Large scale Passivhaus projects in the UK

- a certifiers view

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WARM: Low Energy Building Practice
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- Examples of Large Scale Passivhaus in the UK
- Issues moving to larger scale
- Common failures
- Rules for Success

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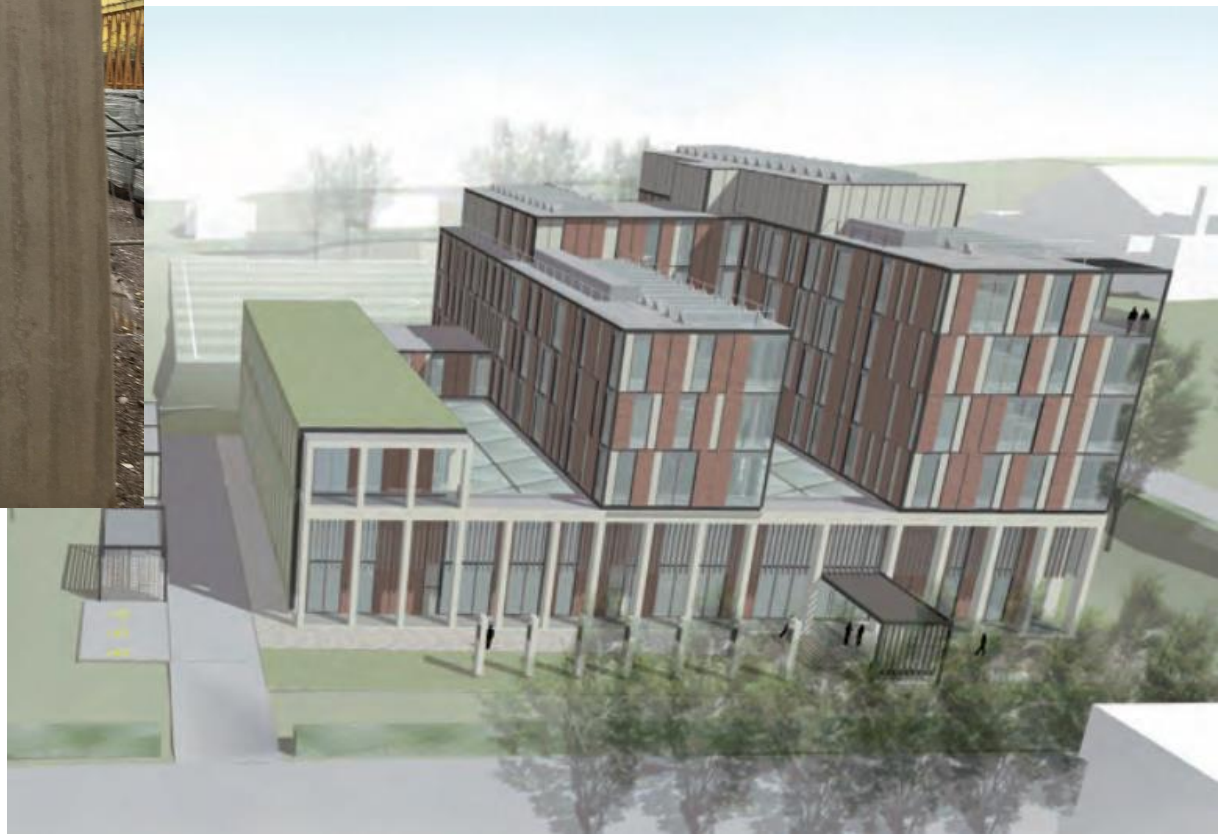
Sulgrave Gardens, London
Octavia HA

~30 homes; 4blocks,
2 to PH, 2 same
construction
Not designed as PH

Chester Balmore, London
Camden Council

53 homes
3 blocks, all PH
Not designed
as PH

Medical building, Leicester University



Massive – 10,000 m2.
2 stage tender
Designed as PH
Curtain walling…

Hereford Archive, Herford Council

Truly Novel – Airtightness and Thermal mass, not close control a/con

Nokes, Dacorum Borough Council

Multi residential with Central Services
All Electric

Woodside Towers, Glasgow

Passivhaus
EnerPHit project
All Electric
Novel ventilation

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Issues moving to large scale Passivhaus

Passivhaus = Higher Quality than normal

Larger projects have a lot more people to tell to do things differently

Larger projects tend to have a larger churn of subcontractors

How to communicate the basic information for:

- Thermal continuity
- Airtightness
- Ventilation?

What does 'Passivhaus' mean for you?

WILLMOTT DIXON

SINCE 1852

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Common Failures

- Airtightness
  - Major reason for cost overruns
  - Covering up work before testing = massive cost and time overrun
  - Design the program to allow early testing whilst airtight layer is still accessible.
- Thermal Bridges
  - Make sure details are worked out by the structural engineer *before* you start to build.
  - Choosing a construction system that is not sympathetic to super insulation will likely cause problems – brick finish especially an issue
- Ventilation
  - The most problematic of all.
  - Standards of ventilation systems very poor in UK, probably due to lack of experience.
  - Noise a key indicator of poor design and execution.
  - Commissioning seems to be a tick box affair.

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Rules for success in large projects

- Design the job before you get to site
  - You are trying to better than the norm, so standard details wont work!

- Communicate with your workforce about insulation, airtightness and general higher quality build
  - The Willmott Dixon example worked

- Allow for more oversight and checking.

- Plan for early air testing – change the construction sequence to make sure no air tight layer is covered up before it is tested.

- Recognise that the Ventilation is the weak link in the UK. Quiet systems are not the norm, but are a requirement for Passivhaus. They require larger ducts, silencers, and experience at the design and installation stage. Use Passivhaus experienced designers and installers.