Mainstreaming Passive House

Lessons from the UK
VIA-architecture.net

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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 1\textsuperscript{st} London Passive House
5 years on: 2011 overview
5 years on: 2011 overview
2015: Going Big – 6,350m²
2015: Going Big – 13,000m$^2$
2015: Large Scale Retrofit
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

Plymouth 72 homes

London 300+ 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
Honesty
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

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
Resident roast in eco-homes’ greenhouse effect

Overheating

GLAZING: 50%
Recommendation: 25%

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 25°C 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 for 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?