

Mainstreaming **Passive House**

Lessons from the UK



VIA-architecture.net

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Director

Architect + Passive House Designer

VIA architecture

Design: Passive House buildings

Consult: help other architects and owners design
Passive House buildings

Certify: Passive House buildings in association
with WARM (UK)

Overview

1. UK Passive House Journey
2. Success Factors
3. Challenges
4. Takeaways

1. UK Passive House Journey

2006

- 0 certified projects

+ 10 years

2016

- 500 certified buildings, 1000+ underway

The 1st UK Passive House



The 2nd UK Passive House



The 1st London Passive House



5 years on: 2011 overview



5 years on: 2011 overview



School



School



School



Flats



Offices



Housing



Offices



Social Housing



Housing



Retrofit



Community Centre



Social Housing

2015: Going Big – 6,350m²



2015: Going Big – 13,000m²



2015: Large Scale Retrofit



2016: 1st Court Case

Developer fined over Passivhaus claims

Bournemouth Firm said homes were Passivhaus certified despite properties not achieving standard

Posted in March 2016



A property developer has been fined for making misleading claims about achieving Passivhaus standards. Bournemouth-based Lomand Homes pleaded guilty to five offences under the Consumer Protection from Unfair Trading Regulations 2008 at Bournemouth Magistrates' Court.

The successful prosecution followed an investigation by Dorset County Council's trading standards service into claims that new properties at Pennsylvania Heights, on Portland, were built to 'certified Passivhaus standards'.

2017: Housing scaling up



Norwich 100+ homes



London 300+ homes

Plymouth 72 homes



2. Success Factors



Start

- Designers, architects and builders lead
- Don't wait for clients to ask for it



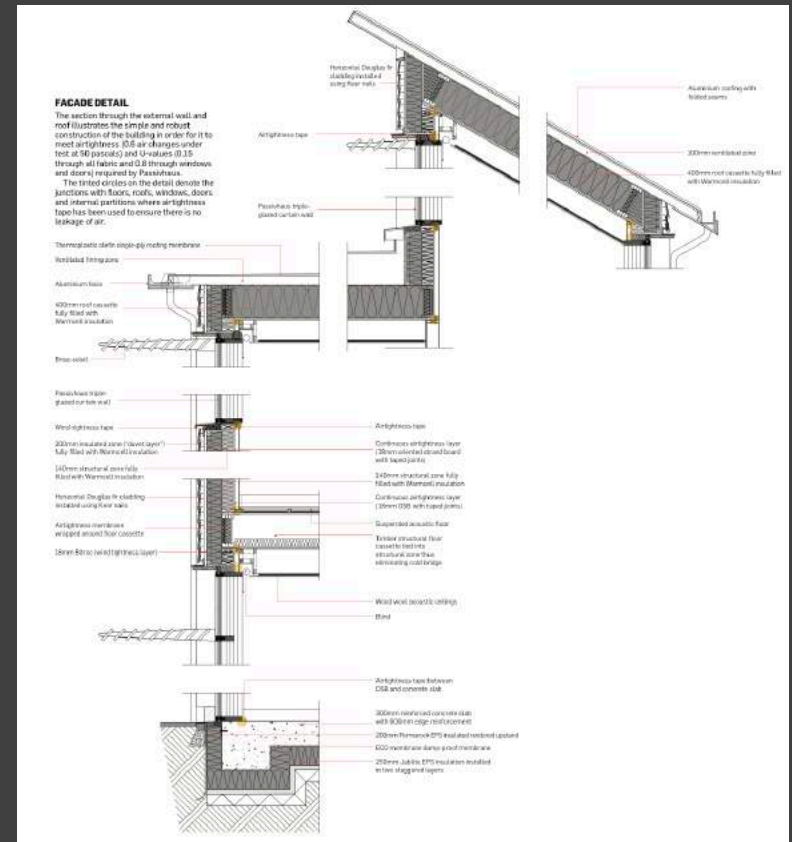
Collaborate

- Get experts in
- Work together across industry: architects / engineers / builders / specialist / clients



Publish

- Case studies of early success stories
- Make it seem doable, not an alien concept



Honesty

- Everyone can learn from mistakes
- Strong community bonds & sense of comradery



Repeat teams & clients

- Build better relationships and learn more working together over multiple projects.
- If you don't profit the first time, you will the second (or third!) time



Master classes

- Practitioners teaching others
- Pragmatic and specific knowledge transfer



Grass roots

- No government legislation support
- Passion and enthusiasm to succeed



3. Challenges

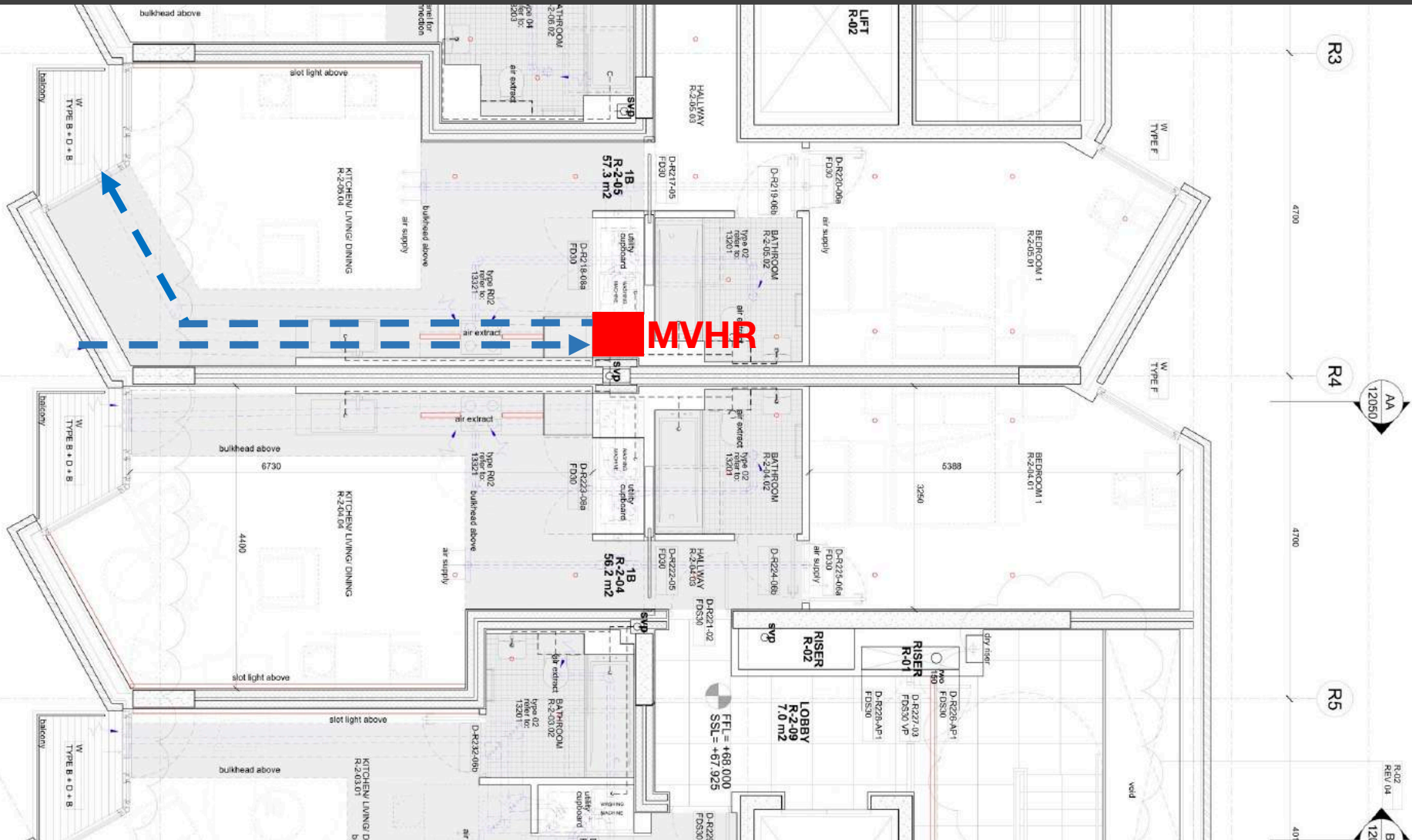


330
Photo: Nick Grant

Naivety

- Adopting Passive House late
- Appointing an inexperienced design team

Shoehorn Passive House in?



Site quality

- Insulation
- Airtightness

Insulation



Photos: Nick Grant

Airtightness



Photo: Mark Siddall

MVHR systems

- Design
- Installation
- Commissioning
- Operation

MVHR systems

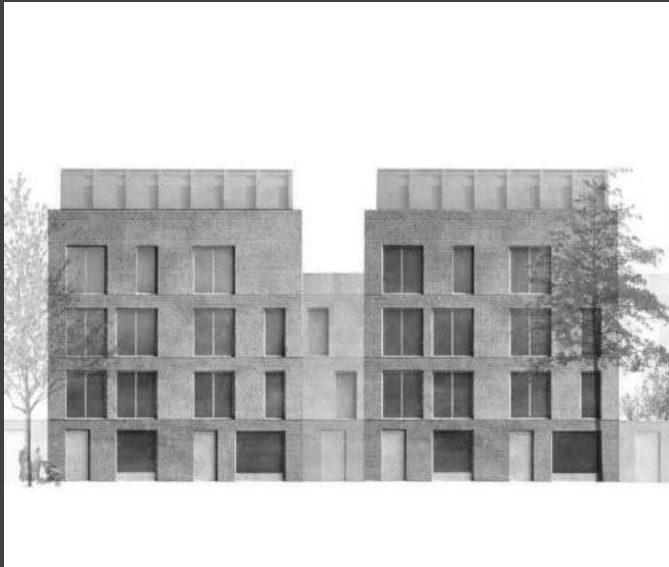


Photos: Alan Clarke

Overheating

- Not understood or taken seriously
- Too much glass

Overheating



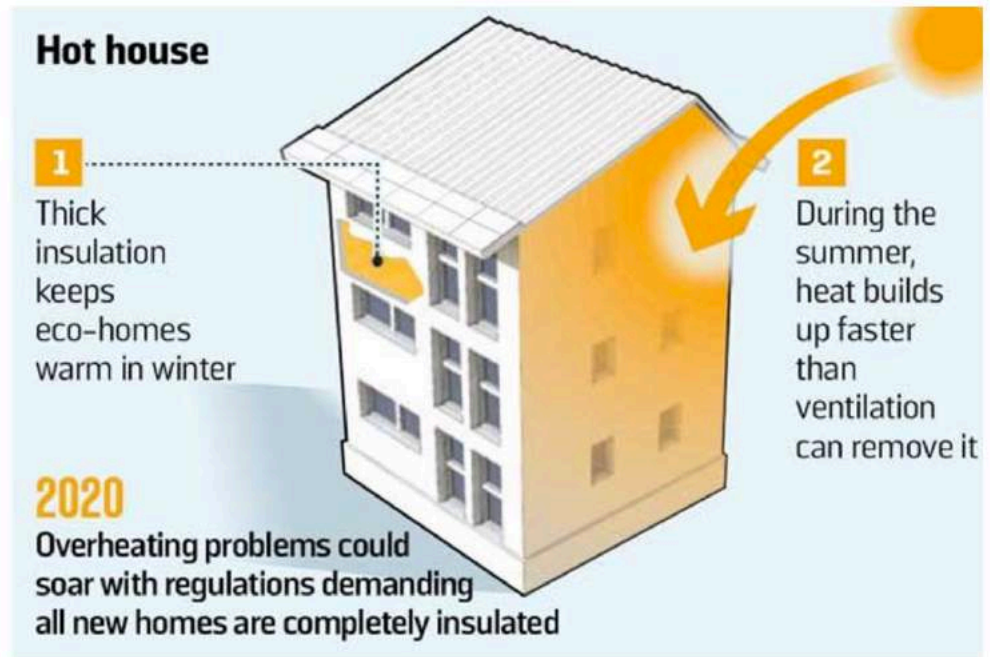
GLAZING: 50%

Recommendation: 25%

Residents roast in eco-homes' greenhouse effect

Jonathan Leake, *Environment Editor* Published: 10 May 2015

Comment (4) Print



BRITAIN'S first-generation eco-homes are turning into greenhouses because the insulation that keeps occupants warm in winter can roast them in summer.

The problem mainly affects homes built to the German Passivhaus standard, which sets levels for low energy consumption. Such homes can cut heating bills by 90%, but scientists say their heavy insulation can cause summer overheating.

One study, conducted over three summers at a housing association scheme in Coventry, found the temperature in Passivhaus flats rose above 25C for days at a time.

Researchers at Coventry University found 72% of the flats failed their design criteria, putting vulnerable residents at risk.

Lack of drivers

- Not accepted for compliance
- Subsidies or incentives for renewable energy not
Passive House

4. Key Takeaways



Start

Share, learn,
support each
other

Keep a close
eye on quality

“The only real mistake is the one from which we learn nothing.”

- Henry Ford

NZ Passive House Journey

2011

- 0 certified projects

+ 10 years

2021

- What can we achieve **together**?

The logo for VIA architecture, featuring the word "VIA" in a large, bold, serif font, with "architecture" in a smaller, lowercase, sans-serif font below it.

VIA
architecture

PASSIVE HOUSE EXPERTS

A dark grey rectangular box containing the website address "VIA-architecture.net" in a white, sans-serif font.

VIA-architecture.net