ENERGY EFFICIENCY

A Building Surveyor's Point of View

Brad Archer – Star Busters

- ☆ AIBS Accreditation – Surveyor Level 3
- ☆ QBCC Licenced Building Designer – Low Rise
- ☆ Bachelor of Building Surveying – CQU
- ☆ Cert IV in NatHERS Assessment
- ☆ Cert IV in Business Sustainability
- ☆ Cert. in Building Thermal Performance
- ☆ Memberships/Licences – AIBS, BDAQ, QBCC

Discussion Topics

1. When is an energy assessment required?
2. National Construction Code (NCC)
3. Queensland Development Code (QDC)
4. NatHERS Technical Note 1.2 (2014)
5. H-Star Universal Certificates
6. Competent Persons & Risk
7. Summary

1. When is an assessment required?

- ☆ New buildings with a building envelope
- ☆ Extensions to an existing building
- ☆ Raise existing house and build under
- ☆ Renovations – certifier discretion?
- ☆ Transported building – progressive report?

2. National Construction Code

- ☆ Energy Assessment methods
- ☆ House energy rating software
- ☆ Ventilated roof spaces
- ☆ Eave ventilation
- ☆ Roof colour

Energy Assessment Methods

- ☆ Classes 1, 2 & 4 - Software rating, DTS or Verification
- ☆ Class 3, 5, 6, 7, 8, 9 - DTS or Verification method (JV3)

- ☆ Thermal break between the external fabric and metal frame – not included in the software
- ☆ Compensate for loss of ceiling insulation due to penetrations ie. downlights, exhaust fans etc

House Energy Rating Software

House energy rating software

The definition describes the software accredited under the Nationwide House Energy Rating Scheme (NatHERS). NatHERS is the Australian governments' scheme that facilitates consistent energy ratings from software tools which are used to assess the potential thermal efficiency of dwelling envelopes.

Source: NCC 2016 – Guide to NCC Volume One

- ☆ **BERS Pro v4.3**
- ☆ **AccuRate v2.3**
- ☆ **FirstRate5 v 5.2**

NCC – Ventilated Roof Spaces

(b) In *climate zones* 1, 2, 3, 4 and 5 the *Total R-Value* specified in **Table 3.12.1.1a** is reduced by 0.5 where the *required* insulation is laid on the ceiling and the roof space is ventilated by—

(i) gable vents, ridge vents, eave vents, roof vents or the like that—

(A) are evenly distributed to allow an unobstructed flow of air; and

(B) are located to ensure, where practicable, there are no dead airspaces; and

(C) have an aggregate fixed open area of not less than 1.0% of the ceiling area; or

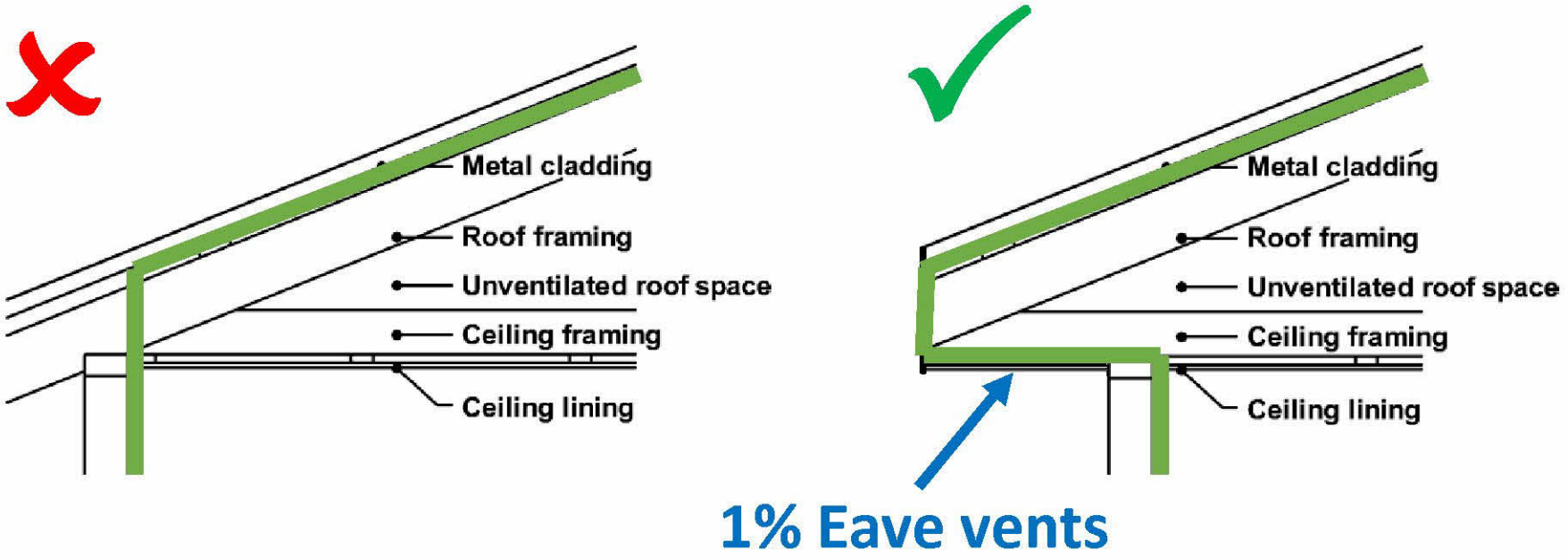
(ii) not less than 2 wind-driven roof ventilators having an aggregate opening area of not less than 0.14 m^2 in conjunction with gable vents, ridge vents, eave vents, roof vents or the like having an aggregate fixed open area of not less than 0.2% of the ceiling area.

☆ **Vents not less than 1% of ceiling area**

☆ **Wind-driven ventilators in conjunction with vents**

Source: BCA 3.12.1.2 Roofs

NCC – Eave Ventilation



Building envelope

NCC – Roof Colour

BCA 2009
BCA 2010

5. A light coloured roof reduces the flow of heat from solar radiation better than a dark colour roof. A roof with a solar absorptance value of less than 0.55 means the roof is of a light colour such as white, off-white, cream or dull zinc aluminium. Typical absorptance values based on ASTM E903 are as follows.

BCA 2016
NatHERS

5. A low solar absorptance roof reduces the flow of heat from solar radiation better than a high solar absorptance roof. A roof with a solar absorptance value of less than 0.4 typically corresponds to a roof of light colour such as white, off-white or cream. Typical absorptance values based on ASTM E903 are as follows.

Typical Absorptance Values

Colour	Value
Slate (dark grey)	0.90
Red, green	0.75
Yellow, buff	0.60
Zinc aluminium — dull	0.55
Galvanised steel — dull	0.55
Light grey	0.45
Off white	0.35
Light cream	0.30

Source: BCA Table 3.12.1.1a – Explanatory notes

3. Queensland Development Code

- ☆ MP4.1 Sustainable Buildings
- ☆ Application of QDC for E.E.
- ☆ Outdoor living areas
- ☆ Performance requirements
- ☆ Acceptable solutions

NOT THE CONSULTANT'S DECISION

Application of QDC for E.E.

Applications	Performance Requirements											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction of *new class 1* buildings.	✓		✓		✓	✓	✓	✓				
Renovation of a *class 1* building.	✓		✓		✓							
Construction of *new class 2* buildings.		✓		✓		✓	✓	✓	✓	✓	✓	
Renovation of a *sole-occupancy unit* in a *class 2* building.		✓		✓								
Construction of a *new class 5* building.									✓	✓	✓	
Construction of a new *major development* or a *major addition* to a *major development* located in a *designated local government area*.												✓

Source: Table 1 – QDC MP4.1 Sustainable Buildings

Outdoor Living Area

Outdoor living area means a space that:

a) is directly accessible from, and attached to, a living area of the building such as a lounge, kitchen, dining and family rooms; and

b) has a minimum *floor area* of 12.0m^2 and a minimum dimension in all directions of 2.5 metres; and

c) is fully covered by an impervious roof; and

d) has:

(i) for *class 1* buildings - two or more sides open or capable of being readily opened, not including the connection between the internal living area and the *outdoor living area*; or

(ii) for *class 2* buildings - at least one side open or capable of being readily opened, not including the connection between the internal living area and the *outdoor living area*.

Source: Definitions – QDC MP4.1 Sustainable Buildings

Performance Requirements – P1

Energy Efficiency – *class 1* buildings

P1 The thermal performance of a *class 1* building and an enclosed *class 10a* building attached to a *class 1* building must comply with *performance requirement* P2.6.1 of the *BCA* 2010 (Volume 2).

Source: QDC MP4.1 Sustainable Buildings – P1

Acceptable Solutions – A1 (1)

a) BCA 2010 vol 2 – Parts 3.12.1 to 3.12.4 (DTS)

b) BCA 2010 vol 2 – Verification method (Comparison)

c) Software rating – Not less than 6 Stars (out of 10)

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d) Climate zones 1, 2 & 5 – 4.5 Stars + 1.5 credits

e) Climate zone 3 – 5 Stars + 1 credit

f) BCA 2009 vol 2 – Only with a nominal credit

Source: QDC MP4.1 Sustainable Buildings – A1 (1)

Acceptable Solutions – A1 (2)

(2) Credits/reductions for solutions (d) to (f)

a) **Valid outdoor living area**
   - reduce minimum rating by 0.5 Stars

b) **Valid outdoor living area with a fan**
   - reduce minimum rating by 1 Star

c) **Solar photovoltaic system (1kW or more)**
   - reduce minimum rating by 1 Star

Source: QDC MP4.1 Sustainable Buildings – A1 (2)

Performance Requirements – P2

Energy Efficiency – *class 2* buildings

P2 The thermal performance of *sole occupancy units* in *class* 2 buildings complies with *performance requirement* JP1 of the *BCA* 2009 (Volume 1).

Source: QDC MP4.1 Sustainable Buildings – P2

Acceptable Solutions – A2 (1)

(1) BCA 2009 vol 1 – For Class 2 Building

a) Each sole occupancy unit
– Software rating of not less than 4 Stars

b) Combined sole occupancy units
– Software rating of not less than 5 Stars

c) Each sole occupancy unit
– BCA 2009 vol 1 – Section J - DTS

Source: QDC MP4.1 Sustainable Buildings – A2 (1)

Acceptable Solutions – A2 (2)

(2) Credits/reductions for climate zones 1 & 2

a) Valid outdoor living area
- reduce minimum rating by 0.5 Stars

b) Valid outdoor living area with a fan
- reduce minimum rating by 1 Star

c) Reduction only permitted when air conditioned spaces that open directly to the outdoor living area have an automatic shut down system

Source: QDC MP4.1 Sustainable Buildings – A2 (2)

QDC Summary

- ☆ Valid outdoor living area – 0.5 Stars
- ☆ Valid O.L.E. with a fan – 1 Star
- ☆ Solar power system 1kW+ - 1 Star
- ☆ Separate rating for Class 1 and Class 2 unit
- ☆ Separate rating for each Class 2 building
- ➢ **DO NOT add Stars for QDC credits**

4. NatHERS Technical Note 1.2 (2014)

- ☆ NatHers Principles
- ☆ Terrain Exposure Category
- ☆ Modelling of Additions
- ☆ Zoning – Whole of Dwelling
- ☆ Documentation
- ☆ Multiple Units – Class 2 Example

NatHERS Principles (1.1)

1.1 This Technical note is for use with Chenath engine V3.13 only and replaces Discussion document, NatHERS Software Modelling Principles version 4.1 (2012), Technical Note Version 1.0, Version 1.1 2013 and Addendum 1.2013. NatHERS Technical Note 2 Version1.0-2012 and Addendum 1.2012.

Technical Note 1.2 (2014) replaces the previous Technical Notes and Discussion Documents

Source: NatHERS Technical Note (2014) – 1.1

NatHERS Principles (1.5)

1.5 Each dwelling must have its own individual rating even if it is a design that is regularly repeated on the same or different projects. The assessment and rating of each individual dwelling must reflect the individual characteristics of that dwelling modelled in accordance with this note.

Technical Note 1.2 (2014) stipulates that each dwelling must have an individual rating even if the design is repeated

Source: NatHERS Technical Note (2014) – 1.5

Terrain Exposure Category (4.4)

4.4 Assessors must use the exposure category best suited to the terrain surrounding the house or unit (see Table 1). Allowance should be made for the increased exposure of high-rise units, provided the elevation is associated with a reduction in obstructions.

Table 1: Terrain Exposure Categories

Terrain	Description	Examples
Category 1	**Exposed** open terrain; few or no obstructions.	Flat grazing land, lake-side, ocean-frontage, desert. Exposed high-rise unit above 10 floors.
Category 2	**Open** terrain; grasslands with few well scattered obstructions below 10 m.	Farmland with scattered sheds, lightly vegetated bush blocks. Medium-rise unit above 3 floors.
Category 3	**Suburban** terrain; numerous closely spaced obstructions below 10 m.	Suburban housing, heavily vegetated bushland areas.
Category 4	**Protected** terrain; numerous closely spaced obstructions over 10 m.	City and industrial areas.

Source: NatHERS Technical Note (2014) – 4.4

Modelling of Additions (6.1)

6.1 Any rating of an existing house/apartment and an addition to an existing house/apartment must treat the project as a complete dwelling and rate both the existing and proposed as one dwelling. All component zones of a dwelling must be included in the rating (Refer Section 7: Zoning).

Software rating tools must not be used to rate only part of a building.
The whole house must be rated.

Source: NatHERS Technical Note (2014) – 6.1

Documentation (14) – Certificates

14.1 For ratings completed in 'regulatory' mode: The assessor will supply the client with the stamped plans including the NatHERS QR code and the AAO stamp (if required) and a hard copy or electronic format (PDF) of the NatHERS software certificate.

14.2 For Class 2 dwellings each individual unit must have a certificate. Where a number of Class 2 multi-unit buildings are located in close physical proximity – as part of the same development, or where the strata plan identifies separate lots, the heating/cooling load and documentation must be completed for each building/lot separately.

House Energy Rating certificate required for each house or unit – Class 1 & 2 buildings

Source: NatHERS Technical Note (2014) – 14

Documentation – Class 2 buildings

14.2.1 Assessors need to prepare a document for each building that will separately comply with the BCA that identifies the rating of all individual sole occupancy units in the building and the average rating of all units in the building. The documentation required and the separation of buildings must be confirmed with the client, particularly where buildings are connected e.g. via a bridge, an enclosed walkway or underground carpark.

Separate report containing the rating of each individual unit and the average rating of all units in each separate building

Source: NatHERS Technical Note (2014) – 14

Multiple Units – Class 2 Example

15 units on 5 levels – ALL different ratings

5. Open, unit below, roof above, no shading

4. Open, unit below, unit above, no shading

3. Suburban, unit below, unit above, no shading

2. Suburban, unit below, unit above, some shading

1. Suburban, carpark below, unit above, good shading

15 separate rating certificates – 1 per unit

1 certificate and report for the Class 2 building

Source: Google Maps – 270 Walker St, Townsville City.

5. CSIRO H-Star certificates

- ☆ Universal for all energy rating software
- ☆ Generated directly from uploaded files
- ☆ Cannot be altered by the assessor

House Energy Rating — NON-ACCREDITED*

Rating document number: 87654321 | Date of rating: 12 April 2014 | Star rating: 6.5

Completed by

Name:	Fred Williams
Organisation:	Capital Building Assessors
Email:	frederick.williams@cbassessors.com.au
Phone:	0412 123 456
Declaration of interest:	Employed by designer of the building
Software used:	FirstRate5 v5.5

Overview

Dwelling details

Address:	Unit 15, 237 Edwina Mountbatten Drive		
Suburb:	West Wyndham		
State:	NSW	Postcode:	2345
Type:	New dwelling	NCC Class:	01
Lot/DP number:	9/53	NatHERS climate zone:	14
		Exposure:	Suburban

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

Construction:	Brick veneer Ceramic tile roof Slab on ground
Insulation:	R1.5 wall insulation R3.5 ceiling insulation
Glazing:	Timber frame Single glaze clear

Ceiling penetrations
(see following pages for details)

Sealed:	5
Unsealed:	18
TOTAL**	23

Principle downlight type: Compact fluorescent

*NOTE: This total is the maximum number of ceiling penetrations allowed to a ceiling (under a roof) for this certificate. If this number is exceeded 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 (m2)

Conditioned:	55
Unconditioned:	23
Garage:	12
TOTAL:	90

Annual thermal performance loads (MJ/m²)

Heating:	576
Cooling:	658
TOTAL:	1234

Window selection – default windows only

Note on allowable window values: With a 10% tolerance to the nominated SHGC window values shown on page 2, the following ratings are achieved:

-10% SHGC	6.3
+10% SHGC	6.6

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 the rating listed above falls below 6.0 stars or the required rating, then the window with this tolerance can NOT be selected.

Scan to access this rating document online and confirm this is valid.

Plan documents

Plan ref/date:	Ref24/88
Prepared by:	Wyndham Sustainable Homes

* This rating has been completed by a non-accredited rater. For more details see the Australian Government Nationwide House Energy Rating Scheme (NatHERS) website www.nathers.gov.au

House Energy Rating — NON-ACCREDITED*

Rating document number: **87654321** Date of rating: **12 April 2014** Star rating: **6.5**

Building features

Window type and performance value

Window ID	Window type	U-value	SHGC
ALM-001-01 A	Aluminium A, single glazed, clear	5.75	0.69
ALM-002-01 B	Aluminium B, single glazed, clear	7.27	0.58
ALM-003-25 A	Aluminium A, double glazed, toned glass	6.23	0.65

Window schedule

Window ID	Window no.	Height (mm)	Width (mm)	Orientation	Zone name	Outdoor shade
ALM-001-01 A	001	2100	1000	SSE	Kit/liv	No
ALM-001-01 A	002	2100	1000	SE	Kit/liv	No
ALM-001-01 A	003	2100	1000	E	Kit/liv	No
ALM-001-01 A	004	1500	1000	SW	Br1	Yes
ALM-001-01 A	005	1500	1000	WSW	Br1	Yes
ALM-001-01 A	006	1500	1000	N	Br2	Yes
ALM-002-01 B	007	1500	1000	N	Br2	Yes
ALM-002-01 B	008	1500	1000	N	Br2	Yes
ALM-002-01 B	009	1200	1500	S	Br3	No
ALM-002-01 B	010	1200	1500	S	Br3	No
ALM-002-01 B	011	1200	1500	E	Ensuite	No
ALM-002-01 B	012	1200	1500	W	Bath	Yes
ALM-003-25 A	013	900	1200	W	Bath	Yes
ALM-003-25 A	014	900	1200	N	Living	Yes
ALM-003-25 A	015	900	1200	N	Living	Yes
ALM-003-25 A	016	900	1200	N	Living	Yes

Roof window and skylight type and performance value

ID	Window type	U-value	SHGC
SC-001-02-234	Single glazed, clear glass, timber/uPVC	5.75	0.69
SO-213-03-123	Single glazed, toned glass, aluminium	7.27	0.58

Roof window and skylight schedule

ID	Roof window/ skylight no.	Area (m²)	Orientation	Zone name	Outdoor shade	Indoor shade/ diffuser
SC-001-02-234	017	1.1	NNE	Kit/liv	20%	No
SC-001-02-234	018	2.0	NE	Kit/liv	40%	Yes
SO-213-03-123	019	1.1	N	Living	20%	Yes
SO-213-03-123	020	2.0	NNW	Living	60%	No

* This rating has been completed by a non-accredited rater. For more details see the Australian Government Nationwide House Energy Rating Scheme (NatHERS) website www.nathers.gov.au.

Building features continued

External wall type

Type	Insulation	Wall wrap
Brick veneer	Glass fibre batt: R2.0	Yes
Solid brick	Glass fibre batt: R2.0	Yes
Reverse brick veneer	Glass fibre batt: R2.0	No

External wall schedule

Wall type	Area (m²)	Orientation	Zone name	Fixed shade	Eaves
Cust-BV-123-Ac	8.5	N	Kit/liv	No	Yes

Internal wall type

Wall type	Area (m²)	Insulation
Plasterboard	8.5	Glass fibre batt: R3.0

Floors

Location	Construction	Area (m²)	Sub floor ventilation	Added insulation	Covering
Living	CSOG: slab on ground	5.2	none	R2.5	Carpet
Garage	CSOG: slab on ground	2.1	Encl	0	None

* This rating has been completed by a non-accredited rater. For more details see the Australian Government Nationwide House Energy Rating Scheme (NatHERS) website www.nathers.gov.au.

Building features continued

Ceiling type

Location	Material	Added insulation	Roof space above
Living	Plasterboard	R2.5	Yes
Bedroom	Timber	0	No

Ceiling penetrations

Location	Number	Type	Diameter (mm)	Sealed/unsealed
Living	8	LED downlight	90	Sealed
		Light fitting	100	Sealed
		Exhaust fan	400	Sealed
		Ceiling air vent	250	Unsealed

Ceiling fans

Location	Number	Diameter (mm)
Living	2	900
Bedroom	1	1200

Roof type

Material	Added insulation	Roof colour
Metal	R2.5	Dark
Concrete tile	Sarking	Light

House Energy Rating — NON-ACCREDITED*

Rating document number: 87654321 Date of rating: 12 April 2014 Star rating: 6.5

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 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 are 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 House Energy Rating report was prepared 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.

Raters/Assessors

Non-accredited assessors may not have completed a recognised software training course, do not undertake quality assurance processes, do not have any on-going training requirements and are not supported or recognised under the NatHERS scheme.

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

If your rater is unable to address your questions or concerns, please contact your state or territory building code authority.

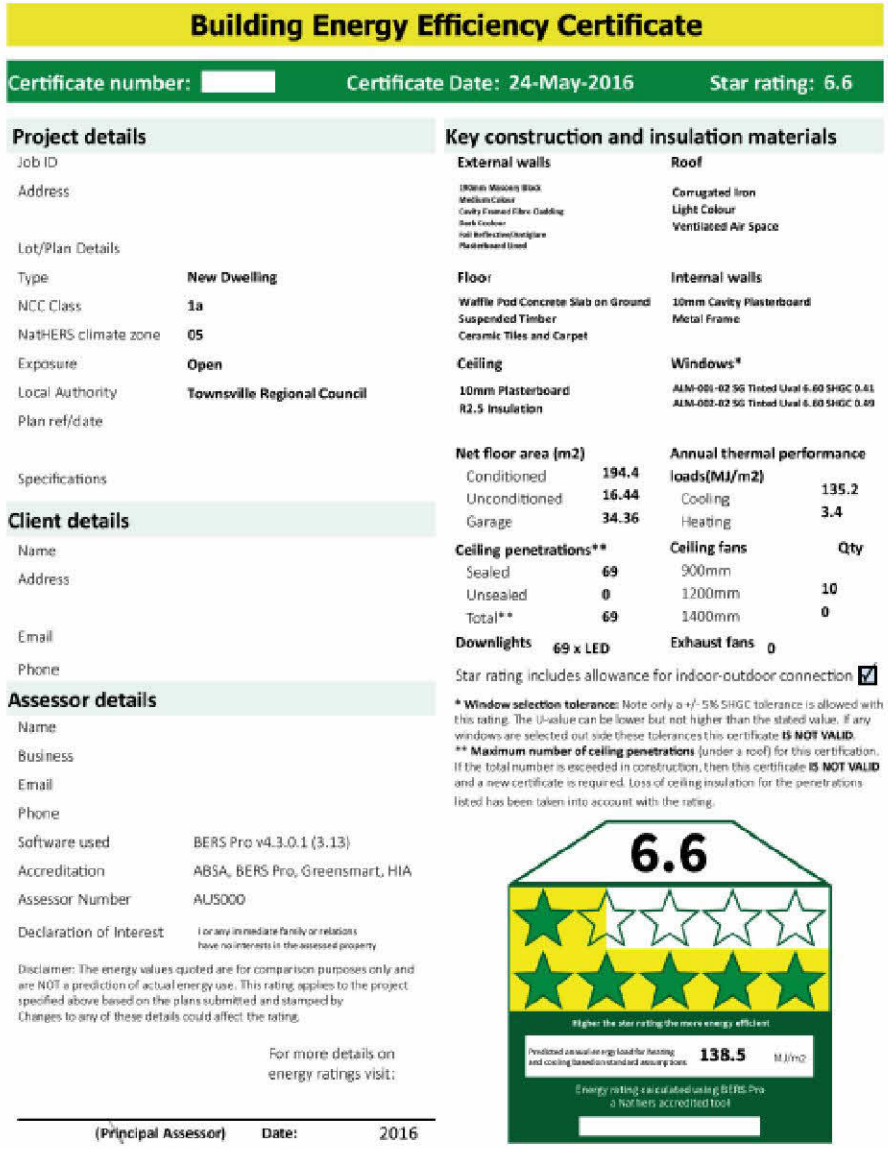
Disclaimer

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 document. Changes to any of these details could affect the rating.

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

Assessor Certificates

- ☆ Not generated by the H-Star portal or software package
- ☆ Added Star for QDC
- ☆ Assessment data can been altered



Building Energy Efficiency Certificate

Certificate number: [redacted] Certificate Date: 24-May-2016 Star rating: 6.6

Project details

Job ID
Address
Lot/Plan Details
Type: New Dwelling
NCC Class: 1a
NatHERS climate zone: 05
Exposure: Open
Local Authority: Townsville Regional Council
Plan ref/date
Specifications

Client details

Name
Address
Email
Phone

Assessor details

Name
Business
Email
Phone
Software used: BERS Pro v4.3.0.1 (3.13)
Accreditation: ABSA, BERS Pro, Greensmart, HIA
Assessor Number: AUS000
Declaration of Interest: I or any immediate family or relations have no interests in the assessed property

Disclaimer: The energy values quoted are for comparison purposes only and are NOT a prediction of actual energy use. This rating applies to the project specified above based on the plans submitted and stamped by Changes to any of these details could affect the rating.

For more details on energy ratings visit:

(Principal Assessor) Date: 2016

Key construction and insulation materials

External walls: 190mm Masonry Block; Medium Colour; Cavity Framed Fibre Cladding; Dark Colour; Foil Reflective/Insulation; Plasterboard lined
Roof: Corrugated Iron; Light Colour; Ventilated Air Space
Floor: Waffle Pod Concrete Slab on Ground; Suspended Timber; Ceramic Tiles and Carpet
Internal walls: 10mm Cavity Plasterboard; Metal Frame
Ceiling: 10mm Plasterboard; R2.5 Insulation
Windows*: ALM-001-02 SG Tinted Ucal 6.60 SHGC 0.41; ALM-002-02 SG Tinted Ucal 6.60 SHGC 0.49

Net floor area (m2)	
Conditioned	194.4
Unconditioned	16.44
Garage	34.36

Annual thermal performance loads(MJ/m2)	
Cooling	135.2
Heating	3.4

Ceiling penetrations**	
Sealed	69
Unsealed	0
Total**	69

Ceiling fans	Qty
900mm	
1200mm	10
1400mm	0

Downlights: 69 x LED
Exhaust fans: 0

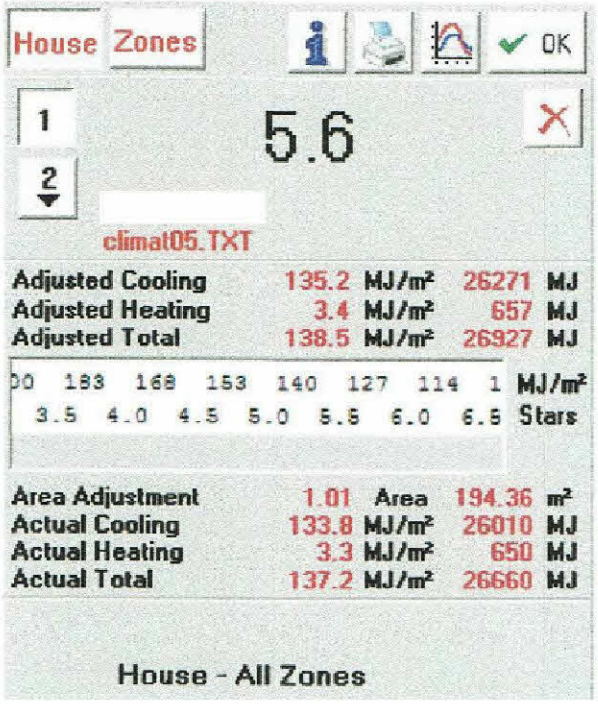
Star rating includes allowance for indoor-outdoor connection ☑

* **Window selection tolerance:** Note only a +/- 5% SHGC tolerance is allowed with this rating. The U-value can be lower but not higher than the stated value. If any windows are selected out side these tolerances this certificate **IS NOT VALID**.
** **Maximum number of ceiling penetrations** (under a roof) for this certification. If the total number is exceeded 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.

Assessor Certificate – QDC Credits

☆ Incorrect use of QDC

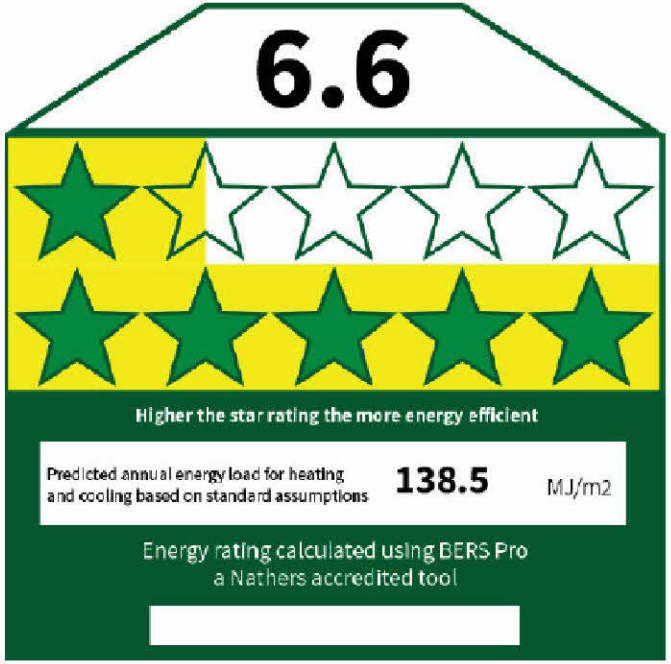
☆ 1 full Star added



Star rating includes allowance for indoor-outdoor connection ☑

*** Window selection tolerance:** Note only a +/- 5% SHGC tolerance is allowed with this rating. The U-value can be lower but not higher than the stated value. If any windows are selected out side these tolerances this certificate **IS NOT VALID.**

**** Maximum number of ceiling penetrations** (under a roof) for this certification. If the total number is exceeded 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.



Assessor Certificate – Project Details

Project details

Job ID	
Address	
Lot/Plan Details	
Type	**New Dwelling**
NCC Class	**1a**
NatHERS climate zone	**05**
Exposure	**Open**
Local Authority	**Townsville Regional Council**
Plan ref/date	

Key construction and insulation materials

External walls

190mm Masonry Block
Medium Colour
Cavity Framed Fibre Cladding
Dark Ccolour
Foil Reflective/Antiglare
Plasterboard Lined

Roof

Corrugated Iron
Light Colour
Ventilated Air Space

Floor

Waffle Pod Concrete Slab on Ground
Suspended Timber
Ceramic Tiles and Carpet

Internal walls

10mm Cavity Plasterboard
Metal Frame

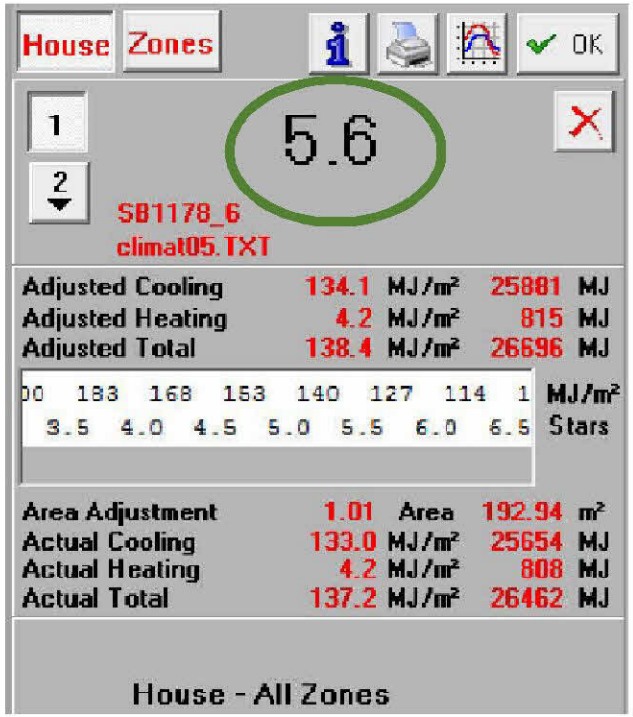
Ceiling

10mm Plasterboard
R2.5 Insulation

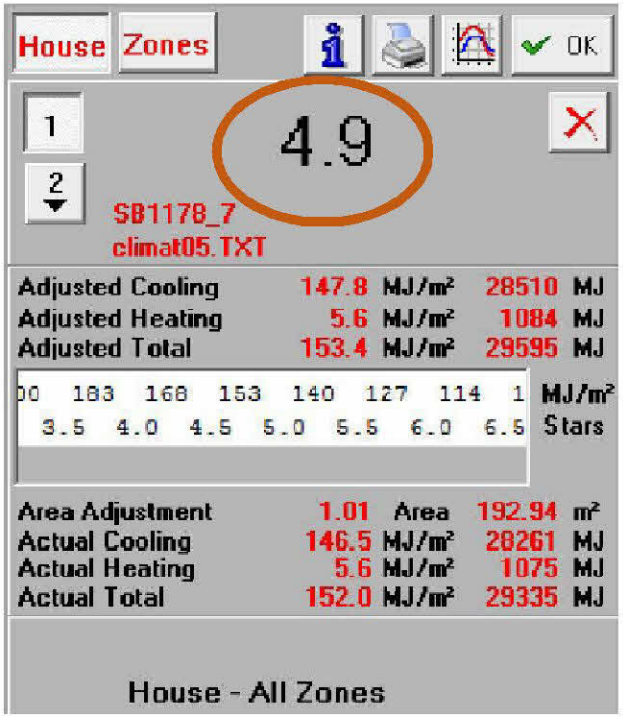
Windows*

ALM-001-02 SG Tinted Uval 6.60 SHGC 0.41
ALM-002-02 SG Tinted Uval 6.60 SHGC 0.49

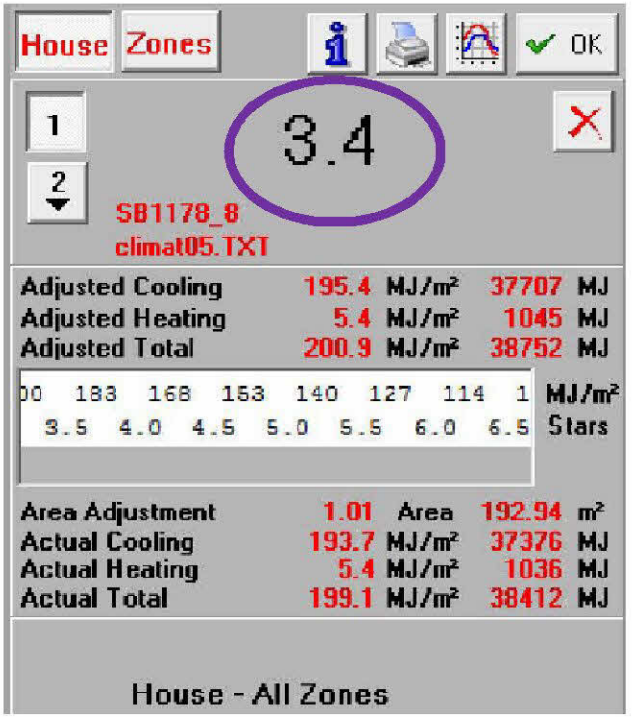
Assessor Certificate – SB Comparison



Using data from example



Corrected roof & wall details



Corrected exposure

6. Competent Persons & Risk

- ☆ Building Regulation 2006 – Appointment
- ☆ Building Regulation 2006 – Restrictions
- ☆ Building and Plumbing Newsflash 548
- ☆ Assessor Experience, Qualifications & Skills
- ☆ Levels of Competency
- ☆ Conflict of Interest and Risk

Building Regulation 2006 (Part 5)

17 Appointment and functions

(1) Subject to section 18, a building certifier may decide an individual—

(a) is, or has from a particular day been, competent to perform functions that help (***design/specification help***) the certifier perform building certifying functions for building design or specification; or

Building certifier can decide a person is competent to perform functions to help

Source: Building Regulation2006 a17(1)(a)

Building Regulation 2006 (Part 5)

18 Restrictions on deciding competency

(3) If no relevant law requires the individual to be licensed or registered to be able to give the help, the building certifier must assess the individual as having appropriate experience, qualifications or skills to be able to give the help.

Example—

The help the subject of the decision is assessing whether a building complies with the performance requirements for energy efficiency under the BCA, part 3.12. An individual with the skills to carry out appropriate computer modelling for the assessment has appropriate skills to give the help.

Source: Building Regulation2006 s18(3)

Building and Plumbing Newsflash 548

House energy assessor competence

If an accredited assessor has performed the assessment, the building certifier can accept that it has been completed by a competent person (subject to any contrary evidence). Accredited assessors operate under a Code of Practice and are subject to quality assurance reviews by their respective AAO, are required to undertake continuing professional development and have professional indemnity insurance.

If an non-accredited assessor has performed the assessment, before the building certifier can accept that they are competent, they will need to confirm that the assessor:

1. has suitable training and skills
2. used appropriate assessment practices, and
3. used an approved NatHERS software tool.

Source: Building Codes Queensland

Building and Plumbing Newsflash 548

House energy assessor competence

1. Training and skills

Since 1 July 2013, the 'Certificate IV in NatHERS Assessment' has been available as an appropriate qualification for new and existing house energy assessors. It would be expected that the building certifier would consider the Certificate IV in NatHERS Assessment as providing strong evidence that the assessor has the necessary training to undertake software assessments.

If the house energy assessor does not hold a Certificate IV in NatHERS Assessment, the building certifier will need to consider their successful completion of a software training course and relevant assessment skills and experience.

CERT IV in NatHERS Assessment = strong evidence of competency

Source: Building Codes Queensland

Experience, Qualifications & Skills

- ☆ Building industry experience
- ☆ Accreditations – AIBS, BDAV, ABSA (1 in NQ)
- ☆ Licences – QBCC Building Designer or Certifier
- ☆ Education – Relevant degree, Cert IV NatHERS
- ☆ Memberships – BDAQ, ABSA
- ☆ Software – Current user licence for rating tools
- ☆ Insurance – Professional Indemnity
- ☆ CPD Program – Through association or self

Levels of Competency

1. Software rating assessment – Class 1, 2 or 4
   - ☆ Cert IV in NatHERS Assessment
   - ☆ Software user licence
2. Deemed-to-satisfy assessment – All Classes
   - ☆ Accredited NatHERS Assessor or Building Surveyor
   - ☆ Experience in building design or building surveying
3. Verification assessment – Alternative solution
   - ☆ Relevant tertiary qualification and licence
   - ☆ High level of experience in thermal design

Conflict of Interest and Risk

1. **Who does the energy assessor work for?**
   - ☆ Building certifier
   - ☆ Building designer/contractor/building company
   - ☆ Product supplier eg. Insulation, glass
   - ☆ Independent – Are they contracted?
2. **How current are the assessor's skills?**
   - ☆ Accredited, Licenced & Insured?
   - ☆ CPD and relevant industry memberships?

7. Summary

1. Assessment required for Building envelopes
2. Check NCC: colours & ventilation features
3. Check QDC: acceptable solutions and credits
4. Check NatHERS: whole house, terrain exposure
5. Individual assessment for each unit & building
6. Universal Certificates provided with Form 15
7. Newsflash 548 – Assessor competence & certs