					TOTAL	39.5
					AVERAGE	4.9
LEVEL 2						
	09	-	4.4	RATED		
	10	-	6.1	RATED		
	11	-	5.5	RATED		
	12	-	4.3	RATED		
	13	-	4.4	RATED		
	14	-	5.0	RATED		
	15	-	5.7	RATED		
	16	-	5.1	RATED		
					TOTAL	40.5
					AVERAGE	5.1
LEVEL 3						
	17	-	4.4	09		
	18	-	6.1	10		
	19	-	5.5	11		
	20	-	4.3	12		
	21	-	3.7	RATED		R2.0 added to ceiling below bondek and R3.0 to ceiling where external (metal roof)
	22	-	5.0	14		
	23	-	5.7	15		
	24	-	5.1	16		
					TOTAL	39.8
					AVERAGE	5.0
LEVEL 4						
	25	-	3.8	RATED		R3.0 Bulk insulation in ceiling
	26	-	5.2	RATED		R3.0 Bulk insulation in ceiling
	27	-	4.8	RATED		R3.0 Bulk insulation in ceiling
	28	-	3.8	RATED		R3.0 Bulk insulation in ceiling
	29	-	4.2	RATED		R3.0 Bulk insulation in ceiling
	30	-	5.3	RATED		R3.0 Bulk insulation in ceiling
	31	-	4.4	RATED		R3.0 Bulk insulation in ceiling
					TOTAL	31.5
					AVERAGE	4.5
BUILDING SUMMARY						
31 UNITS					TOTAL	151.3
					AVERAGE	4.9

Typically all units unless noted otherwise - Internal walls, floors and ceilings are uninsulated and windows to be aluminium improved with single glazed supertoned glass. External walls to include R1.0 added bulk insulation. 2700mm high ceiling heights throughout.

Note: 1x1400mm ceiling fan to each bedroom and 2x1400mm ceiling fans to each kitchen/living area included in preliminary rating.

Note: Corridor between units allowed as naturally ventilated.

Note: Corridor and party walls separating two units have R1.0 insulation.

Note: **Three lowest rating units highlighted in red.**

Note: Grey background identifies units that have been rated.

Summary Report



FirstRate: 5.1.8



Engine: 2.13

Rating	3.7 stars 	
Mode	New Home	
Energy*	Total	77.4 MJ/m2
	Heating	34.5 MJ/m2
	Cooling	42.9 MJ/m2
	* Area correction applied as per NatHERS software protocol	
Areas	Net Conditioned Floor Area (NCFA)	44.3 m2
	Unconditioned Room Area	0.0 m2
	Garage Area	0.0 m2
Climate	10 Brisbane AMO	
Site Exposure	suburban	
Client Name	BROOKFIELD RESIDENTIAL PROPERTIES	
Rated Address	PORTSIDE BUILDING 20, PORTSIDE WHARF HAMILTON 4007	
Accredited Rater	John Armsby ABSA 60841	
Date	09-01-2013	
Reference		
Comment		

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 stamped plans.
Changes to any of these could affect the rating.
FirstRate5 cannot model slab edge insulation.

Summary 17-01-2013 14:14:52 Ver:5.1.8 Engine Ver:2.13 Accredited Rater:John Armsby ABSA 60841

FirstRate Feature Report

Zones

Zone	Area (m²)	Conditioning Type	Conditioned
Kitchen 1	29.1	kitchen	Y
Other 2	4.4	otherDayCond	Y
Bedroom 3	12.5	bedroom	Y

Walls

Type	Insulation	Num Foil Layers	Foil Type	Area (m²)
Conc125: Concrete 125mm	1.0	0	None	25.2
FC: Fibro Clad Framed	1.0	0	None	55.6

Floors

Type	Insulation	Ventilation	Area (m²)
SuspSlab	0.0	encl	44.3

Roofs/Ceilings

Type	Insulation	Area (m²)
Framed:Flat - Flat Framed (Metal Deck)	3.0	19.9
Slab:Slab - Suspended Slab	2.0	24.4

Windows

Type	U-Value	SHGC	Area (m²)
Generic 07: Aluminium improved single-glazed: supertoned glass: U = 6.29: SHGC = 0.52	6.29	0.52	18.88

Window Directions

Direction	Area (m²)
W	14.1
S	4.8

Air leakage

Item	Sealed	Unsealed
Chimneys	0	0
Exhaust Fans	2	0
Wall Vents		0
Down Lights		0
Unflued Gas Heaters		0

Zone Energy Loads

Zone	Heating (MJ/m2)	Total Heating (MJ)	Cooling (MJ/m2)	Total Cooling (MJ)
Bedroom 3	62.8	785.7	46.6	582.4
Other 2	59.3	259.8	48.7	213.7
Kitchen 1	31.1	906.0	45.8	1333.1

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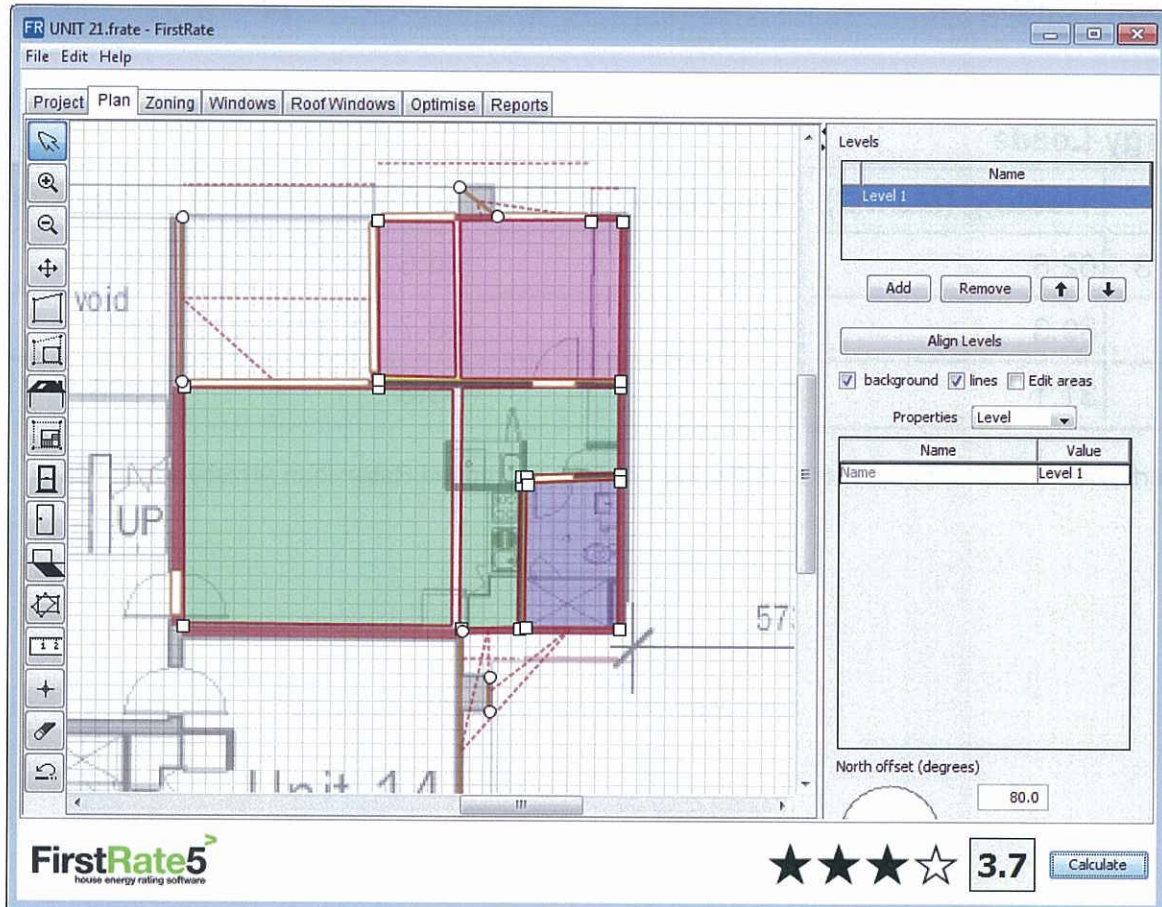
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Screen Capture of Unit 21 - The lowest rating unit in the project



Additional ratings and information available on request