



CARBON BITES

From the CIBSE ENERGY PERFORMANCE GROUP

Crafting a practical Passivhaus

Passivhaus is a building standard which when accurately followed, delivers energy efficient, comfortable, and affordable buildings. General principles of Passivhaus design can be summarised as follows:

- Optimal building shape, orientation & shading;
- High insulation standards
- Airtight building envelope
- Thermal-bridge-free building envelope
- Optimal window design and construction
- HRV (heat recovery ventilation)

The Passivhaus design concept has been around for almost 30 years. The energy-saving incentives which the scheme brings, resulted in a drastic increase in enthusiasm towards Passivhaus in the UK in the last decade.

In general, the Passivhaus concept works and undoubtedly has a potential for more wide-spread application in the UK. However, before we all start to design and build passive houses in the UK, we should remember that the devil is in the detail and ensuring the accurate Passivhaus implementation at the design stage does not guarantee success on-site.

We should always appreciate challenges of construction and make tasks on-site as easy as possible to avoid disappointments later on. A good way forward is to identify challenging components, i.e. thermal-bridge-free façade, and consider robust methods of delivering these, i.e. adequate sequencing. Cranmer Road King's College student accommodation case study, as presented by Matthew Traub and Gwilym Still during Cambridge, is a great example of responsible and thoughtful approach to Passivhaus design. Here, Passivhaus was adopted for this project as a consequence of the aim to design for a 100 year design-life. In Cambridge, we all look forward to seeing this project coming to life in the near future!

Aleksandra Przydrozna, Max Fordham, July 2017

Key Issues

- Synthesising architecture, maintenance, and performance
- Tackling challenges of construction and monitoring
- Delivering designed building on-site
- Avoiding overheating in summer
- Future-proofing

LINKS

- <http://passivehouse.com/index.html>
- <https://passipedia.org/>
- <http://howtopassivhaus.org.uk/>
- <http://www.maxfordham.com/people/gwilym-still>

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