



Passive house: an alternative method of meeting Part L?

*As many Passive House Plus readers are aware, one of the great riddles of sustainable building in Ireland is that it's possible to make a building too energy efficient to meet our energy efficiency regulations – or more specifically to meet the guidance document associated with that regulation. But targets set out in guidance documents are not legally binding, argues **Philip Lee**, an expert in energy law, meaning there may be room for proven low energy building approaches such as the passive house standard – with a few caveats to satisfy aspects of Part L – to be accepted as alternative methods of compliance.*

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The recent green paper on energy policy in Ireland, published in May 2014, suggests that Ireland reaching the EU target of a 20% reduction in energy use by 2020 will deliver collective societal savings valued at €2.36 billion.

As part of this economic and environmental drive, the Building (Part L Amendment) Regulations 2011 aim to achieve 60% aggregate improvements over the 2005 standards in both the energy performance and associated carbon emissions of new dwellings from 1 December 2011. Given that residential energy represents over a quarter of final energy use, the framework underpinning these targets has massive potential for Ireland.

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Part L plays a fundamental role in addressing climate change by setting out a methodology for achieving these targets. It does this by providing a balance of reducing energy demands by implementation of energy saving measures on the one hand, while at the same time increasing the use of renewables.

A key question is how Part L can be satisfied in practice. Although already in place for six years (*Ed. – former environment minister John Gormley introduced 40% energy & carbon reductions and mandatory renewable energy systems in 2008*) Part L obligations and how they may be achieved remains somewhat abstruse, particularly when it comes to the role of renewable energy. Many ambiguities remain in respect of alternative methods of compliance to what is set out in the Part L technical guidance document. This applies most saliently in the case of houses which are designed to the passive house standard, where the sorts of specifications that result may differ from those of buildings where SEAI's Dwelling Energy Assessment Procedure (DEAP) has played a more prominent role.

The Legal Framework

Part L deals specifically with the conservation of fuel and energy. In particular, Part L 3(b) provides a regulatory measure which requires that “a reasonable proportion of the energy consumption to meet the energy performance of the dwellings is provided by renewable energy sources”.

The technical guidance document drafted to accompany Part L sets out how the legal requirements of each part may be achieved in practice. However, while these lengthy documents provide ample detail on methods of how one may comply with Part L, they do not have the force of law. In a manner of speaking, the text of Part L sets out the letter of the law and the technical guidance document sets out a “how to” of achieving compliance with the law. However, it must be regarded that this does not present the only “how to”.

Primary consideration must be given to the law – every person to whom a legislative instrument applies is under a legal duty to comply with it. The technical guidance document, however, is not a legislative instrument. As set out in article 7 of the Building Regulations 1997 the status of the technical guidance document is such that, where works are carried out in accordance with the technical guidance

document, such works will, *prima facie*, indicate compliance with the requirements of Part L. The technical guidance document itself further states that what is contained therein is not mandatory, and that the adoption of design and construction approaches other than those outlined in the technical guidance document is not precluded provided that the relevant requirements of Part L are complied with. This undoubtedly generates concern for those tasked with enforcing compliance with Part L.

Ultimately, the objectives giving rise to Part L and moreover, the theory behind the technical guidance document are derived from principles of EU law. Thus, it can be argued that a purposive interpretation is required when ascertaining what must be achieved in light of the EU legal framework underpinning Part L.

The background of European Law

The patchwork quilt of EU energy regulation legislation is broad; however, looking to the overarching principles in Directive 2009/28/EC on renewable energy¹, known as the RES Directive, and the Energy Performance of Buildings Directives² can perhaps shed some light on how best to interpret the logic behind Part L.

The RES Directive requires national building regulations to deliver increases in renewable energy. It provides in article 13 (4) that member states shall introduce ‘appropriate measures’ to increase the share of all kinds of energy from renewable sources in the building sector. This further provides that in establishing such measures, member states may take into account national measures relating to substantial increases in energy efficiency and relating to cogeneration and to passive, low or zero-energy buildings. This is supported by Recital 48 of the RES Directive, which states that in facilitating minimum levels for renewables in buildings, it may be appropriate for member states to provide that levels are achieved by incorporating a factor for energy from renewable sources in meeting the requirements of the 2002 Energy Performance of Buildings Directive.

Recital 19 of the RES Directive reminds member states that in evaluating the realisation of national targets set, the optimal combination of energy efficiency technologies with energy from renewable sources should be taken into account.

However, this directive goes even further, requiring that by 31 December 2014, member states will have to 'require the use of minimum levels of energy from renewable resources'³ both in new buildings and existing buildings that are subject to major renovation.

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Recital 32 of the RES Directive provides that passive energy systems which use building design to harness energy is considered to be energy saved. To avoid double counting, the RES Directive asserts that such energy savings should not be taken into account for the purposes of the directive. Arguably this would then imply that the mandatory inclusion of minimum renewables is in addition to any energy saved by virtue of a passive design. In effect, this somewhat undermines the concept of the passive house approach by its inference that an extremely energy efficient passive house, which in light of its design intrinsically requires little energy for space heating or cooling may potentially be obliged to generate energy in the form of renewables in order to meet the targets envisaged.

Directive 2002/91/EC on the Energy Performance of Buildings provided the foundations for Part L by requiring member states to ensure minimum energy performance requirements for buildings, using a methodology which calculates the overall energy consumption for space heating, cooling, water heating and lighting, as prescribed by article 3. Directive 2010/31/EU on the Energy Performance of Buildings (EPBD) (Recast), which replaces the

SEAI's Deap software: a house that meets the energy & carbon targets under TGD L, but fails to hit the renewables target. Is Deap incorrect in asserting it fails to comply with Part L's renewables target, when the target is only expressed in the TGD, meaning alternative methods may be used?

2002 Energy Performance of Buildings Directive, builds on this by mandating member states to ensure that all new buildings will be nearly zero-energy buildings by 31 December 2020. The Energy Performance of Buildings Regulations, which transpose the 2010 Recast Energy Performance of Buildings Directive into Irish law came into force in January 2013, reinforcing the Part L obligations.

The compliance conundrum

How do you know if you are achieving a target that is not sufficiently defined? The calculation of compliance with Part L is via DEAP. Part L 3 (b) refers to a 'reasonable proportion' of renewable energy resources. However, the technical guidance document does not define a reasonable proportion. Nonetheless it sets the following "reasonable minimum level" targets to be provided by renewable energy targets in order to satisfy Regulation L3 (b):

- 10 kWh/m²/yr contributing to energy use for domestic hot water heating, space heating or cooling; or
- 4 kWh/m²/yr of electrical energy; or
- A combination of these which would have equivalent effect.

What is most unclear in the framework surrounding Part L is the assumption regarding the amount of heat used in a house that is consistent with Part L. According to Ireland's 2009 National Energy Efficiency Action Plan, when fully operative, the primary energy use for a typical new dwelling constructed to Part L requirements will be 60 kWh/m²/yr. (*Ed. – this assertion depends on the mix of house types built. The more buildings that are built with worse form factors such as detached homes and in particular bungalows,*

the higher the energy demand of the average Part L compliant building will be. If on the other hand there's a surge in apartment building, expect the average energy demand for Part L compliant homes to drop.)

Primary energy, as defined in the technical guidance document, does not include energy derived from on-site renewable energy technologies. In addition, as renewable energy technologies are generally characterised by zero, or greatly reduced, CO₂ emissions, the calculated EPC (Energy Performance Coefficient) and CPC (Carbon Performance Coefficient) are reduced by the extent that they reduce traditional fossil fuels. This begs the question of whether legal compliance with Part L can be achieved, notwithstanding the technical guidance document, as long as there is a reduction in the brown energy being used.

The application of Part L to passive house

A house built to the passive house standard has an average maximum space heating demand of 15kWh/m²/year, an airtightness level of 0.6 air changes per hour measured at 50 Pascals and an overall maximum primary energy use of 120 kWh/m²/yr, counting plug in energy use in addition to space heating, cooling, hot water, lighting and ventilation (with both space heating demand and maximum primary energy use calculated via PHPP). However, it is important to comment that comparing Part L to passive house is akin to comparing apples with elephants, as the passive house takes a number of different elements into consideration.

In light of this, using the example of ►