

Peer review guideline

Assessing the energy equivalence of housing
using the peer review process

June 2024



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Background

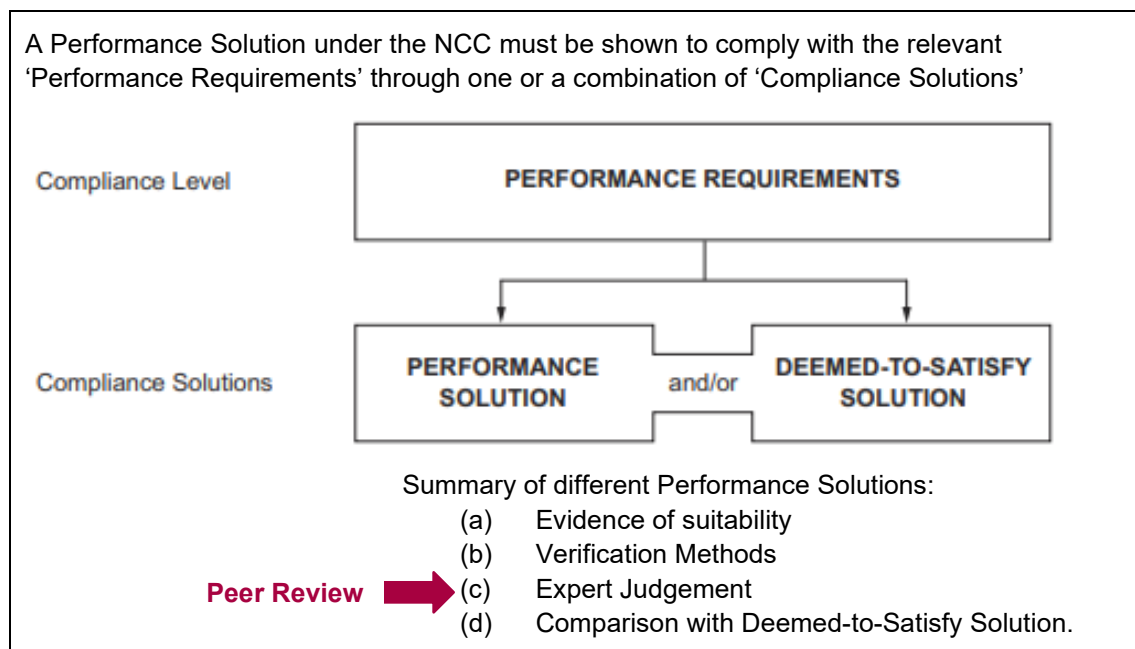
This guideline outlines the peer review process which can be used as a compliance option for assessing the energy equivalence (thermal performance) of new houses and major renovations (where practical) in Queensland.

It is intended to assist clients, designers, council officers, building certifiers and other interested parties to understand the peer review process. The peer review process is a method available to assess the energy equivalence of house designs (a class 1 dwelling and its attached class 10a garage) in Queensland.

This process provides for an independent peer review of a 'Performance Solution' (previously referred to as an alternative solution) for the energy equivalence of a house design that may not readily comply with the typical 'deemed-to-satisfy' (DTS) solutions under the National Construction Code 2022 (NCC) i.e. either the more prescriptive elemental provisions or use of a house energy rating software tool.

This guideline provides details about the process for the 'expert judgement' performance solution of the NCC (see Figure 1). The 'expert judgement' will be made by a suitably qualified and recognised specialist, referred to in this guideline as the 'expert'.

Figure 1: Compliance options



Note: Under the NCC, Expert Judgement means the judgement of an expert who has the qualifications and experience to determine whether a Performance Solution or Deemed-to-Satisfy Solution complies with the Performance Requirements.

Application

The peer review process applies to assessing the energy equivalence of a class 1 building and its attached 10a building under the NCC i.e. a detached or semi-detached house and its attached garage.

New class 1 buildings and major renovations (where practical) in Queensland must achieve a minimum house energy equivalence of 7-stars (out of 10), in accordance with the Queensland Development Code Mandatory Part 4.1—Sustainable buildings (QDC 4.1).

Assumptions

This guideline has been developed to assist users with the assessment of a building's design for energy equivalence (thermal performance) under QDC 4.1, including consideration of its broad climate zone

(Appendix 1) and the site's local climate. This assessment will not cover other matters prescribed by the NCC, such as structural adequacy.

Prior to submission to the peer review process, it is preferable that the building's design is assessed through other assessment methods such as a house energy rating software (BERS Pro, AccuRate, FirstRate5 or HERO under the Nationwide House Energy Rating Scheme (NatHERS)) relative to its climate file (Appendix 2).

An expert assessment (peer review) will be made subject to the relevant building and planning requirements for the property, such as relevant siting and boundary clearances.

If the proposed house is located in a NatHERS climate zone subject to the separate cooling and heating load limit requirements under QDC 4.1 with a software assessment, the expert will need to consider the relevant results from the NatHERS software report. If the NatHERS software report indicates there is potential non-compliance with either the cooling or heating load limits, the expert will need to focus on how the design can appropriately respond to that particular aspect for compliance.

Experts should only provide advice on aspects of design relevant to their competencies and they should seek guidance from other suitably qualified persons as required.

An applicant formally applies to have their building design assessed for energy equivalence by an expert through the peer review process (Form 1 – see Appendix 3).

The Peer review assessment report (Form 2 – see Appendix 4) can be used as 'evidence of suitability' under NCC Volume Two (Part A5G3 Evidence of suitability).

Legislation

This guideline is made under section 258 of the *Building Act 1975*. It is intended to assist with compliance under the Act by specifying a process for peer review in Queensland² through the expert judgement method available under the NCC.

What is peer review?

Peer review is a performance solution process that can be used to assess energy equivalence under QDC 4.1. The assessment is conducted by a recognised specialist (the expert) in building design and energy efficiency. Experts recognised under this guideline are suitably qualified persons who are competent in a particular design field and have experience in a relevant discipline such as architectural science, building design, building physics or engineering.

Applicants may, on behalf of clients, formally apply for peer review (Form 1). The expert will provide the applicant with a completed peer review assessment report (Form 2). An application that has been deemed as 'successful' by the expert can be used to support a building development application as evidence of compliance with the energy efficiency requirements under QDC 4.1.

Applying for peer review assessment

Application process

A formal peer review assessment is undertaken using the following steps:

1. **Select expert** – a list of peer review experts can be found from www.business.qld.gov.au using the search term 'Sustainable buildings and housing guidelines'. Select an expert and arrange a quote.
2. **Peer review application** – once you have agreed on the terms with the expert, complete the peer review application for energy equivalence requirements (Form 1) and submit it with a copy of the building plans and other relevant supporting documentation to your selected expert. Applicants may

wish to submit other material, such as a house energy rating software result (using BERS Pro, AccuRate, FirstRate5 or HERO), to assist the expert in understanding how the design varies from the typical compliance methods. All supporting material must clearly identify reference documentation e.g. numbered floor plans and date.

3. **Expert analysis and assessment report** – the expert will review the application including all relevant material and assess compliance with the energy efficiency requirements under QDC 4.1. The expert may request additional information if required. The expert will then prepare a peer review assessment report (Form 2) stating if the design is ‘supported’ or ‘not supported’. The report will detail the basis for the expert’s decision e.g. relevant tests, specifications, rules, standards, codes of practice and other publications.
4. **Recommended modifications (if required)** – where a proposed design is considered non-compliant, the expert may recommend design modifications to the applicant to achieve compliance with QDC 4.1.
5. **Submit peer review assessment report** – where an applicant is seeking to rely on the peer review assessment report (Form 2), it should be included with the building development application and submitted to the relevant building certifier. The building certifier may choose to accept the application if they are satisfied the assessment complies as a performance solution.

Applicant requirements

The applicant must ensure that the following information is included in a submission for peer review assessment:

- a completed peer review application (Form 1)
- house design and specifications such as plans, sections, elevations, details of building materials
- local climate and site analysis that includes local climatic data (average monthly temperatures (maximums and minimums), humidity, rainfall, wind speed/direction), topography, solar access (including sun paths), boundary clearances, adjacent property information, etc.

This information can be used by the expert as part of their assessment.

Verification of performance

It is recommended that an application for peer review include any associated data and/or relevant reports that would assist with informing the expert about the thermal performance of the proposed building design. This can include a consultant’s report for a particular aspect, any relevant building authority advice, building material thermal performance data or assembly test results etc.

Peer review fees

Liability for payment

The peer review assessment fees must be met by the applicant, or their nominee, in the ‘Billing address’ on the peer review application form (Form 1).

Assessment fees

The time and cost associated with the assessment of a peer review application will be charged according to the expert’s standard hourly consulting rate, or as otherwise agreed between the parties. It is recommended that fee agreements include provisions relating to re-assessment of any amended design (that may follow from a recommended modification).

Repeat assessment (amended design)

If the expert considers that a building design does not meet the energy equivalence requirement under QDC 4.1, the applicant may re-submit an amended design for a repeat assessment.

Peer review reporting

Reporting

The expert considering the application must complete and provide a peer review assessment report (Form 2) to the applicant within **20 business days** (where no variations are required) to support the building development application.

A copy of a completed assessment report (Form 2) and relevant application material must be forwarded by the expert to the administering authority **within five (5) business days** of the decision.

The assessment report (Form 2) must state whether the application being assessed is 'supported' or 'not supported', and must include:

- a description of the building and the energy efficient design features used for its thermal performance
- the method of assessment used, including all qualifying and relevant factors
- the justification for how the building design will demonstrate compliance with the energy efficiency requirement for its thermal performance.

The peer review assessment report (Form 2) must be submitted as part of the building development application if it is to be relied upon by a building certifier.

Quality assurance

To ensure consistency and accuracy of peer review assessments made by an expert, the administering authority may audit such assessments.

Communication

The expert will communicate with the nominated contact person as indicated on the peer review application (Form 1), but they will not communicate with the applicant's client, local government officers or certifying organisations unless otherwise agreed between the expert and the applicant.

It is the responsibility of the applicant to consult with and inform their client, council officers and other relevant organisations on matters relevant to the application. The applicant must ensure that any required changes to the building design to achieve compliance are agreed to by their client, and that the client understands the impact of those changes on the cost, function and appearance of the building.

The expert will provide a peer review assessment report (Form 2) to the applicant within 20 business days of submission of the application (where no variations are required).

The expert may assist the applicant to improve the building's energy equivalence. If significant changes are required and they cannot be incorporated into the design, the expert will issue a peer review assessment report (Form 2) stating that the building does not achieve compliance with QDC 4.1 ('not supported') and outline the reasons why.

Definitions

Administering authority: the administering authority for the peer review process is the Building Policy, Department of Housing, Local Government, Planning and Public Works.

Applicant: is the person submitting the application for peer review (e.g. an architect, building designer, engineer), usually acting on behalf of their client (e.g. homeowner or property owner).

Assessment report (Form 2): a written document issued by expert to advise the applicant that their building design has been assessed as 'supported' or 'not supported', and justification for their decision. It may also recommended modifications to the building design to achieve compliance.

Building certifier: is a person who is licensed as a building certifier under the *Building Act 1975 (Chapter 6)*.

Expert judgement: means the judgement of an expert who has the qualifications and experience to determine whether a Performance Solution or Deemed-to-Satisfy Solution complies with the Performance Requirements, as per NCC Volume Two (Part A2G2 Performance Solution).

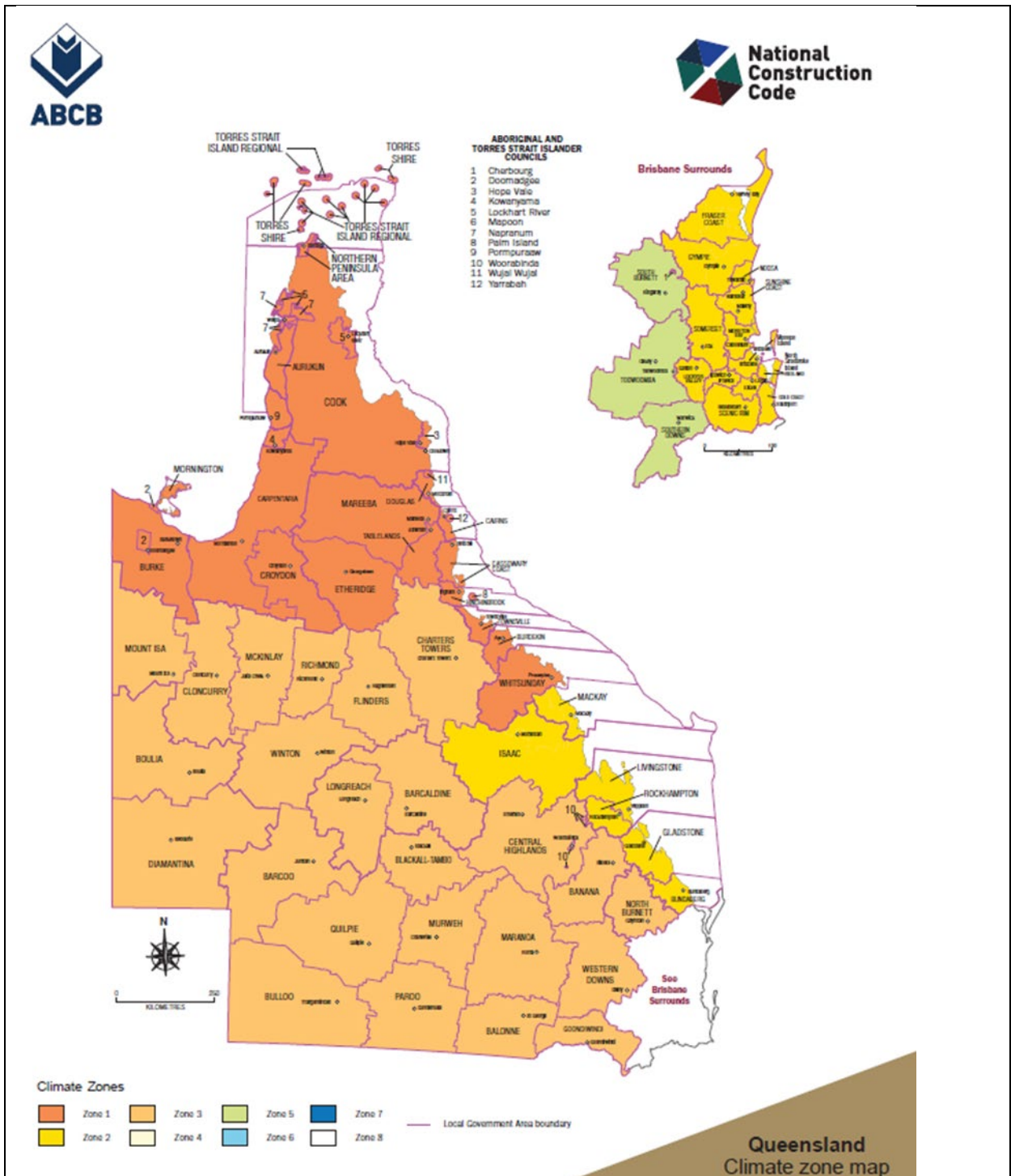
Expert: is a person who conducts an energy equivalence assessment of a house's design for its potential compliance under QDC 4.1. The expert is a person with suitable qualifications such as a specialist in building energy efficiency from a particular design field, and has extensive experience from a relevant discipline, like architectural science, building design, building physics, engineering etc.

The list of peer review experts can be found at www.business.qld.gov.au by using the search term 'Sustainable buildings and housing guidelines'.

House energy rating software: is software accredited under the Nationwide House Energy Rating Scheme (NatHERS).

Peer review application (Form 1): a written document completed by an applicant and submitted to an expert to undertake a peer review assessment of energy equivalence of a house design under QDC 4.1. The application includes building plans and any other relevant supporting documentation e.g. house energy rating software result (using BERS Pro, AccuRate, FirstRate5 or HERO). All supporting material must clearly identify reference documentation e.g. numbered floor plans and date.

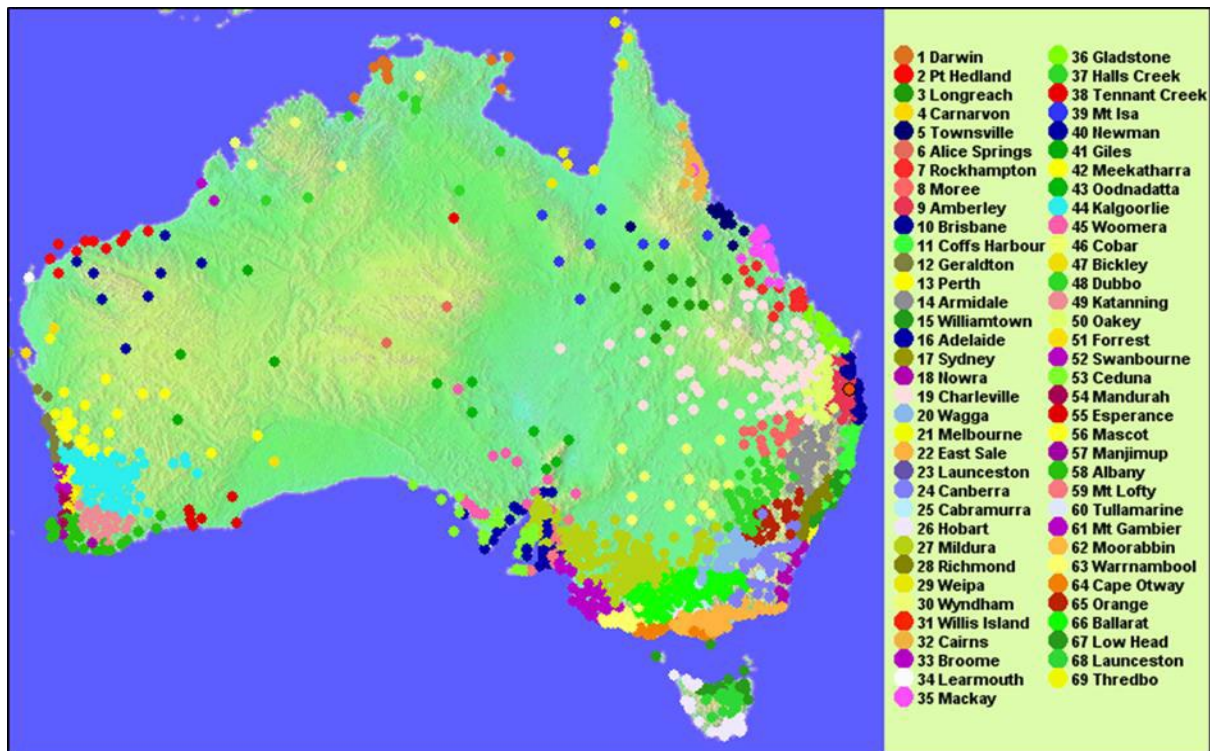
Appendix 1: Queensland's climate zones under NCC



NCC climate zone	Prevailing climatic conditions
Zone 1 – Tropical	Hot and very humid summers, with warm winters.
Zone 2 – Subtropical	Warm and humid summers, with mild winters.
Zone 3 – Hot arid	Very hot, dry summers and warm winter days and cold nights.
Zone 5 – Warm temperate	Warm summers and cold winters.

Note: Queensland does not have an area covered by NCC climate zone 4.

Appendix 2: NatHERS software climate files for Queensland




Note: Indicative map for general reference only. Locations shown should not be relied upon as the NatHERS climate file for use when undertaking a software assessment. The specific climate file in the NatHERS software is determined by the house energy assessor for the property's location.

Queensland's climate files	
NatHERS number	Location
3	Longreach
5	Townsville
7	Rockhampton
9	Amberley
10	Brisbane
19	Charleville
29	Weipa
32	Cairns
35	Mackay
36	Gladstone
39	Mount Isa
50	Oakey

Appendix 3: Form 1 – Peer review application

Form 1—Peer review application for energy equivalence					
Applicant details					
Name:					
Company name (if applicable):					
Contact phone:					
Email:					
Billing address					
Name:					
Address:					
Project details					
Property address:					
Lot and plan details (e.g. RP):					
Building description and class:					
Local government area:					
Climate zone (as defined by National Construction Code):					
Areas (metres²)					
Floor:	m ²	Ext. wall:	m ²	Roof:	m ²
Glazing:	m ²	Garage:	m ²		
House energy rating					
Software star rating:					
NatHERS software climate file number and reference location:					
Rationale for applying for peer review (e.g. design did not readily comply with NatHERS software assessment)					
Conditions eligible for expert assessment (e.g. high level of window areas, use of certain construction materials)					
Applicant's signature:				Date: / /	
OFFICE USE ONLY					
Expert's name: _____			Expert's number: _____		
Expert's peer review job reference: _____					
A copy of the current house plans and accompanying specifications, and any NatHERS software assessment or other relevant material, must be submitted with this application.					
More information					
Building Policy					
Department of Housing, Local Government, Planning and Public Works					
Email: buildingpolicy@epw.qld.gov.au					
					
June 2024 (Version 5)					

Appendix 4: Form 2 – Peer review assessment report

Form 2—Peer review assessment report for energy equivalence	
Applicant details	
Name:	
Company name (if applicable):	
Contact phone:	
Email:	
Project details	
Property address:	
Lot and plan details (e.g. RP):	
Building description and class:	
Local government area:	
Expert's signature:	Date: / /
OFFICE USE ONLY	
Expert's name: _____ Expert's number: _____	
Expert's peer review job reference number: _____	
This Assessment Report must be submitted as part of the Building Development Application if it is relied upon by a building certifier as evidence of suitability that the building's design can comply with the energy efficiency performance requirements under the Queensland Development Code MP 4.1—Sustainable buildings.	
Assessment result: SUPPORTED / NOT SUPPORTED (circle result)	
1. Description of the building and its energy efficient design features used for its thermal performance (Note: clearly identify reference documentation e.g. numbered floor plans and date).	
	
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Form 2—Peer review assessment report

2. Method of assessment used, including all qualifying and relevant factors (e.g. comparative references).

3. Justification of how building design will demonstrate compliance with the energy efficiency requirement for its thermal performance (e.g. relevant tests, specifications, rules, standards, codes of practice and other publications).

More information
Building Policy
Department of Housing, Local Government, Planning and Public Works
Email: buildingpolicy@epw.qld.gov.au

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