Building (ACT Appendix to the Building Code) Determination 2012

Disallowable Instrument DI2012—248

made under the

Building Act 2004, s 136 (2) (Building Code)

1 Name of instrument

This instrument is the *Building (ACT Appendix to the Building Code) Determination 2012*.

2 Commencement

This instrument is taken to have commenced on 1 May 2012.

3 Instrument revoked

I revoke DI2011-86 (*Building (ACT Appendix to the Building Code—2011) Determination 2011).*

4 Making of ACT appendices

Schedule 1 to this instrument is the Australian Capital Territory appendix to the Building Code of Australia published by the Australian Building Codes Board.

Note The *Building Act 2004*, s 136 (Building Code), provides that the ***building code*** means the Building Code of Australia, prepared and published by the Australian Building Codes Board, as amended from time to time by that Board, and the ACT appendix to the building code. The published building code provides that it includes its published appendices, which include Commonwealth, State and Territory additions to the building code, and that the building code commences on 1 May for each republication.

5 Disapplication of notification requirement

The *Legislation Act 2001*, section 47 (5) does not apply to this instrument.

6 Access to referenced documents

A copy of the published Australian Capital Territory Appendix to the Building Code of Australia is available for inspection by members of the public between 9am and 4.30pm on business days at the ACT Environment and Sustainable Development Directorate shopfront, Dame Pattie Menzies House, 16 Challis Street, Dickson, ACT or for download from www.abcb.gov.au.

Simon Corbell MLA
Minister for the Environment and Sustainable Development
26 November 2012

Schedule 1 to the Building (ACT Appendix to the Building Code) Determination 2012

Volume 1, section D (Access and egress), new part D3

Insert

PART D3 ACCESS FOR PEOPLE WITH A DISABILITY

Add ACT DP0 as follows, so that relevant terms have the same meaning as corresponding terms in the Disability (Access to Premises — Buildings) Standards 2010, determined under the Disability Discrimination Act 1992 (Commonwealth):

ACT DP0.1 Existing passenger lift or toilet concession

Access to passenger lifts or toilets need not be provided in accordance with provisions DP1, DP4, and DP6, insofar as they specifically only relate to people with a disability if the relevant concession in DP0.2 or DP0.3 applies.

ACT DP0.2 Lift concession

(a) The requirement in Table E3.6 (b) that a lift is to have a floor dimension of not less than 1 400 mm x 1 600 mm does not apply to an existing passenger lift that is in a new part, or an affected part, of a building, if the lift:

(i) travels more than 12 m; and

(ii) has a lift floor that is not less than 1 100 mm by 1 400 mm.

ACT DP0.3 Toilet concession

(a) The requirements in F2.4 *Accessible sanitary fixtures*, to the extent that they require compliance with AS 1428.1—2009, *Design for access and mobility,* Part 1: *General requirements for access—New building work*, do not apply to the following:

(i) existing accessible sanitary compartments;

(ii) existing sanitary compartments suitable for use by people with a disability; and

(b) The sanitary compartment mentioned in paragraph (i) or (ii):

(i) complies with AS 1428.1—2001, *Design for access and mobility,* Part 1*: General requirements for access—New building work*; and

(ii) is located in either a new part, or an affected part, of a building.

ACT DP0.4 Application to Class 1b buildings

(a) Where the BCA applies to the following kinds of Class 1b buildings, the provisions of NCC volume 1 that indicate they apply to Class 1b buildings, apply only to the following kinds of Class 1b buildings, insofar as they specifically only relate to people with a disability —

(i) a new building with 1 or more bedrooms used for rental accommodation; or

(ii) an existing building with 4 or more bedrooms used for rental accommodation; or

(iii) a building that comprises 4 or more single dwellings that are:

(A) on the same allotment; and

(B) used for short-term holiday accommodation.

Explanatory information:

ACT Part D3 mirrors the respective provisions of the Disability (Access to Premises — Buildings) Standards 2010, determined under the Disability Discrimination Act 1992 (Commonwealth). Where a provision of ACT Part D3 indicates it applies things in the NCC insofar as the things specifically only relate to people with a disability, the provision does not permit other relevant NCC to not apply.

Note:
ACT legislation other than the BCA also regulates for access and mobility.

Practitioners should ensure they check the latest version of relevant legislation, and the latest version of this appendix, available through the ACT legislation register at www.legislation.act.gov.au.

Volume 2, Clause ACT 7

substitute

ACT 7 — SUSTAINABILITY

Note:
ACT legislation other than the BCA also regulates for sustainability when constructing or altering buildings, including their services. For example, the *Water and Sewerage Act 2000* has relevant provisions about water heaters, water and sanitary plumbing, and sanitary drainage, which are intended to facilitate a reduction in water usage and energy used to heat water, and greenhouse gas emission. If there is an inconsistency between requirements for the same aspect of water heaters in the BCA and the *Water and Sewerage Act 2000*, the latter prevails to the extent of the inconsistency.

The *Building (General) Regulation 2004* has provisions about applying certain BCA provisions and alternatives to those provisions, to pre-existing parts of certain buildings, aimed at increasing the energy efficiency of the pre-existing part, amongst other things, when the pre-existing building is substantially altered or extended.

Practitioners should ensure they check the latest version of relevant legislation, and the latest version of this appendix, available through the ACT legislation register at www.legislation.act.gov.au.

ACT Part 7.1 ENERGY EFFICIENCY OF BUILDING ALTERATIONS

Application:

ACT Part 7.1 applies to work in relation to adding to or extending a completed building that can be lawfully occupied or used, where there is not otherwise a requirement to bring into BCA compliance the unaltered part of the building.

Certain substantial alterations or extensions to completed buildings can trigger a requirement under ACT law to bring the unaltered part of the building into BCA compliance. **ACT Part 7.1** does not relate to any mandatory requirements to change the otherwise unaltered part of a building, but **ACT Part 7.1** can apply to the addition or extension and to unaltered parts where permitted by this part.

The BCA's provisions generally are intended to apply to construction of entire new buildings and are not inherently intended to apply to altering or extending completed buildings. Nevertheless, ACT law requires certain alterations and additions to pre-existing buildings to be done only in a way that produces a building, or affected part, that complies with the BCA.

For the purposes of applying **ACT Part 7.1**, it is taken as providing additional BCA requirements that only apply in the case of relevant additions and alterations.

ACT 7.1.2(d) and **ACT 7.1.4(c)** prevent alterations and additions reducing the existing energy efficiency of certain buildings. Nothing in **ACT 7.1.2(d)** or **ACT 7.1.4(c)** necessarily requires an energy efficiency rating to demonstrate compliance. Compliance could be demonstrated, for example, through checking that the alteration or addition does not adversely impact on aspects of the existing building that contribute to assessment of its energy efficiency.

Note:
The ABCB publishes non-mandatory, non-regulatory information handbooks, about BCA energy efficiency provisions, which clarify that State and Territory laws apply, or vary the application of, BCA provisions to pre-existing buildings or to alterations or additions to buildings. Some jurisdictions permit hypothetical simulation of upgrading elements of pre-existing buildings to facilitate the energy efficiency of new elements in a building extension, without requiring construction to match the simulation. For example, to suppose that glazing units in a dwelling will be upgraded to comparable performance levels of new glazing units in an extension to the dwelling, in order to reduce the burden on the new glazing that arises from having to compensate for the poorer performance of the old glazing. That is not the case in the ACT, and the older glazing's actual performance must be assessed where applicable, unless a relevant law provides otherwise.

Explanatory information:

ACT Part 7.1 is intended to help make designs for house extensions comply with the intent of the BCA's main energy efficiency provisions, **P2.6.1** and **P2.6.2**. It provides a range of extra options to achieve, compliance, in addition to the BCA's options. Some of the options cannot be used in combination with others, but others can be used in combination, as explained in the respective clauses. The options are summarised below, and provide for:

- Allowing the extension to the house to be assessed using house energy rating software, rather than that software only being applicable to the whole of a house (see **ACT 7.1.2**).

- Allowing the house extension to meet the elemental provisions (insulation levels, window performance, sealing, etc) of the BCA's energy efficiency provisions, rather then the BCA's house energy rating requirements (see **ACT 7.1.3**).

- Allowing the effect of window treatments such as blinds, curtains and pelmets to be taken account of when assessing the thermal performance of pre-existing windows (see **ACT 7.1.4(a)**).

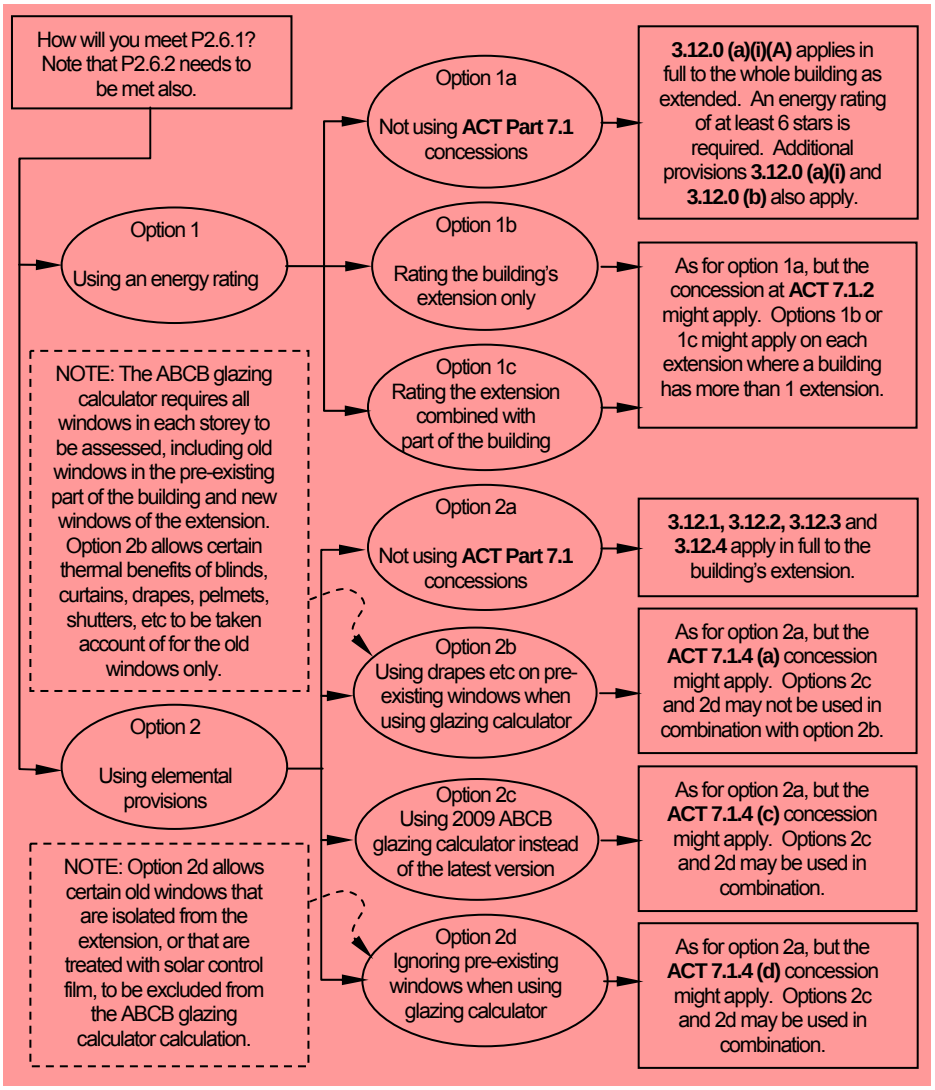
- Excluding assessment of thermal performance of a pre-existing window if it is treated with a solar control film (see **ACT 7.1.4(d)** and the dispensation under the ACT's *Building (General) Regulation 2008*, section 29 (1), which is about windows not having to comply with the BCA if they have the prescribed film applied).

- Excluding assessment of thermal performance of a pre-existing window if it is thermally isolated from windows that must be assessed (see **ACT 7.1.4(d)** and the dispensation under the ACT's *Building (General) Regulation 2008*, section 29 (2), which is about isolated windows not having to comply with the BCA if they are separated from windows that have to be assessed by prescribed walls, floors, ceilings and doors).

- Allowing the use of the ABCB 2009 glazing calculator or later to determine window thermal performance compliance where northerly glazing is impractical to provide in a house extension (see **ACT 7.1.4(c)**).

- Concessions on use of pre-existing building services, such as reuse of and sealing of ducted air conditioning and reuse of hot water services (see **ACT 7.1.6**).

This is explained in the following flow chart.


How will you meet P2.6.1? Note that P2.6.2 needs to be met also.
Option 1
Using an energy rating
Option 2
Using elemental provisions
Option 1a
Not using ACT Part 7.1 concessions
Option 1b
Rating the building's extension only
Option 1c
Rating the extension combined with part of the building
Option 2a
Not using ACT Part 7.1 concessions
Option 2b
Using drapes etc on pre-existing windows when using glazing calculator
Option 2c
Using 2009 ABCB glazing calculator instead of the latest version
Option 2d
Ignoring pre-existing windows when using glazing calculator
NOTE: The ABCB glazing calculator requires all windows in each storey to be assessed, including old windows in the pre-existing part of the building and new windows of the extension. Option 2b allows certain thermal benefits of blinds, curtains, drapes, pelmets, shutters, etc to be taken account of for the old windows only.
NOTE: Option 2d allows certain old windows that are isolated from the extension, or that are treated with solar control film, to be excluded from the ABCB glazing calculator calculation.
3.12.0 (a)(i)(A) applies in full to the whole building as extended. An energy rating of at least 6 stars is required. Additional provisions 3.12.0 (a)(i) and 3.12.0 (b) also apply.
As for option 1a, but the concession at ACT 7.1.2 might apply. Options 1b or 1c might apply on each extension where a building has more than 1 extension.
3.12.1, 3.12.2, 3.12.3 and 3.12.4 apply in full to the building's extension.
As for option 2a, but the ACT 7.1.4 (a) concession might apply. Options 2c and 2d may not be used in combination with option 2b.
As for option 2a, but the ACT 7.1.4 (c) concession might apply. Options 2c and 2d may be used in combination.
As for option 2a, but the ACT 7.1.4 (d) concession might apply. Options 2c and 2d may be used in combination.

ACT 7.1.1 Application of Part 3.12 and ACT 7

Alterations, additions and extensions to pre-existing completed buildings that would be subject to **Part 3.12** if built now, must comply with **Part 3.12** except to the extent that **ACT 7** permits otherwise. **ACT 7** provides concessions on certain aspects of **Part 3.12**. The BCA does not directly require unaltered parts of the pre-existing building to be brought into BCA compliance, but certain other requirements do. For example—

- the ACT Building Act 2004 requires certain buildings that have more than 50% of their floor area altered in a 3-year period to brought into BCA compliance, subject to concessions in the ACT Building (General) Regulation 2008;

- use of the ABCB's glazing calculator requires all relevant glazing in each storey of a building to be assessed. In the case of an extension to a pre-existing building with pre-existing windows, any new windows in the extension as well as old windows in the pre-existing part of the building need to be assessed together if they are on the same storey, subject to concessions in **ACT 7**;

- certain discretionary concessions in **ACT 7** require certain energy efficiency measures to be in place in the pre-existing part of the building to be extended, such as thermal insulation to the pre-existing roof, or window blinds, curtains, drapes pelmets or shutters to pre-existing windows.

House Energy Efficiency Rating (EER) provisions

ACT 7.1.2 Heating & cooling loads

(a) Subject to **(b)** to **(e)**, **3.12.0(a)(i)** may apply to—

(i) a whole dwelling as added to or as extended; or

(ii) a house-like addition or extension as if **3.12.0.1** expressly indicated it applied to a large part of a building and as if the rating scheme and protocol mentioned in **3.12.0.1** applied to rating large additions or extensions to buildings rather than rating a whole building.

(b) For **(a) (ii),** an addition or extension is not house-like unless—

(i) it has a contiguous floor area of at least 100 m^2 including any contiguous pre-existing floor area up to no more than 50m^2 of the unaltered part of the building, that needs to be incorporated into the rating to minimise inaccuracy due to the effect of nearby elements of the unaltered parts, and

(ii) it has at least 1 kitchen within the floor area mentioned in **(i)**; and

(iii) the floor area mentioned in **(i)** is isolated from other buildings and from the remainder of the unaltered part of the building by a draft-proof barrier such as walls, floor, ceiling and a draft-sealed door, all of which comply with **3.12.3.**

(c) If **(a)(ii)** is applied, the following must be included as part of determining the rating mentioned in **(a)(ii)**—

(i) the relevant properties of any pre-existing and unaltered roof, internal wall, or external wall that is taken as being part of the thermal envelope of the contiguous floor area of the addition or extension; and

(ii) the remainder of the unaltered part of the building must be taken as a separate building adjoining the addition or extension, if it adjoins the part of the building being rated.

(d) **ACT 7.1.2** does not apply if compliance with it would result in a building (or part thereof), as extended or altered, having its energy efficiency reduced below—

(i) the relevant statutory minimum, which is the minimum energy efficiency requirement, if any, that all or part of the building, respectively, was required to achieve when constructed or altered; or

(ii) for a building that has not been altered or extended, the current energy efficiency of the building, which is the lesser of its energy efficiency determined using the factors **Part 3.12** covers, or the energy efficiency it would be required to achieve under **Part 3.12** if it was to be built; or

(iii) for the following parts of a building—an unaltered, unextended, altered, or extended part—the energy efficiency for the part as per **(ii)** as if **(ii)** applied to the part.

(e) Dispensations in an ACT building law, however described, that may allow pre-existing elements to not comply with the BCA under a deemed-to-satisfy method must not be applied to an energy efficiency rating under **3.12.0.1** or **ACT 7.1.2**. All relevant pre-existing elements must be assessed in respect of their actual performance without dispensation.

Explanatory information:

An alternative option to the EER provisions option is to make the relevant building elements comply with the respective energy efficiency provisions. That alternative option is referred to as the 'elemental provisions'. Elemental provisions are set out at **3.12.0(a)(ii)** and at **ACT 7.1.3** to **ACT 7.1.5.**

Example for ACT 7.1.2(d):
A house constructed in 1980 was not required to be energy efficient. However, recently R 4.0 bulk thermal insulation batts were installed in the roof space. **Part 3.12** covers thermal insulation performance of roofs. **ACT 7.1.2** does not apply to removing the bulk thermal insulation for use in an extension to the house. The house was extended in 2008 (the 1st extension). The 1st extension was required to comply with BCA 2008. A proposed 2nd extension will shade northerly glazing in the 1st extension, bringing the 1st extension out of compliance with BCA 2008. Therefore, **ACT 7.1.2** does not apply to shading the window without offsetting the detrimental effect that shading would have to the 1st extension's energy efficiency even though the 1st extension does not comply with the requirements of current **Part 3.12**.

Explanatory information:

The energy rating scheme and protocol mentioned in **3.12.0.1** are intended to only apply to whole houses, not to only an addition or extension to a house, nor to part of a house that is less than the entire thermal envelope of the house. However, they can apply to attached houses to rate one or other attached house separately. Thus, they can produce reasonably reliable information about an extension to a house if the extension is comparable to adding an additional house to the pre-existing house to form 2 attached houses.

If only an addition or extension to a house is rated, the rating is not necessarily a reflection of the house's overall rating. Although area correction factors are included in relevant energy rating software, the accuracy of ratings can decrease with reduced size and number of rooms rated. Therefore, **ACT 3.12.6.2** limits use of a rating to large additions or extensions.

As the energy rating scheme mentioned in **3.12.0.1** is intended to apply to a whole building, an assessment in regulatory mode must include a kitchen zone. In order to avoid the pretence of applying false heating and cooling loads to a zone, **ACT 3.12.6.2** is limited to house additions or extensions containing a kitchen in the rated area. This can include a pre-existing or new kitchen area.

ACT 3.12.6.2 permits small parts of a pre-existing house to be incorporated into the addition or extension, to take account of draft-proof barriers that are not located at the interface between the pre-existing building and the addition or extension. The construction details of any pre-existing part incorporated into an addition or extension for rating purposes must not be assessed as having the same relevant details as the remainder of the addition or extension unless they are actually the same in both. For example, if the pre-existing part is bounded by an internal wall with no bulk thermal insulation added, that wall must not be assessed as having the same properties as the remainder of the insulated bounding walls, unless they actually have the same relevant properties, (see **Figure ACT 7.1.1**).

Figure ACT 7.1.1
Example 1—compliance with certain requirements of ACT 7.1.2(a)(ii) and (b), without incorporating floor area of a pre-existing dwelling into the relevant floor area of an addition or extension to the dwelling. This is relevant where house energy efficiency rating software is used to demonstrate compliance.

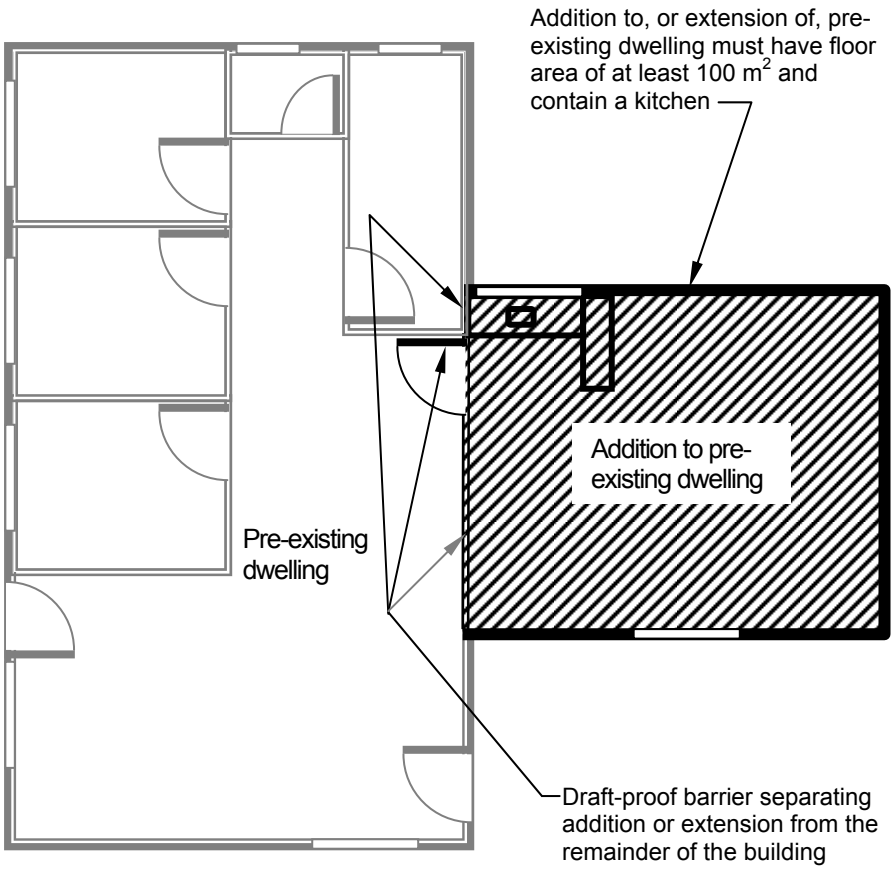
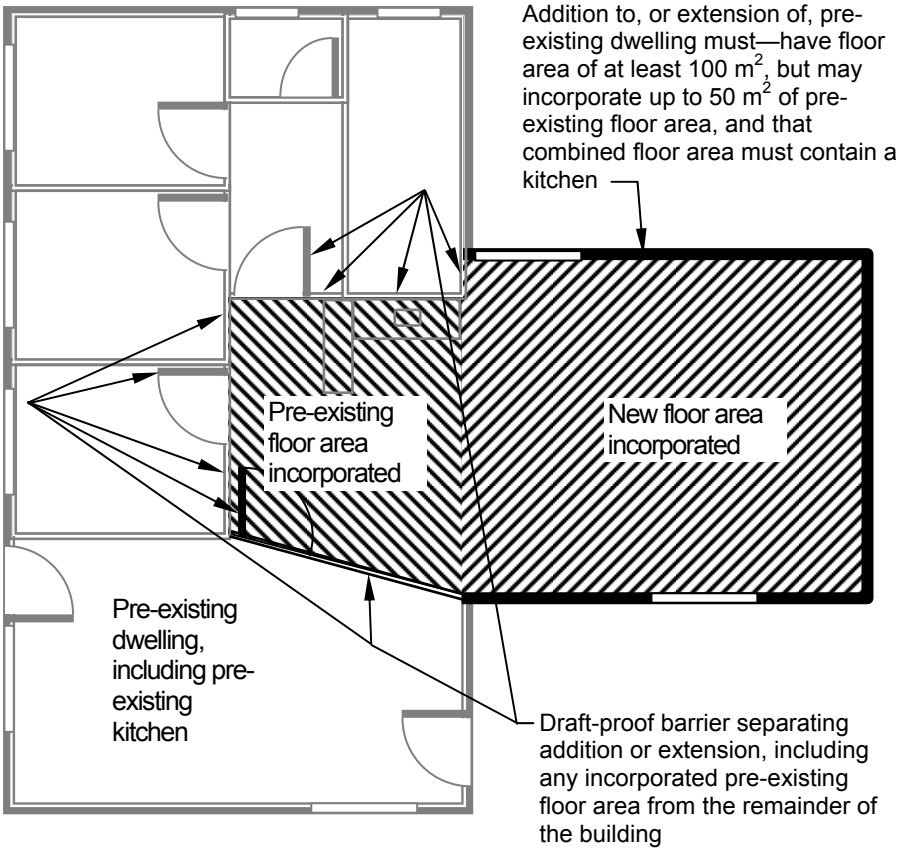


Figure ACT 7.1.1
Example 2—compliance with certain requirements of ACT 7.1.2(a)(ii) and (b), incorporating a small amount of floor area of a pre-existing dwelling into the relevant floor area of an addition or extension to the dwelling. This is relevant where house energy efficiency rating software is used to demonstrate compliance.



Elemental provisions

ACT 7.1.3 Building fabric—application of Part 3.12.1

Where **Part 3.12.1** requires building elements such as walls to have thermal insulation that forms a continuous thermal barrier, but an addition or extension opens directly, or by a common door, onto the unaltered part of building, the thermal barrier need not extend into the unaltered part of the building, except where contrary intention appears in **Part 3.12.1**.

ACT 7.1.4 External glazing—application of Part 3.12.2

(a) Subject to **(b),** in applying **Part 3.12.2** to an addition or extension all glazing on the respective storey, including the addition or extension and any pre-existing glazing in the unaltered part of the storey must be assessed where **Part 3.12.2** indicates the whole storey must be assessed. However, the *Total U-Value* of a pre-existing *glazing* unit in the unaltered part of the building can take account of any of the following—

(i) any of the kinds of the window treatments listed in **Table ACT 7.1.4.1**, to the extent provided in that table, where the *glazing* unit incorporates the respective treatment in compliance with the notes to that table;

(ii) any of the kinds of window shutters mentioned in Annex G of international standard ISO 10077-1, (Thermal performance of windows, doors and shutters — Calculation or thermal transmittance), where the *glazing* unit is readily closed in by the shutters, and the shutters can be readily opened so they do not shade the *glazing* of the unit, and the closed shutters comply with the respective construction, material and permeability provisions of that Annex G. The *Total U-Value* of the pre-existing *glazing* unit, incorporating shutters, in that case can be calculated by adding the following to the glazing unit's *Total U-Value* without shutters—

the inverse of the respective shutters' value of additional thermal resistance, ΔR, from Table G.1 (Additional thermal resistance for windows with closed shutters), of the above-mentioned Annex G.

(b) **ACT 7.1.4(a)** does not apply to windows otherwise dealt with under **(c)** or **(d)**.

(c) If an addition or alteration fails to incorporate a wall that can contain translucent glazing with an area of at least $1m^2$ or 1% of the addition's or alteration's floor area, which ever is the greater, not overshadowed by a building in winter, and orientated within the north sector shown in **Figure 3.12.2.1**, then all glazing (pre-existing or otherwise) in the storey need not comply with the requirements of **3.12.2.1** that relate to aggregate conductance of the glazing if—

(i) the addition or alteration has a total floor area not exceeding $50m^2$; and

(ii) compliance with the requirements of **3.12.2.1** that relate to aggregate conductance of the glazing would not result in a building (or part thereof), as extended or altered, having its energy efficiency reduced below—

A the relevant statutory minimum, which is the minimum energy efficiency requirement, if any, that all or part of the building, respectively, was required to achieve when constructed or altered; or

B for a building that has not been altered or extended, the current energy efficiency of the building, which is the lesser of its energy efficiency determined using the factors **Part 3.12** covers, or the energy efficiency it would be required to achieve under **Part 3.12** if it was to be built; or

C for the following parts of a building—an unaltered, unextended, altered, or extended part—the energy efficiency for the part as per **(ii)** as if **(ii)** applied to the part; and

(iii) the aggregate conductance of the glazing is in accordance with BCA requirements that applied in the ACT immediately before or anytime after the adoption of BCA 2010 in the ACT; and

(iv) bulk thermal insulation has been added to the roof of the unaltered part of the building, in accordance with the requirements of **3.12.1.2** that apply to roofs with an upper surface solar absorptance value of not more than 0.4.

(d) The **Building (General) Regulation 2008, section 29** (Unaltered parts need not comply with building code—alternative energy efficiency requirements for external glazing Act, s 29 (2) (b)) prescribes when windows with solar control film or when 'isolated glazing' need not comply with the **BCA, part 3.12.2**, in relation to a substantial alteration mentioned in the **Building Act 2004, section 29** (Approval requirements). Those alternative energy efficiency provisions may apply to pre-existing windows that **ACT 7** applies to whether or not the window is in respect of a 'substantial alteration' as defined in the **Building (General) Regulation 2008, section 23** (Substantial alteration—Act 29 (2) (a)).

Figure ACT 7.1.4
Example 1—plan showing a method of compliance with certain requirements of ACT 7.1.4(a) and (b), in assessing window energy efficiency as part of a deemed-to-satisfy alternative to using house energy efficiency rating software.

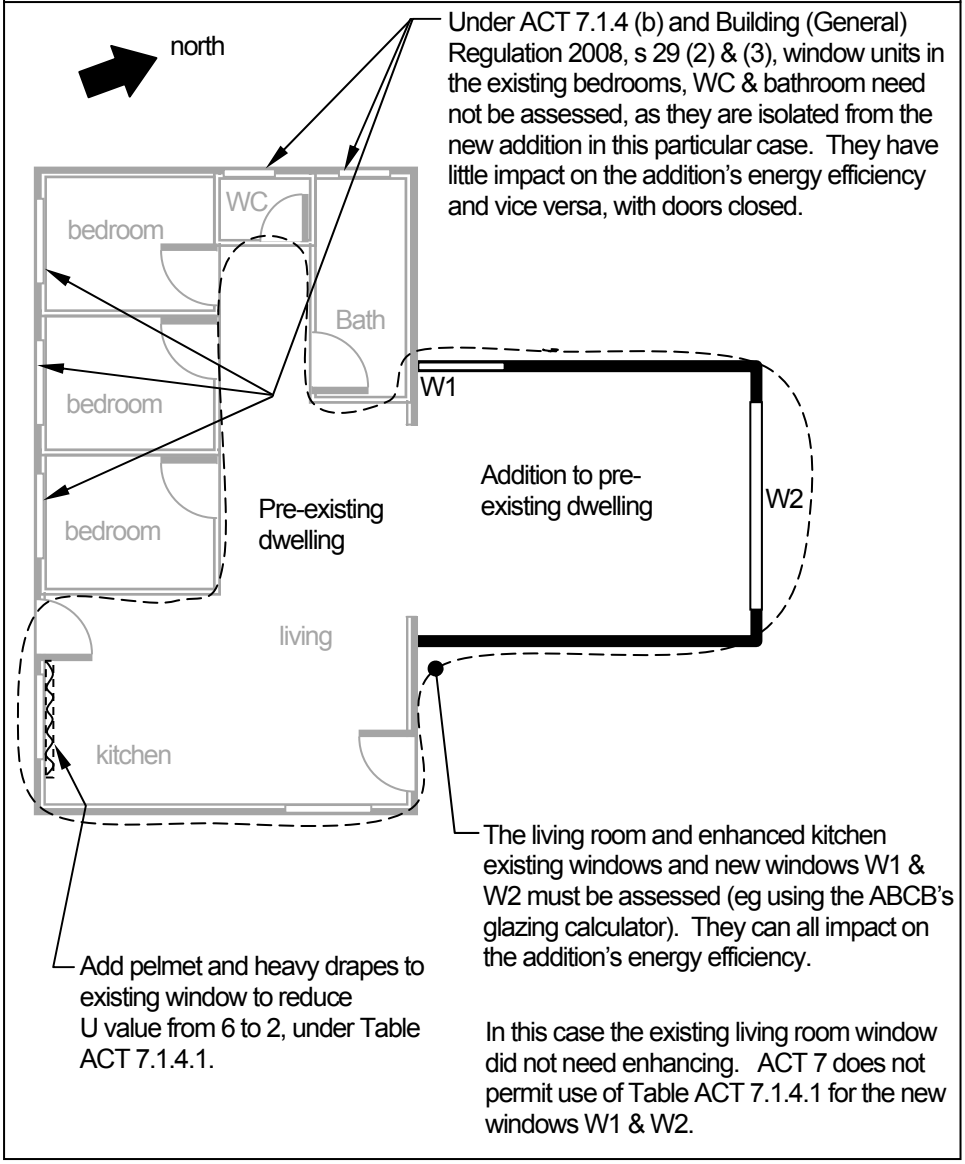


Figure ACT 7.1.4
Example 2—plan showing a method of compliance with certain requirements of ACT 7.1.4(c), in assessing window energy efficiency as part of a deemed-to-satisfy alternative to using house energy efficiency rating software, where the ABCB's 2009 glazing calculator may be used rather than the current calculator, as a concession.

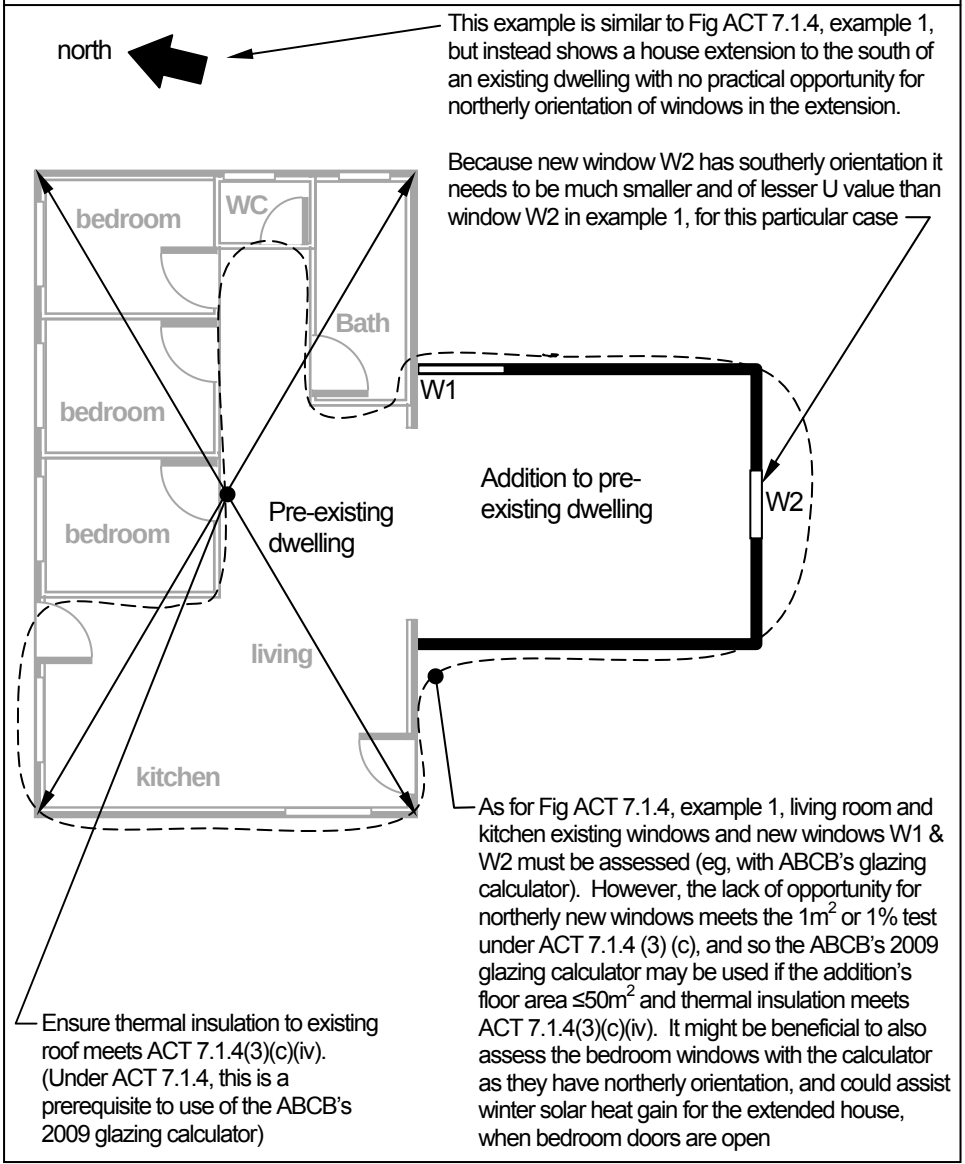


Table ACT 7.1.4.1 **Glazing unit U-Values**		**Improved U-Values with window treatments**				
		A	B	C	D	E
Glazing unit (not taking account of any window treatments)		Holland blinds only	Closed weave curtains only	Heavy drapes only	Closed weave curtains + pelmet	Heavy drapes + pelmet
U-Value	R-Value					
7.8	*0.13*	6.32	6.32	5.46	4.20	2.18
7.6	*0.13*	6.19	6.19	5.36	4.14	2.17
7.4	*0.14*	6.06	6.06	5.26	4.08	2.15
7.2	*0.14*	5.92	5.92	5.16	4.02	2.13
7.0	*0.14*	5.79	5.79	5.05	3.95	2.11
6.8	*0.15*	5.65	5.65	4.95	3.89	2.10
6.6	*0.15*	5.51	5.51	4.84	3.82	2.08
6.4	*0.16*	5.37	5.37	4.73	3.76	2.06
6.2	*0.16*	5.23	5.23	4.62	3.69	2.04
6.0	*0.17*	5.08	5.08	4.51	3.61	2.01
5.8	*0.17*	4.94	4.94	4.40	3.54	1.99
5.6	*0.18*	4.79	4.79	4.28	3.47	1.97
5.4	*0.19*	4.65	4.65	4.16	3.39	1.94
5.2	*0.19*	4.50	4.50	4.04	3.31	1.91
5.0	*0.20*	4.35	4.35	3.92	3.23	1.89
4.8	*0.21*	4.20	4.20	3.80	3.14	1.86
4.6	*0.22*	4.04	4.04	3.67	3.05	1.83
4.4	*0.23*	3.89	3.89	3.54	2.96	1.79
4.2	*0.24*	3.73	3.73	3.41	2.87	1.76
4.0	*0.25*	3.57	3.57	3.28	2.78	1.72
3.8	*0.26*	3.41	3.41	3.14	2.68	1.69
3.6	*0.28*	3.25	3.25	3.01	2.58	1.65
3.4	*0.29*	3.09	3.09	2.86	2.47	1.60
3.2	*0.31*	2.92	2.92	2.72	2.37	1.56
3.0	*0.33*	2.75	2.75	2.58	2.26	1.51
2.8	*0.36*	2.58	2.58	2.43	2.14	1.46
2.6	*0.38*	2.41	2.41	2.27	2.02	1.40
2.4	*0.42*	2.24	2.24	2.12	1.90	1.34
2.2	*0.45*	2.06	2.06	1.96	1.77	1.27
2.0	*0.50*	1.89	1.89	1.80	1.64	1.20
1.8	*0.56*	1.71	1.71	1.64	1.50	1.13
1.6	*0.63*	1.53	1.53	1.47	1.36	1.05
1.4	*0.71*	1.34	1.34	1.30	1.21	0.96
1.2	*0.83*	1.16	1.16	1.13	1.06	0.86
1.0	*1.00*	0.97	0.97	0.95	0.90	0.75
0.8	*1.25*	0.78	0.78	0.77	0.74	0.63
0.6	*1.67*	0.59	0.59	0.58	0.56	0.50

See notes to table.

Notes to Table ACT 7.1.4.1:

1. Values in the table may be interpolated to more accurately reflect U-Values.

2. Closed weave curtains have threads or yarns that generally abut, producing a fabric with negligible interstices. Thus, light, air and water pass through a closed weaved cotton fabric, but with significant filtering, unless the fabric is treated to block their passage; and they prevent visual detail being seen by eye through their fabric if woven from opaque thread or yarn. Closed weave curtains do not include open weave curtains, as open weave fabric is woven so that warp threads rarely abut each other, leaving interstices in the fabric, which includes lace, sheer or net fabrics. Open weave curtains provide negligible change to window U-values.

3. Heavy drapes permit no or negligible visible or UV light to pass through their fabric, which may include a composite of layered materials. They also do not readily allow air to pass through. They include closed weave heavy fabrics, such as velvet or velour or heavy cotton or comparable synthetics, with a rubber, acrylic, or similar, solar blocking backing layer bonded to the fabric. The presence of a light source, including the sun, cannot be detected by eye through the fabric. A key requirement of heavy drapes is to have sufficient inertia to maintain a barrier to air movement by remaining relatively stationary in a draft.

4. Drapes or curtains must fully cover the window and form part of an enclosure of the layer of air between the drape or curtain and window to minimise air movement caused by convection air currents and air movement cause by HVAC systems, fans, or use of the room. That can be achieved, as follows—

   unless the curtains or drapes are fully within and abut the window recess (reveals) and abut the reveals, head and sill, they must overlap side edges of the window by at least 150mm or abut a return wall if the window is in a re-entrant corner. Where drapes or curtains extend down to a sill, floor or floor covering to cover a window, the gap between the top of the sill, floor or floor covering and the bottom of the drape or curtain must be 10mm or less. Openable parts of the curtains or drapes must close together with no, or with negligible, gaps.

5. Pelmets must be box pelmets and must work in combination with the curtain or drape to enclose the top of a curtain or drape to prevent air plunging by convection from beside or above the pelmet to the window, and must extend to the width of the window plus any required curtain overlap of the window edge. It must overlap the top of the curtain by 50mm or more.

ACT 7.1.5 Building sealing—application of Part 3.12.3

(a) In applying **Part 3.12.3** to an addition or extension all requirements of the part must be satisfied except as provided otherwise in **(b)** or **(c)** below.

(b) If the addition or extension houses an evaporative cooler to which **3.12.3.6** applies, the cooler must comply with **3.12.3.6** unless—

(i) the cooler has been relocated from the pre-existing part of the building as part of constructing the addition or extension; and

(ii) the cooler was not required to meet a provision like **3.12.3.6** when it was previously installed in the pre-existing part of the building; and

(iii) the cooler does not have a self-closing damper or the like; and

(iv) all the cooler's outlets serving a heated space or a *habitable room*, in the addition or extension, have an automatic means, or a readily accessible manual means, of closing the outlet or the duct serving the outlet, such as a closable baffle or closable louvers on an outlet register. For this provision, an outlet with a manual means of closure is readily accessible if it is mounted in the ceiling of a room, and can be closed by a reasonable person standing on a step ladder and activating a baffle closer or by closing movable louvers or the like, by hand without a tool.

(c) If the addition or extension contains a heated space or *habitable room* to which **3.12.3.6** applies, that is served by an evaporative cooler, the cooler must comply with **3.12.3.6** unless—

(i) the cooler served, and continues to serve, the pre-existing part of the building; and

(ii) the cooler was not required to meet a provision like **3.12.3.6** when it was previously installed in the pre-existing part of the building; and

(iii) the cooler does not have a self-closing damper or the like; and

(iv) all the cooler's outlets serving a heated space or a *habitable room* in the addition or extension have an automatic means, or readily accessible manual means, of closing the outlet, or the duct serving the outlet, such as a closable baffle or closable louvers on an outlet register. For this provision, an outlet with a manual means of closure is readily accessible if it is mounted in the ceiling of a room, and can be closed by a reasonable person standing on a step ladder and activating a baffle closer or by closing movable louvers or the like, by hand without a tool.

Building services provisions

ACT 7.1.6 Services—application of Part 3.12.5

(a) In applying **Part 3.12.5** to an addition or extension all requirements of the part must be satisfied except as provided otherwise in **(b)** or **(c)** below.

(b) If the addition or extension houses or has mounted on it or in association with it, a heater or pump to which **3.12.5.4, 3.12.5.6** or **3.12.5.7** applies, the heater or pump must comply with those provisions unless—

(i) the service is a heater or pump that has been relocated from the pre-existing part of the building as part of constructing the addition or extension; and

(ii) the heater or pump was not required to meet a provision like **3.12.5.4, 3.12.5.6** or **3.12.5.7** when it was previously installed in the pre-existing part of the building; and

(iii) the heater or pump does not comply with **3.12.5.4, 3.12.5.6** or **3.12.5.7**, and

(iv) where the heater or pump serves the addition or extension through a hot water supply system, piping, or duct to which **Part 3.12.5** applies, the portion of the system, piping or duct that is within, or mounted on or in association with, the addition or extension complies with that part.

(c) If the addition or extension is served by a heater or pump to which **3.12.5.4, 3.12.5.6** or **3.12.5.7** applies, the heater or pump must comply with those provisions unless—

(i) the heater or pump served, and continues to serve, the pre-existing part of the building; and

(ii) the heater or pump was not required to meet a provision like **3.12.5.4** when it was previously installed in the pre-existing part of the building; and

(iii) the heater or pump does not comply with **3.12.5.4, 3.12.5.6** or **3.12.5.7**; and

(iv) where the heater or pump serves the addition or extension through a hot water supply system, piping, or duct to which **Part 3.12.5** applies, the portion of the system, piping or duct that is within, or mounted on or in association with, the addition or extension complies with that part.

Explanatory information:

Example for **ACT 7.1.6**.

A house has a pre-existing evaporative air conditioner, ducted gas central space heater, electric resistance storage water heater, and electric lighting. The house is to be extended by adding a new bedroom with en-suit bathroom, and a small section of hallway. The extension must comply fully with Part 3.12.5, except that the following approach to the use of concessions under ACT 7 could apply.

A new duct will be run from the nearest pre-existing air conditioner duct to an outlet in the new bedroom. When the pre-existing air conditioner was installed in 2003 it was not required to have a self-closing damper or the like, and it does not have one. Such a damper or the like does not need to be provided as otherwise required by **3.12.3.6**, because of **ACT 7.1.5(b).** The new outlet in the bedroom will be mounted in the ceiling. To comply with **ACT 7.1.5(b),** the new outlet of the air conditioner duct will have an outlet register with manually closable baffle that is actuated by turning a knob on the register outlet while standing on a step ladder. When the space heating is operating, heat loss from hot air rising up through the register and out to the atmosphere through the air conditioner can be reduced by closing the register baffle. The extent of the new duct that is contained within the extension will have to comply with **3.12.5.3**, which is about insulation and sealing of heating and cooling ducts. That will reduce efficiency losses as cooled air travels along the new duct.

The new en-suit's shower and hand basin will be serviced with hot water from new piping connected to the nearest pre-existing hot water piping from the pre-existing water heater. **ACT 7.1.6** permits the pre-existing water heater to be used to serve the extension even if the water heater fails to comply with **3.12.5.6**, which is about energy source of water heaters and other matters. However, the portions of the new piping that are within the extension must comply with **3.12.5.0(a)**, which covers insulation of piping. That will reduce efficiency losses from hot water in the pipe losing heat.

Artificial lighting of a new hallway will rely on light from a pre-existing light fitting located in the pre-existing part of the house. Because of **ACT 7.1.6(b),** artificial lighting of the new hallway does not have to comply with **3.12.5.5,** which includes limitations of the power density of lamps or illumination. However, new artificial lights in the form of electric light fittings in the new bedroom and new en-suit must comply with **3.12.5.5** insofar as it applies to the new extension, other than the new hallway.