

New Study “Retrofit Revisit” Offers Valuable Insights for Future Home Energy Retrofits

July 15, 2024



A new research project, “Retrofit Revisit,” sheds light on the long-term effectiveness of home energy retrofits, providing valuable lessons for future efforts to improve the UK’s housing stock. Led by Marion Baeli of 10 Design and Julie Godefroy of CIBSE, the study examined ten retrofit projects a decade after their initial upgrades.

“Retrofit Revisit” was supported by Innovate UK, Historic England, and various industry partners. It focused on diverse housing types across the UK, many of which were considered pioneering “deep retrofit” examples a decade ago. These projects aimed for significant reductions in carbon emissions.

The findings are encouraging. Despite some minor fluctuations over time, the retrofitted homes continue to outperform the non-retrofitted housing stock in terms of energy efficiency. Residents also reported increased comfort, particularly during cold weather, and lower energy bills.

Marion Baeli, Principal – Sustainability Transformation at 10 Design said: “In publishing “Retrofit Revisit,” our goal is to boost confidence in the lasting benefits of retrofitting while also emphasizing the insights gained from building performance evaluations and identifying areas needing further research to ensure the reliability and longevity of building fabric and operations. Through this collaborative research effort, we aim to support the nationwide retrofitting of existing homes across the UK.”

The research team conducted a rigorous BPE on each home, assessing factors like building fabric, energy use, indoor air quality, and airtightness. They employed various techniques, both standard and innovative, to gain a comprehensive understanding of the homes’ performance over time.

Julie Godefroy, Head of Net Zero Policy at CIBSE, said: “Retrofit Revisit shows that, when done well, retrofit provides huge energy savings as well as comfortable homes. I hope this will encourage more studies to gather lessons on more retrofit typologies and larger samples, but that it will also give confidence to industry and policy makers to implement retrofit at scale”.

The study emphasizes the importance of good design, attention to detail, and regular maintenance in ensuring the success of any retrofit project. Neglected components can lead to problems down the line. Easy-to-maintain systems are key to long-term performance.

“Retrofit Revisit” highlights the effectiveness of deep retrofit measures when implemented with meticulous design and construction practices. The studied homes deliver lasting comfort and energy savings, demonstrating the value of retrofitting as a sustainable investment.

The research also explored the practicality of various BPE methodologies, aiming to make these evaluations more routine and widespread. The project suggests that combining established tests, like airtightness evaluations, with innovative techniques for assessing fabric performance and degradation can be highly effective.

The UK Climate Change Committee recognizes the crucial role of retrofitting in achieving the country’s net-zero goals. “Retrofit Revisit” aims to inspire confidence and encourage the national rollout of retrofit measures to improve the energy efficiency of the UK’s existing housing stock.

Mat Colmer, Senior Innovation Lead – Construction & Net Zero Heat at Innovate UK, UK Research and Innovation, said: “It’s been over 10 years since Innovate UK invested £25million in the Retrofit for the Future programme. It is important that we learn from such programmes and how they fair over time. Retrofit Revisit does exactly this, providing designers and decision-makers, as well as home occupants, the confidence that when a job is done well it delivers on performance and market certainty for the retrofit industry.”

Hannah Reynolds, Architect Historic Building Retrofit at Historic England, shared: “BPE and maintenance are key to the successful retrofit of traditional buildings. The project demonstrates the need for testing of moisture and fungal levels as a vital part of evaluation, to understand the suitability and longevity of deep retrofit proposals. The research also highlights the critical role of maintaining building fabric and services in order to achieve long term positive outcomes.”

The full “Retrofit Revisit” report can be downloaded here: [Retrofit Revisit \(2024\)](#)