



## NCC PUBLIC COMMENT DRAFT RESPONSE SHEET

### HOW TO COMPLETE THE RESPONSE SHEET

1. Provide your details, including name, organisation and contact details.
2. Select the relevant NCC Volume(s) that your comments relate to.
3. For each comment, you should—
  - specify the specific “**Clause/Figure/Table**” that you are commenting on, e.g. J6.2(a)(i), Figure 3.7.1.9 or Table BV2.3;
  - specify your “**recommended change to draft**”, e.g. it is recommended that the proposed drafting to J6.2(a)(i) be amended as follows... (*see example*).  
If you don't recommend a change, your comment may be noted with no change made to the drafts;
  - specify your “**comments/reasons for change**”. This should include justification to support your recommended change, e.g. it is recommended the exemption for heaters that emit light be removed as these heaters have already been exempted by J6.2(c)(iv) (*see example*).
  - list your “**recommended changes**” or “**comments/reasons**” using bullets or a numbered list, if you are recommending multiple changes or comments/reasons.

*NOTE: Please complete all relevant fields to allow consideration by the relevant technical building or plumbing committee.*

### EXAMPLE

**Clause/Figure/Table:** J6.2(a)(i)

**Recommended change to draft:**

It is recommended that J6.2(a)(i) be amended as follows—

- (a) In a *sole-occupancy unit* of a Class 2 building or a Class 4 part of a building—
  - (i) the *lamp power density* or *illumination power density* of artificial lighting, ~~excluding heaters that emit light,~~ must not exceed the allowance of—
    - (A)  $5 \text{ W/m}^2$  -within ~~the building~~ a sole-occupancy unit; and
    - (B)  $4 \text{ W/m}^2$  on a verandah, balcony or the like attached to ~~of the building~~ a sole-occupancy unit; and

**Comment/reason for change:**

It is recommended that—

1. the exemption for heaters that emit light be removed as these heaters have already exempted by J6.2(c)(iv); and
2. references to “the building” be replaced with “a sole-occupancy unit” to clarify that the provisions only apply to sole-occupancy units and attached verandahs, balconies or the like, and not the entire building.



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### RESPONDENT'S DETAILS

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### RELEVANT NCC VOLUME(S)

NCC Volume One

NCC Volume Two

NCC Volume Three

### COMMENTS

**Clause/Figure/Table:** SPECIFICATION JV2 2.(a) (iv) and its associated citations in ABBREVIATIONS AND SYMBOLS and in LIST OF AMENDMENTS

**Recommended change to draft:** delete the text (iv) the IWEC2 weather files; and Substitute the text (iv) validated climatically indicative weather files appropriate to the site (e.g. Reference Meteorological Years as used in the NatHERS softwares selected in accordance with the PostCode of the site); and

**Comment/reason for change:**

1. The methodology should be consistent with NatHERS software calculations (the Reference Meteorological Years are built into the software and are automatically called up according to the PostCode of the proposed site).  
Draft NCC Volume Two, page 9  
Explanatory information:  
The Nationwide House Energy Rating Scheme (NatHERS) refers to the Australian governments' scheme that facilitates consistent energy ratings from software tools which are used to assess the potential thermal efficiency of dwelling envelopes.
2. The methodology should be consistent with Volume Two  
V2.6.2.1 (a) (iii) climatic data employed in the calculation method must be based on hourly recorded values and be representative of a typical year for the proposed location.
3. The use of IWEC2 files is apparently not validated nor calibrated. Cundall's Modelling Assessment Report used the NatHERS files, not the IWEC2 files mandated in the draft: indeed it does not mention IWEC2. See Cundall report section 5.4 Appendix 4 – The Weather Files
4. Mandating the IWEC2 files requires Australian firms to purchase Australian weather data from an American source (USD150 for all their Australian sites). The American source is nominally ASHRAE but the web diverts to the private entity White Box Technologies for actual purchasing.
5. Despite boasting 103 sites including Heard Island and Macquarie Island, the IWEC2 offering is geographically deficient relative to the 69 NatHERS sites for building energy simulation purposes (see 10. below).
6. The 69 NatHERS weather files have been made available without charge by the Department of Industry and Science in several formats for the expressed purpose of their use in non-NatHERS energy simulations and were accessed by Cundall for their Modelling Assessment Report. The Cundall report cites the



timing convention of the mandated internal loads TABLE V2.6.2.1b “*The loads shown are for the one hour period up to the time stated, i.e. a time of 1:00 am indicates that period between midnight and 1:00 am.*” However, it makes no mention of the timing error for the solar loads of the NatHERS weather files where the values in the EPW format are numerically the same as in the ACDB format despite the EPW convention being the solar irradiation up to the hour while the ACDB convention is the 30 minutes either side of the hour.

7. The IWEC2 files are not known to have been validated by any Australian peers or others with local knowledge. Errors likely to be incorporated by foreign data processors include unexecuted wind data substitutions – e.g. the NatHERS weather file for Melbourne includes wind data from the nearby Laverton RAAF Base due to the unindicativeness of the wind data from the Bureau of Meteorology Automatic Weather Station (AWS) in Melbourne as it was progressively impacted by tall buildings erected nearby (the AWS site has recently been relocated to the sports precinct for that very reason).
  8. The IWEC2 files are not known to have alternative weightings for the generation of Typical Meteorological Years. The NatHERS data sets have weightings A, B and C available to suit the nature of the building to be simulated (A for Skin Load Dominated buildings like residences and daylit offices and C for Internal Load Dominated (deep plan) buildings like large floor plate offices).
  9. In addition to the 69 NatHERS sites, Reference Meteorological Year data sets are commercially available for 100 and 200 Australian sites with A, B and C weightings in the Sandia Method of data processing based on the full 25 year period 1990-2014 inclusive. (see <http://members.ozemail.com.au/~acadsbsg>). The IWEC2 data set is dated 2012.
  10. Notable omissions from the IWEC2 data set include:
    - Brisbane metro area: Amberly (western half of Brisbane)
    - Sydney metro area: Observatory Hill (CBD and oldest Australian weather station); Parramatta
    - Melbourne metro area: Moorabbin Aero; Coldstream (Dandenongs)
    - Adelaide metro area: Mt Lofty (Adelaide Hills)
    - Perth metro area: Swanbourne (Fremantle); Bickley (East Perth); Mandurah (south coastal Perth)
    - Launceston: Ti-Tree Bend (Launceston in toto – Launceston AP (IWEC2) is on the windswept plateau (mostly used for TAS midlands) while the city is nestled into a sheltered fog-prone estuarine valley with inversion layers common)
    - Albury Wodonga (NSW/VIC)
    - Alpine (Cabramurra, Thredbo NSW/VIC); Sub-Alpine (Cooma Airport)
    - Atherton QLD (markedly cooler than nearby Carins)
    - Dubbo (NSW)
    - Katherine (NT)
    - Kununnurra WA (well inland from coastal Wyndham)
    - Maleny (QLD)
    - Tennant Creek (NT)
    - Toowoomba (QLD)
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