

Research question Proposal - 10 November

Question -

Looking at the feasibility of bringing Passive House construction methods from Scandinavian Countries into the UK construction industry , and are they able to be properly adopted into the sector with the challenges facing

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Abstract

This research conducted through the paper will look into evaluating the feasibility of adopting Passive House design principles from Scandinavian countries such as Norway , Germany , etc and whether they fit into the UK or if that is an unreasonable task. Focusing on the Quantity Surveyors role in managing cost , value , and sustainability into account when building.

This study will -

- Explore how Scandinavian countries have successfully made Passive House a standard design into their construction sector , and is it possible to replicate.
- Assess how the UK's economic pressures from the government , preference for lower initial cost builds and less training can be seen as major challenges through approving these high performing housing.
- Look into the skills gap , minimal technical expertise taught and traditional industry mentality that has always prioritised instant savings over lifestyle efficiency.
- Look into how Quantity Surveyors may play a major role in the introduction of these houses and whether cost modelling , lifecycle costing and procurement strategies support low-energy housing.
- Highlighting ways around to meet higher building standards (passivhaus offsite building and installing with factory precision , Installing not to hit passivehaus criteria but to its standard , etc)

Introduction Plan

Review Passive House development in Scandinavia.

Highlight the urgency for sustainable, cost-effective housing in the UK (BREEAM, Net Zero 2050).

Define the QSs' role in feasibility assessment.

Highlight UK barriers: short-term focus, limited skills, and resistance to change (cultural issues).

Main focuses in the Literature Review

Summarise existing studies on Passive House costs and energy performance.

Showcase Scandinavian success: prefabrication, stable policy , and workforce training

Contrast UK's slower adoption: lack of approval due to short term profit-driven ideas.

Methodology Overview

Mixed-methods: cost analysis, case studies, interviews to cover all ideas

Case studies: Lindas Housing (Gothenburg), EnergyFlex, Hoje-Taastrup, Agar Grove (London), Burry Port & Pembroke Schools, Carmarthen library building built to high passive house standard

Interviews with QSs, architects, sustainability consultants, and the public.

Expected Outcomes

Find the barriers to Passive House adoption (technical, cultural, economic).

Show long-term savings outweigh initial costs or other way round

Strengthen case for QSs in driving UK's low-carbon housing transition.

Original Contributions I have thought of that could be included

Offsite construction for certain room builds so can just bring room by room with previous cut outs for doors windows etc and just connect together on site, this will fasten and improve Passive House delivery and reduce training.

Aiming for Passive House principles rather than strict certification to improve feasibility.

Cross-border prefabrication (Pre fab in rural areas with lower income average and transport to main city hubs such as London) to lower costs, with ethical considerations.

Limitations to Address

Restricted access to Scandinavian data due to lack of information

UK–Scandinavian comparison complexity: labour costs, climate, construction methods.

Lifecycle costing relies on assumptions; energy prices and politics can shift.

Cultural/behavioural factors are hard to estimate

Timeline for Net Zero 2050 limits long-term tracking.

Real-world energy use often falls short of Passive House potential due to human carelessness compared to perfect scenario