

# Energy Efficiency Assessment

For  
**ATCO Structures & Logistics Pty Ltd**

Project  
**Proposed 13.2 x 6.6m Living Quarters – 3 Bed**  
Sample Client  
Lot 17 Sample Road  
Sample Town QLD 4388

Job No.  
**Sample Job**

Prepared by  
**SmartRate - Building Energy Efficiency Consultants**  
PO Box 914  
Earlville Qld 4870  
Ph 1300 867 627

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**BCA VOL 2 - PART 3.12****DTS ENERGY EFFICIENCY DECLARATION****Class of Building: 1a****Climate Zone: 3**

This report documents the energy efficiency assessment undertaken on the building work described and to confirm compliance with Part 3.12 - Energy Efficiency Provisions of the National Construction Code Series 2016 Volume Two - Building Code of Australia - Class 1 and 10 Buildings.

<b>Client:</b>	Sample Client
<b>Site Address:</b>	Lot 17 Sample Road Sample Town QLD 4388
<b>Site Details:</b>	Lot ?? on RP/DP ??????
<b>Local Authority:</b>	Sample Shire Council
<b>Construction:</b>	<b>Roof:</b> Zincalume metal roof sheeting, 20mm air gap and R2.3 foil faced insulation (95mm) under as plan; <b>Ceiling:</b> 3.6mm plywood internal linings with R1.8 insulation over; <b>External Wall:</b> Colorbond Paperbark metal cladding with R3.1 insulation (75mm) and 3.6mm plywood / 6mm villaboard internal linings as plan; <b>Floor:</b> Vinyl over 17mm F11 T & G plywood sheet flooring with R2.1 foil faced insulation (75mm) under; <b>Windows:</b> Aluminium framed with single glazed glass as plan.
<b>Drawings:</b>	Drawing Set No.123456 - Revision 1 - Sheets A01 – A05 issued 7 November 2016

**PART 3.12.1.1 - BUILDING FABRIC THERMAL INSULATION**

All insulation that is part of the envelope will be installed in accordance with **Clause 3.12.1.1**, the Manufacturer's Specifications and **AS/NZS 4859.1**.

**PART 3.12.1.2 - ROOFS**

The roof and/or ceiling that is part of the envelope must achieve the **Total R-Value** in a downwards and upwards direction as specified in **Table 3.12.1.1a**.

	Required Total R Value	Typical Construction Type Specification	Required Added Insulation	Achieved Total R Value
<b>Roof &amp; Ceiling</b>	<b>R4.6</b>	Zincalume metal roof sheeting (solar absorptance between 0.4 & 0.6), 20mm air gap, R2.3 foil faced insulation under and 3.6mm plywood internal linings with R1.8 insulation over	<b>Nil</b>	<b>R5.6</b>

**PART 3.12.1.3 - ROOF LIGHTS**

Not applicable

**PART 3.12.1.4 - EXTERNAL WALLS**

An external wall that is part of the envelope must achieve the minimum **Total R-Value** or, satisfy one of the options as specified in **Table 3.12.1.3a**.

	Required Total R Value	Typical Construction Type Specification	Required Added Insulation	Achieved Total R Value
<b>External Walls</b>	<b>R2.8</b>	Colorbond Paperbark (solar absorptance – 0.42) metal cladding with R3.1 insulation (75mm) and 3.6mm plywood / 6mm villaboard internal linings as plan	<b>Nil</b>	<b>R3.3</b>

**PART 3.12.1.5 – FLOORS**

A floor that is part of the envelope must achieve the minimum **Total R-Value** in an upwards direction or satisfy one of the options as specified in **Table 3.12.1.4**.

	Required Total R Value	Typical Construction Type Specification	Required Added Insulation	Achieved Total R Value
Floor	R1.5	Vinyl over 17mm F11 plywood sheet flooring with R2.1 foil faced insulation (75mm) under	Nil	R2.5

**PART 3.12.1.6 – ATTACHED CLASS 10A BUILDINGS**

Not applicable

**PART 3.12.2 - EXTERNAL GLAZING**

Glazing has been designed and will be installed in accordance with **Part 3.12.2 – Table 3.12.2.1**

*Glazing Specification: The calculations used to determine the required glazing units are based on the following glazing units. Alternative units may be substituted that have similar properties to those specified.*

**W1**

G James Type 131 Series Aluminium Sliding Window Single Glazed (U-Value: 6.4 & SHGC: 0.74)  
Window ID - GJA-013-10: 5mm Clear Glass (obscured)

**W2/W5**

G James Type 131 Series Aluminium Sliding Window Single Glazed (U-Value: 4.7 & SHGC: 0.37)  
Window ID - GJA-013-29: 6mm Eclipse Advantage Grey Glass

**W3/W4**

G James Type 131 Series Aluminium Sliding Window Single Glazed (U-Value: 6.4 & SHGC: 0.74)  
Window ID - GJA-013-10: 5mm Clear Glass

**D1/D2**

G James Type 245 Series Aluminium Sliding Door Single Glazed (U-Value: 4.5 & SHGC: 0.36)  
Window ID - GJA-070-28: 6mm Eclipse Advantage Grey Glass

**D3**

Half Glass Hollow Core Entry Doors with laminated clear glass - (U-Value: 6.8 & SHGC: 0.76)

**PART 3.12.3.1 CHIMNEYS AND FLUES**

Not applicable

**PART 3.12.3.2 - ROOF LIGHTS**

Not applicable

**PART 3.12.3.3 – EXTERNAL WINDOWS AND DOORS**

All external doors must be fitted with air infiltration seals

**PART 3.12.3.4 - EXHAUST FANS**

Not applicable

**PART 3.12.3.5 - CONSTRUCTION OF ROOFS, WALLS AND FLOORS**

All roofs, walls and floors must be constructed to minimise air leakage

**PART 3.12.3.6 - EVAPORATIVE COOLERS**

Not applicable

**PART 3.12.4 - AIR MOVEMENT**

Air movement must be provided to habitable rooms in accordance with **Table 3.12.4.1**

Habitable Room	Room Floor Area m <sup>2</sup>	Min Opening Ventilation	% Req. (Table 3.12.4.1)	Openable Area m <sup>2</sup>	% Opening	Shared OR Breezepath	Fans Req'd
Bedroom 1	9.02	0.68 m <sup>2</sup>	7.5%	2.22 m <sup>2</sup>	24.61%	Shared	1
Bedroom 2	12.47	0.93 m <sup>2</sup>	7.5%	2.35 m <sup>2</sup>	18.85%	Shared	1
Bedroom 3	9.77	0.73 m <sup>2</sup>	7.5%	2.35 m <sup>2</sup>	24.10%	Shared	1
Living / Kitchen / Hall	39.96	3.00 m <sup>2</sup>	7.5%	5.41 m <sup>2</sup>	13.54%	Breezepath	2

**PART 3.12.5.0**

A heated water supply system for food preparation and sanitary purposes must be designed and installed in accordance with Part B2 of NCC Volume Three — Plumbing Code of Australia.

**PART 3.12.5.1 - INSULATION OF SERVICES**

Not applicable

**PART 3.12.5.2 – CENTRAL HEATING WATER PIPING**

Not applicable

**PART 3.12.5.3 – HEATING & COOLING DUCTWORK**

Not applicable

**PART 3.12.5.4 – ELECTRIC RESISTANCE SPACE HEATING**

Not applicable

**PART 3.12.5.5 - ARTIFICIAL LIGHTING**

The maximum lamp power density or illumination power density must not exceed 5 W/m<sup>2</sup> as specified in **Part 3.12.5.5 (a)**

The proposed lighting fixtures as detailed on the drawings comply with this requirement – refer attached ABCB lighting calculator

**PART 3.12.5.6 – WATER HEATER IN A HEATED WATER SUPPLY SYSTEM**

A heated water supply system for food preparation and sanitary purposes must be designed and installed in accordance with Part B2 of NCC Volume Three — Plumbing Code of Australia.

**PART 3.12.5.7 – SWIMMING POOL HEATING AND PUMPING**

Not applicable

**PART 3.12.5.8 – SPA POOL HEATING AND PUMPING**

Not applicable

**SIGNATURE HERE**

Sample Assessor Name  
12 November 2016