BER Assessors – Dwellings Technical Bulletin

Issue No. 3/09 May '09

Contents:

The archive of previous bulletins is available under
http://www.sei.ie/Your_Building/BER/BER_FAQ/FAQ_BER/Assessors/SEI_BER_Reports.html

DEAP Software 3.0.1

DEAP V3.0.1 is now available on the SEI website under
http://www.sei.ie/Your_Building/EPBD/DEAP/Download/ .
The download folder contains installation instructions and release notes detailing all changes made from the previous software release. These changes to the software are minor in nature and the same DEAP methodology rules (and same DEAP manual) apply. The main functional addition to DEAP V3.0.1 is that there is now a "heating controls lookup" available under the "Distribution System Losses and Gains" tab in the software to assist Assessors in use of Table 4 of the DEAP manual.

N.B. when installing DEAP V3.0.1, please uninstall DEAP V3.0.0 first using the program removal utility under "Control Panel". This is detailed on page 2 of the release notes in the download folder.
When installing DEAP V3.0.1 ensure you click on the "setup.exe" icon in the downloaded folder.

The National Administration System (NAS) will accept BER assessments from DEAP V3.0.0 and DEAP V3.0.1 until 22nd June 2009. After 22nd June the NAS will only accept BER assessments from DEAP V3.0.1

When do I specify the dwelling as being an "existing" dwelling in DEAP?

An existing dwelling is a dwelling which has previously been sold and/or occupied. Dwellings which have not previously been sold or occupied are to be specified as new dwellings in DEAP.

Note that a new dwelling (i.e. a dwelling that has never been sold or occupied) is exempt from the BER requirement if it had been the subject of a planning application submitted on or before 31 December 2006 and if it was substantially completed by 30 June 2008.

Gas flue fans – further information

As further information to the guidance on "gas flue fans" in the March technical bulletin under
http://www.sei.ie/Your_Building/BER/BER_FAQ/FAQ_BER/Assessors/BER_Technical_Bulletin.pdf (page 2):
The gas boiler flue fan is included in the DEAP calculation when it is situated at the air intake or exhaust gas outlet of the gas boiler.

Inadequate heating systems

Where some or all rooms in a dwelling are unheated, the BER Assessor must follow guidance in Section A3 of the DEAP manual (page 41). This provides a detailed method to help specify the main heating and secondary heating system in this scenario. The following example is based on the guidance in the DEAP manual:

A house with 5 habitable rooms has a fireplace heating the living room only. There is no other space heating system present. As the open fire heats less than 25% of the habitable rooms in the dwelling, then the main space heating system is assumed to be "direct electric heating" with the open fire as the secondary space heating system.

Where there is no water heating system present, please follow the guidance in the March technical bulletin http://www.sei.ie/Your_Building/BER/BER_FAQ/FAQ_BER/Assessors/BER_Technical_Bulletin.pdf (page 3).

Elements adjacent to unheated or thermally separated spaces

Where parts of a dwelling are excluded from a BER assessment subject to the guidance in Section 1 of the DEAP manual then the building elements between the dwelling and the thermally separated space are treated as follows:

Windows between the dwelling and unheated/thermally separated conservatories:
Windows between the dwelling and unheated/separated conservatories which are being excluded from the assessment should be treated as if conservatory is not there. The solar transmittance and U-value of these windows should not be adjusted. Walls and doors between the dwelling and the excluded conservatory can still have an 'Ru' adjustment value applied. Guidance defining when a conservatory should be excluded from the assessment is given in Section 1 of the DEAP manual.

Building elements between the dwelling and other unheated/thermally separated spaces (such as garages, stores, porches, corridors):
For walls in existing dwellings, the "semi exposed" option in DEAP allows an 'Ru' adjustment value to be automatically applied by DEAP. For new dwellings, 'Ru' can be taken from Appendix A of Building Regulations 2008 TGD L - available under http://www.environ.ie/en/TGD/ .
In this case, windows between the dwelling and the unheated space should be entered under "walls" rather than "windows" as the light and solar transmittance is low through these windows. In an existing dwelling, when entering these windows under "walls" select "semi exposed" to apply the appropriate 'Ru' adjustment. Default U-values for these windows are taken from Table 6a in the DEAP manual.

Note that excluded conservatories, garages, porches can still provide a sheltered side or part thereof in relation to the ventilation heat loss section of DEAP (as outlined in section 2.5 of the DEAP manual).

Also note the following text from the DEAP manual section 3.3.3:
"for dwellings to which the Building Regulations 2008 TGD L applies, an attached conservatory is always considered as an integral part of the habitable area of the dwelling. In all other cases (i.e. existing dwellings or dwellings to which Building Regulations 2008 TGD L do not apply), an attached conservatory may be treated as an unheated space if it is thermally separated from the main dwelling."

Amendment to room in roof FAQ

The room in roof FAQ has been amended with the following text:
"For single storey apartments which are entirely within the roof, the room in roof approximation should not be used."

In other words, an "attic apartment" in the top storey of an apartment block would not be specified using the room in roof approximation in DEAP.

The FAQ is available under
http://www.sei.ie/Your_Building/BER/BER_FAQ/FAQ_DEAP/Building_Elements/How_do_I_enter_a_"room_in_roof"_in_DEAP_.html

Default window U-values in existing dwellings

As stated in Section S8 of the DEAP manual:
"If the surveyor is unable to determine whether double glazing is "Low E" or not, it can be assumed that double glazing installed before 2004 is not Low E and then refer to the associated value in Table S9. Any other U-value and solar transmittance from Table 6a/b may be chosen provided supporting evidence is available."

In other words, if a BER Assessor is unable to determine the glazing type, gas fill or gap between panes for double glazing windows in an existing house, then the following defaults can be used for the windows:
Installed before 2004:
Glass is uncoated, with 6mm air filled gap. Metal framed window default thermal break is 4mm. The same parameters (uncoated, 6mm air filled gap) can be assumed for pre 2004 triple glazed windows.
Installed during or after 2004:
Glass is hard coated with $\varepsilon n = 0.15$. 12mm air filled gap. Metal framed window default thermal break is 4mm. The same parameters can be assumed for triple glazed windows installed during or after 2004.

For example:

- If double glazed windows were installed in 2002 with a PVC frame, and no details are available with regard to glass coating, gas fill etc., then the U-value should be defaulted to 3.1
- If double glazed windows were installed in 2004 with a PVC frame, and no details are available with regard to glass coating, gas fill etc., then the U-value should be defaulted to 2.2.

Time and temperature zone controls

In order for a system to be specified with time and temperature zone control, it must be possible to program the heating times of at least two heating zones independently, as well as having independent temperature controls. These two heating zones must be **space** heating zones.

If there are more than two space heating zones in the dwelling, these should have a similar level of control, i.e. independent time and temperature control.

Programmers

A programmer may be specified in the following cases:

- Where the main space heating system also heats water (such as a boiler heating radiators and hot water cylinder coil) and there is time control of main space and water heating.
- Where the main space heating system does not heat water (such as a boiler heating radiators only) and there is time control of main space heating.

Intermittent fans and passive vents

As part of the survey carried out on site for existing dwellings, assessors need to ensure that intermittent fans and passive vents which are counted inside the dwelling are not permanently blocked up. Vents which are permanently blocked are not included in the DEAP assessment.

Low energy lighting

Where one or more fixed lights (including light bulbs, fluorescent tubes, light sockets) are controlled by a single switch, each must be counted when calculating the % of low energy lighting. Portable lighting is not included in this count.

As an example, a house has the following lighting:

- 15 single fixed light bulbs (all low energy CFL bulbs)
- A single central fitting (controlled by a single switch) containing 3 standard incandescent bulbs
- 2 fixed fluorescent tubes
- 5 portable bedside lamps

The total number of lights included in the lighting count in DEAP is 15 + 3 + 2 = 20.
Note that the portable bedside lamps are not included.

Of the total number of fixed lights, 17 are low energy. This includes 15 fixed CFLs and 2 fluorescent tubes.

The low energy lighting percentage entered into DEAP is 17/20 = 85%

Solar water heating – entry into DEAP

When entering solar thermal collectors for water heating into DEAP, the calculation in the software based on Appendix H in the DEAP manual must be used. Alternative data (such as a year's worth of on-site energy yield data) will not be accepted.
Go to the "water heating" tab in DEAP and answer "yes" to the question "is there a solar water heating system?" Then select "enter solar water heating". Enter the parameters for the solar water heating. Once completed, this tab calculates the yield of hot water for the year from the solar water heating system. This energy yield is subtracted from the water heating requirement for the dwelling and hence reduces the water heating requirement of the water heating system. Note that the parameters defining the solar panel performance such as Zero-loss Collector Efficiency, Linear Heat Loss Coefficient and Aperture Area can be taken from the HARP database, Certified data, or Table H1 in the DEAP manual.

Mechanical ventilation – use on non default fan powers and efficiencies

When entering whole house mechanical ventilation systems (such as heat recovery) into DEAP, the default specific fan power and efficiency in DEAP can be overridden using data from SAP Appendix Q website under
http://www.sap-appendixq.org.uk/search.jsp
This is detailed in the following presentation:
http://www.sei.ie/uploadedfiles/InfoCentre/BER/Treatment_of_Mechanical_Ventilation_in_DEAP(2).PPT

Survey Form – heat loss table

All heat loss areas must be clearly shown on the DEAP Survey Form. This is done by recording each building element area in the heat loss table on the DEAP Survey Form. Alternatively this can be detailed through dimensioned sketches, clearly showing all heat loss elements, opening areas (e.g. windows and doors) and room heights.
As communicated in the April BER Assessors Technical Bulletin, the DEAP Survey Form (or an equivalent Survey Form containing the same information) must be used on site to gather survey data required to complete a BER assessment for an existing dwelling using the DEAP software and must be retained as supporting evidence.
The standard survey form is available under
http://www.sei.ie/Your_Building/BER/BER_Assessors/Technical/DEAP/DEAP_2008/ .