

# Amendment to Part L of the Building Regulations

## Policies and Philosophies - The Beauty of Sustainability

By Muireann Molloy



Part L is the section of the Irish building regulations which addresses the conservation of fuel and energy. It states that a building "should be designed and constructed so as to ensure that the energy performance of that building limits the amount of energy required for the operation of the building and the amount of CO<sup>2</sup> emissions associated with this energy use". In September 2007, an amendment to part L was published by the Government. It calls for a 40% improvement in energy efficiency in new build and a 40% reduction in CO<sup>2</sup> emissions for new homes in 2008. It also stipulates air-tightness tests will be mandatory, outlines minimum standards for heating systems, and calls for mandatory minimum renewable technology requirements for all new homes. According to Minister Gormley, the amendment is the next big dramatic step towards achieving carbon zero housing in Ireland.

We have asked two of Ireland's leading architects, RIAI members Martin Henschion of Henschion Reuter Architects and John-Barry Lowe, principal of EDEN architects to outline their views on the amendment, and how they think it will impact their work going forward.

**Martin Henschion**  
Henschion Reuter Architects



Prototype house designs in development by Henschion Reuter

While the new part L will initially mean a lot of additional work for us, we fully support its implementation. As a country we are struggling to meet our national energy and CO<sup>2</sup> obligations, which should be an embarrassment to us. The new regulations will have a dramatic effect on how we make buildings. It will now be critical to maximise the efficiencies that affect the shape of the building, as well as the detailing and level of insulation.

As the specification level on insulation and air-tightness increases, the relative effect of the least effective part of the construction will have a greater proportional effect - so the smallest cold bridge will be critical. I was surprised recently to visit a building by a well respected Dublin practice with a continuous, uninterrupted cold bridge right through the building, something that would not achieve even current standards. We will have to accept that all buildings will now have to be continuously 'wrapped', and an early modernist romantic attachment to an 'honest' expression of structure or primary construction is out of date.

We have a number of prototype house designs in development which will achieve and hopefully exceed the new standards. They work on the principle of a compact 'square' plan with an atrium or atriums within the building to light the centre of the plan, attracting solar gain and will provide pre-heated fresh air for ventilation. We have four such houses at design stage at the moment.

**John-Barry Lowe**  
Eden Architects and qualified BER Assessor



Two storey house extension and renovation by EDEN Architects which is being insulated externally

The new part L will require insulation levels of all buildings to be radically improved to reduce the heat loss per m<sup>2</sup>. The way the insulation is installed and the degree to which it is broken by structural elements and poor construction will now become critical. Having reduced the heating requirements by improving the building fabric, the technology used for space and water heating will now also be critical in calculating the other main measure of building performance, CO<sup>2</sup> used per m<sup>2</sup>.

Solar water heating, providing about 50% of hot water, will effectively become the default minimum requirement. Gas boilers will have to be the efficient condensing type and where solar water heating is not used, a combi-type gas boiler with no water cylinder storage will become standard.

As the new Part L requires buildings to be more airtight, the quality of air versus the amount of heat loss through ventilation will become critical. Heat recovery ventilation will feature in a lot of new designs and involves completely sealing the building and centrally removing warm stale internal air and using it to heat incoming fresh air. Airtight construction required for heat recovery will mean the national standard of construction will have to improve radically.

We have recently completed a two storey house extension and renovation in Rathfarnham where we used an external plastered insulation on the side and rear elevations. The front elevation was dry-lined to maintain the appearance with the neighbouring semi-D. We are currently renovating a two storey extension where the entire house, old and new, is being insulated externally. In addition, this project will have heat recovery ventilation and solar water heating. Additional energy will be from a condensing gas boiler.