

Building Regulations Part L compliance

BER community much more than energy assessors

The Energy Performance of Building Directive was enacted in 2002, which when transposed into Irish law, instigated the role of Building Energy Rating (BER) Assessor. Here, Stephen McGovern (right), Cork Energy Consultancy and Chair of the BER Assessors' Association, reveals just how essential BER assessors are to the energy, carbon and sustainability goals set by the Irish Government.



The role of the BER Assessor has evolved significantly over the years and can now generally be broken down into the following responsibilities:

- Production of BER/DEC certificates required for all properties advertised for lease and sale;
- Production of certification to allow grant payment under several schemes, most commonly for SEAI-funded grant programmes such as individual and one-stop-shop energy upgrades;
- Demonstration of compliance with Building Regulations Part L (Conservation of Energy);
- Providing advice on how to comply with Part L of the Building Regulations;
- Providing advice on how to upgrade buildings to maximise energy efficiency in cost-optimal ways;
- Verifying that upgrades carried out by clients achieve the benchmarks set for "green loans".

The main qualification requirements to become a Domestic BER Assessor is an NFQ Level 6 in a relevant construction field and completion of a QQI-approved Domestic BER training course.

When insurance and tax clearance are in place, this leads to an official registration and access to NAS (National Administration System) which allows the publication of BER/DEC certificates and Part L Dwelling Reports to demonstrate compliance.

The process for becoming a Non-Domestic BER Assessor is similar. An NFQ Level 7 degree is required initially, with other routes accepted if equivalence can be proven. A course is not mandatory but is recommended. There are a number of private companies providing these officially-sanctioned SEAI training courses.

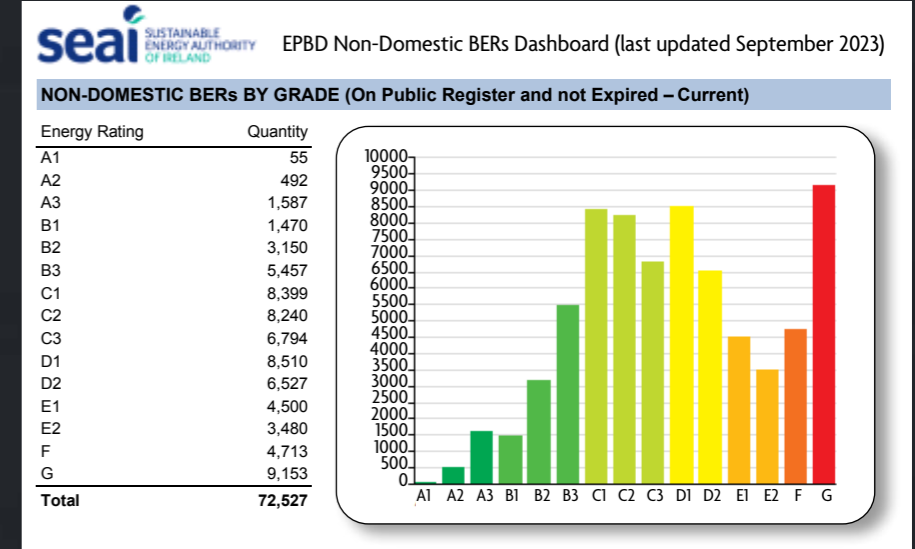
The tools used by assessors are primarily the calculation methodologies DEAP and NEAP. These are the national calculation methodologies permissible in Ireland. Using these, the assessor can calculate and demonstrate the energy performance of buildings as required. There are also more advanced dynamic simulation tools such as IES-VE that can be used alongside DEAP and NEAP. These are mainly used in the modelling of large commercial buildings.

Both methodologies attempt to calculate the energy performance of buildings for space heating, water heating, lighting and ventilation. In non-domestic buildings, energy for pump, fans and lighting controls are also calculated under the term of "Auxiliary Energy".

Energy losses are then taken account of through the calculation of building fabric and ventilation losses. The resultant calculation is presented as a measure of energy usage in kWhr per m² per annum. In the case of a domestic BER, this is presented on a scale from A to G with A1 rating signifying an in-use energy usage of between 0 and 25 kWhrs/m²/year, A2 being 25-50 kWhrs/m²/year and so on.

The output for non-domestic buildings is different. The calculation of the energy performance is more complex as it is necessary to use activity profiles to calculate the energy performance of, for example, an office building which has a very different usage profile than that of a warehouse storage facility. The software creates two models, one of the notional building and a second, a reference building that is set out in Part L as a building of a certain design, age and type. The ratio between these is the method which underlies how the alphabetical scale is derived.

This procedure of creating two buildings



– one that the BER assessor is modelling and one, a reference model – is also the basis used by the software to demonstrate Building Regulations' compliance in both methodologies.

As each iteration of the Building Regulations was introduced over the past 20 years, this simple ratio between the notional and the reference buildings was updated in order to reflect the updated requirement. These ratios, which are applied to energy usage as well as the carbon intensity, are called the Energy Performance Coefficient (EPC) and the Carbon Performance Coefficient (CPC).

In the current iteration of Domestic Building Regulations Part L 2019 (updated 2021), the EPC is 0.3 and the CPC is 0.35. This states that a building today must be 70% more energy efficient than a building of similar design would have been required to be in 2005, and 65% better from a carbon efficiency perspective than a compliant one constructed in 2005.

Since the initial roll-out of the first SEAI energy upgrade grants, BER certification has had a key role in the process. The BER process has been used to demonstrate the energy saving of funded measures, as well as acting as a check that specified works were carried out to the standard required by the granting authority.

Although never intended as a design tool, that is in fact what DEAP has become, particularly in the roll-out of heat pumps. Low temperature systems, such as the very popular air source heat pumps, require that the design heat and ventilation loss of the building be kept to a minimum.

The DEAP software calculates a total HLI

figure on this loss, both by loss through the fabric and unintended air permeability (HLI = Heat Loss Indicator). A BER Assessor must demonstrate that this indicator has been achieved in the proposed or current design for the building fabric. If it is calculated that it is not achieved, then he/she will list a number of cost-optimal measures that will improve the building's energy performance to reach this target. The assessor will again have to verify this and produce a post-completion BER certificate that demonstrates the achievement of design performance.

Where designers and assessors often come into contact is with regard to the demonstration of installed fabric upgrades and the certification of systems, and the process of declaring systems and fabric build ups. The burden of proof for this certification is onerous and exacting. All these processes are subject to strict auditing by the BER issuing authority, SEAI.

As I write, the latest iteration of the EPBD has just been signed into European law and will be translated into Irish law in the coming months. The changes which will be made by this new set of regulations will have enormous impact on the role of the assessor. The introduction of the long-mooted Building Renovation Passport is likely to be closely aligned to the work of the BER Assessor. The expected increase in standards will be certified by DEAP and NEAP, and the introduction of declared embodied carbon figures in building stock is a role that will likely be taken up by the existing BER Assessor community.

For further information visit <https://berassessors.com/>