

## LCH 11

Ymateb gan : Woodknowledge Wales  
Evidence from : Woodknowledge Wales

This response is built on three key proposals that address some of the questions raised in the consultation Terms of Reference shown above.

### **(1) Nearly zero energy by 2020**

It is clear that to achieve low operational energy, Building Regulations must set higher performance standards. To ensure standards are met in practice approaches should be adopted that require rigor in design and attention to detail in delivery. One such approach is the Passivhaus standard. Passivhaus is a very low energy standard, that offers the skills and technology necessary to deliver highly energy efficient homes. It was developed to close the performance gap and ensure the delivery of good indoor air quality and consistent thermal comfort throughout the year by using an advanced calculation tool (PHPP) and providing an approach that is quality assured throughout. This ensures that Passivhaus buildings really deliver reduced greatly energy use, good indoor air quality and comfortable temperatures throughout the year.

### **(2) Building performance measurement**

We need a revolution in building performance measurement. Better understanding of how buildings perform in reality will empower clients to procure more intelligently and thereby drive quality. The WG Innovative Housing Programme requires all recipients of grants to report on building performance. Building performance measurement should now become a requirement for all grant supported housing in Wales. Building performance measurement should include the following aspects as a minimum:

- Operational carbon emissions
- Maintenance costs
- Health and well-being (particularly indoor air quality, thermal comfort, day-lighting and acoustics)

WG should support the development of the [Building Performance Network](#) as a mechanism to guide

### **(3) Whole life carbon measurement**

It is perverse to regulate theoretical future operational carbon emissions and not immediate and verifiable embodied carbon emissions associated with the products and resources. Only by considering both operational and embodied carbon emissions together can we really start to make informed decisions. For example, the embodied

carbon emissions of energy saving technology may be so high as to negate any carbon benefits from its deployment. There are now well developed international standards and guidance for [whole life carbon measurement](#). The first step should be to create a regulatory requirement to measure the whole life carbon emissions associated with construction projects above a value or size threshold. Once a substantial data set has been created WG should then move to embodied carbon reduction incentives.

A regulatory framework for whole life carbon would help unlock multiple benefits including:

- More modular, component based, off-site and re-usable construction, encouraging designing for deconstruction and re-use (with consequent reductions in resource use), and helping to close the gap between design and actual building performance. These efficiencies were described in both the Latham, Egan and now Farmer reports, but remain largely absent from UK construction
- Re-use of structural components e.g. steel
- Greater use of biogenic building materials (helping to increase the size of the carbon store in buildings) and subsequent development of sustainable local supply chains
- Increase in use of relatively low embodied carbon cross laminated timber (CLT) as an alternative to reinforced concrete – particularly in medium rise housing
- Increased specification of UK grown timber which currently only meets approximately 15% of UK construction related demand
- Encourage market demand for low carbon concrete. ‘An investment of 100,000 Euros in PV would save 75 tCO<sub>2</sub> over 30 years. An equivalent investment in low carbon concrete would save 663 tCO<sub>2</sub> immediately. Which investment is being made?’ (Josephina Lindblom, Sustainable Production and Consumption, Director General for Environment)