Warm Healthy Home project 2025

Project report

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Warm Healthy Home initiative - comprehensive project description

1. Project description and objectives

The Warm Healthy Home (WHH) initiative was launched in January 2024 by our Private Sector Housing team, following the successful implementation of the Minimum Energy Efficiency Standards (MEES) enforcement pilot project.

Funded by Public Health Luton, this year-long initiative aims to enhance energy efficiency standards within privately rented domestic properties, particularly targeting vulnerable tenants with cold-sensitive health conditions and low incomes.

The project's primary objective is to reduce the number of private tenants living in fuel poverty and residing in inadequate, unhealthy housing.

Improved energy efficiency measures, such as effective insulation, are critical in fostering healthier living conditions and reducing the negative health impacts associated with cold homes. Additionally, the initiative aims to reduce hospital admissions by promoting healthier housing conditions.

The project provides tailored support and guidance to landlords, facilitating the process of enhancing energy efficiency or applying for exemptions when necessary. By delivering essential information and resources, the initiative empowers landlords to improve their properties and meet MEES standards.

A unique aspect of this initiative is the identification of 'hard-to-reach homes' through data from the My Rent Deposit Scheme, allowing for targeted support to landlords to improve insulation and energy efficiency in homes that are far below MEES standards. This contributes to reduced running costs, decreased CO2 emissions, and enhanced energy efficiency over the long term.

1.1: Identified Public Health need

Cold and inadequately insulated homes have been linked to various adverse health outcomes, including respiratory and cardiovascular illnesses, as well as heightened mortality rates during colder months. Over 10,000 people die each year in England and Wales due to living in cold homes.

The initiative is particularly important for vulnerable tenants, including those with pre-existing cold-sensitive health conditions and low incomes, who are disproportionately affected by inadequate housing conditions. Improving energy efficiency in these homes can significantly enhance health and well-being while reducing pressure on the NHS and associated healthcare costs.

1.2: Target cohort, provider, and funding allocation

The initiative targets vulnerable tenants in privately rented properties, particularly those with cold-sensitive health conditions and low incomes. The project is led by our Private Sector Housing team, with funding provided by Public Health Luton. The initiative builds on the achievements of the previous MEES enforcement pilot project funded by the Department for Energy Security and Net Zero.

1.3: Project intervention and evidence of effectiveness

The initiative focuses on improving energy efficiency through retrofitting homes with insulation, heating systems, and ventilation. The previous MEES enforcement pilot project demonstrated the value of providing tailored guidance and resources to landlords, but its effectiveness was limited by funding constraints.

The WHH initiative builds on these findings by delivering more comprehensive support over an extended period, allowing for better assessment of the intervention's impact. Evidence suggests that improved housing conditions lead to significant reductions in hospital admissions, reduced NHS costs, and enhanced quality of life for residents.

1.4: Impacts of fuel poverty interventions

Fuel poverty and cold homes negatively impact physical and mental health. According to the Marmot

Review (2011), between 10% and 25% of the 43,900 excess winter deaths in England and Wales during 2014/15 were attributable to fuel poverty and cold homes.

The adverse health effects of cold homes extend beyond mortality rates, contributing significantly to health inequalities and broader societal impacts.

1.4.1: Health impacts

Mental and physical health effects

- Cold, fuel-poor homes contribute to mental health issues in adults (Green and Gilbertson, 2008; Gilbertson et al., 2012) and young people.
- Children living in cold homes face increased risks of respiratory health issues, poor weight gain during infancy, and heightened susceptibility to illness (Liddell and Morris, 2010).

Impact on long-term conditions and older people

- Cold homes exacerbate existing medical conditions, increase hospital admissions, and may slow down recovery following discharge from hospital.
- Roche (2010) estimates that for every excess winter death, there are eight hospital admissions and 100 GP consultations.
- Poor health outcomes related to cold conditions and fuel poverty contribute to long-term health inequalities.

1.4.2: Economic impacts

- The NHS bears substantial costs due to illnesses caused or worsened by cold homes. Age UK estimated these costs to be approximately £1.36 billion per year.
- The Building Research Establishment (BRE) has calculated that reducing housing hazards, including cold, could save the NHS around £600 million annually.
- For every £1 spent on preventing fuel poverty, there is an estimated 42 pence saving in NHS health costs (Liddell, 2008)

1.5: Aims and objectives

The aims and objectives outlined in the original project proposal include:

- Increasing the proportion of privately rented properties in Luton meeting or exceeding MEES Band E standards.
- Reducing the number of private tenants living in fuel-poor and unhealthy conditions.
- Providing landlords with effective resources, guidance, and support to enhance energy efficiency or apply for exemptions where applicable.
- Establishing a foundation for continued advocacy and progress in energy efficiency improvements beyond the project's duration.
- Evaluating the cost-effectiveness of the intervention and determining its social return on investment, including potential savings for the NHS and reduced strain on frontline staff.

2. Methods of evaluation

The evaluation of the WHH initiative employed a comprehensive approach involving various methods to collect, store, and analyse data. The aim was to assess the project’s effectiveness in improving housing standards and enhancing energy efficiency within the private rented sector. The methods of evaluation are listed below.

2.1. Internal and external database review

A thorough review of both internal and external databases was conducted to identify ‘hard-to-reach homes’ requiring intervention using the following sources.

a. **My Rent Deposit Scheme data review:** information was gathered from the My Rent Deposit scheme, which included a total of 3,223 properties flagged for audit throughout the project's lifespan. Data collected comprised property addresses, landlord names, and addresses.

b. **Verification Against National EPC register:** each property identified was cross-referenced with the National EPC Register to verify compliance. The purpose was to identify properties that did not meet the Minimum Energy Efficiency Standard (MEES) requirement of an Energy Performance Certificate (EPC) rating of Band E or above.

c. **Use of data for enforcement:** the data collected was strictly used for purposes connected to our council functions under Parts 1 to 4 of the Housing Act 2004. This included investigating whether an offense had been committed under any of those parts and enforcing minimum energy efficiency ratings to improve housing standards.

Additionally, for in-depth auditing and investigation, the project utilized other internal data sources such as:

a. **Land Registry data:** to validate property ownership details.
b. **Council Tax information:** to cross-check property status and occupancy details.

2.2. Surveys

Surveys were conducted to gather both quantitative and qualitative insights from respondents. Participants were selected based on their current energy performance certificate (EPC) ratings, which fell below the minimum E rating required under the minimum energy efficiency standards (MEES), as established by the Energy Efficiency (Private Rented Property) (England and Wales) Regulations 2015.

Pre-intervention surveys
Administered to tenants whose properties were identified as non-compliant with MEES standards. The survey aimed to establish baseline conditions and identify challenges faced by tenants.

Post-intervention surveys
Administered after landlords implemented recommended improvements to raise the EPC rating to band E or above. This phase aimed to measure perceived improvements in housing conditions and overall satisfaction with the intervention process.

360-degree feedback mechanism
These surveys were designed to gather comprehensive input from all respondents, enabling a well-rounded evaluation of the intervention’s overall effectiveness.

2.3. Data storage and analysis

All collected data was securely stored within our data management systems, adhering strictly to data protection and confidentiality standards. The process of analysis involved the following methods.

Quantitative analysis
Metrics such as energy efficiency ratings and healthcare utilisation were statistically analysed to determine correlations between improved housing conditions and reduced hospital admissions or NHS costs.

Comparative analysis
Pre-intervention and post-intervention data were compared to assess the impact of the WHH initiative.

The evaluation methods employed provided a robust framework for assessing the project's success and identifying areas that require further enhancement. The combination of database reviews, surveys and statistical analysis allowed for a comprehensive understanding of the project's effectiveness in improving housing standards and promoting energy efficiency within the private sector housing.

3. Results

This section presents the interpretation of data collected throughout the WHH Initiative. The results of the baseline and post-intervention survey are structured to provide a comprehensive view of the project's progress, effectiveness, and areas for improvement.

The following subsections detail the enforcement measures included in the project proposal, any adaptations made, and the findings derived from data collection efforts.

3.1: Structure measures

The project identified properties that were non-compliant with MEES standards, prioritising interventions based on risk factors such as tenant vulnerability and the severity of disrepair. Key interventions included insulation improvements, efficient heating system installations, and ventilation system upgrades.

Performance Indicators	Cumulative Total for KPIs
Number of Properties that have been reconciliated to identify non-compliance of EPCs	2217
Number of Properties identified with no EPCs - Unlisted	75
Number of Properties identified with Expired EPCs	92
Number of Properties identified with F rated EPCs	15
Number of Properties identified with G rated EPCs	6
Number Compliance Notices sent out	160
Number of Properties Improved by works carried	13
Number of properties Currently undergoing works to improve EPC (WIP)	3
Number of Properties made compliant (Previoulsy Expired & No EPC)	133
Number of properties that do not fall under MEES	35
Number of Properties sent a revoke letter	31
Number of Properties with Exemptions Registered	1
Number of Properties with Exemptions Registered sent letters for possbile breach of Regulation 31	1
Number of 7 day letter sent post compliance notice	46
Number of intention to issue a Financial Penalty	17
Number of Financial Penalties sent	1
Number of Tenant Advice letters sent out	22
**Number of Warmer Home pre-intervention Questionnaires sent out*	21
**Number of questionnaires returned (pre intervention)*	15
**Number of post intervention questionnaires sent (administered from end Jan 2025)*	15
**Number of post questionnaire returned*	13

Performance Indicators

Cumulative Total for KPIs

Number of Properties that have been reconciliated to identify non-compliance of EPCs 2217
Number of Properties identified with no EPCs – Unlisted 75
Number of Properties identified with Expired EPCs 92
Number of Properties identified with F rated EPCs 15
Number of Properties identified with G rated EPCs 6
Number Compliance Notices sent out 160
Number of Properties Improved by works carried 13
Number of Properties Currently undergoing works to improve EPC (WIP) 3
Number of Properties made compliant (Previously Expired & No EPC) 133
Number of properties that do not fall under MEES 35

Number of Properties sent a revoke letter 31
Number of Properties with Exemptions Registered 1
Number of Properties with Exemptions Registered sent letters for possible breach of Regulation 31 1

Number of 7 day letter sent post compliance notice 46
Number of intention to issue a Financial Penalty 17
Number of Financial Penalties sent 1
Number of Tenant Advice letters sent out 22
*Number of Warmer Home pre-intervention Questionnaires sent out 21

*Number of questionnaires returned (pre intervention)	15
*Number of post intervention questionnaires sent (administered from end Jan 2025)	15
*Number of post questionnaire returned	13

Fig 1- Project KPI (Monthly generated report)

We accessed data on 3,322 private rented properties from the 'My Rent Deposit' register. During this project, 2,217 of these properties were audited, with 2,029 confirmed as compliant with the minimum energy efficiency standards.

A total of 21 properties were identified as falling below the minimum band E rating standard. Through project interventions using a fabric-first approach,13 of these properties were successfully upgraded to achieve higher energy efficiency ratings.

Additionally, 133 properties with expired EPCs or those not listed on the EPC register were made compliant. 3 properties are currently marked as **work in progress** (WIP) as landlords continue to implement necessary improvements to enhance energy efficiency.

Furthermore, one property is officially registered for exemption.

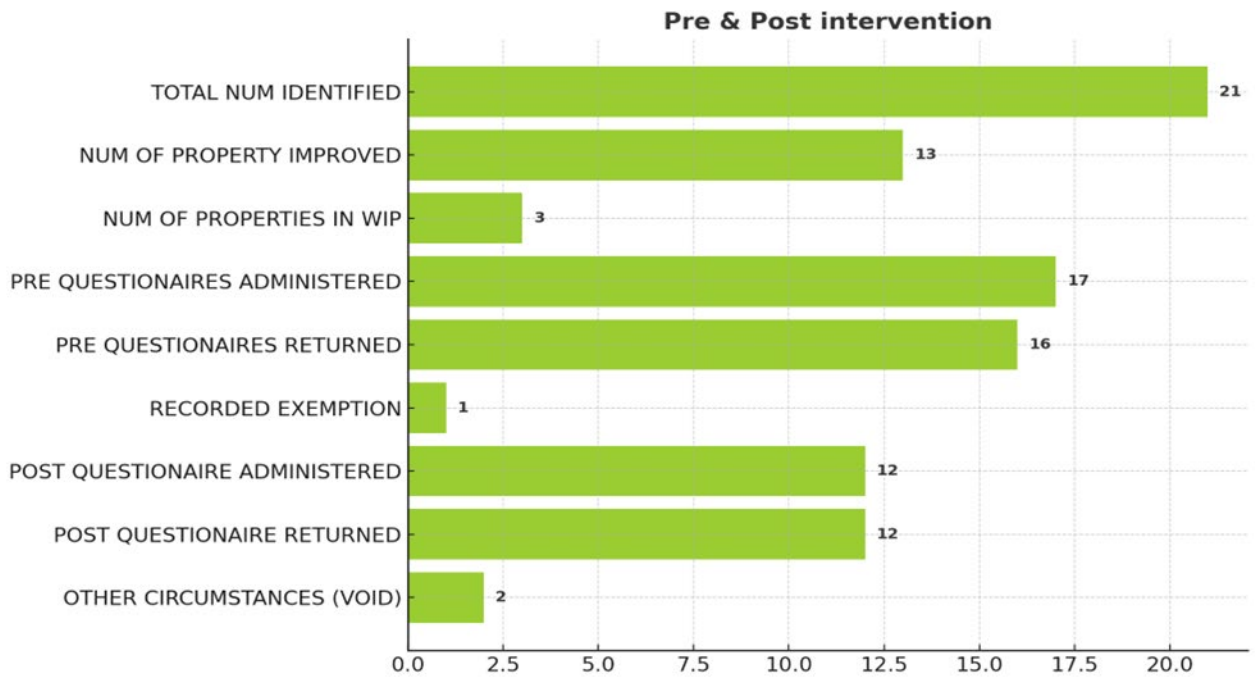

Fig 2- (pre & post intervention questionnaire administered)

Pre & Post Intervention

Total number identified	21
Number of property improved	13
Number of properties in Works In Progress	3
Pre questionnaires administered	17
Pre questionnaires returned	16
Recorded exemption	1
Post questionnaire administered	12
Post questionnaire returned	12
Other circumstances (void)	2

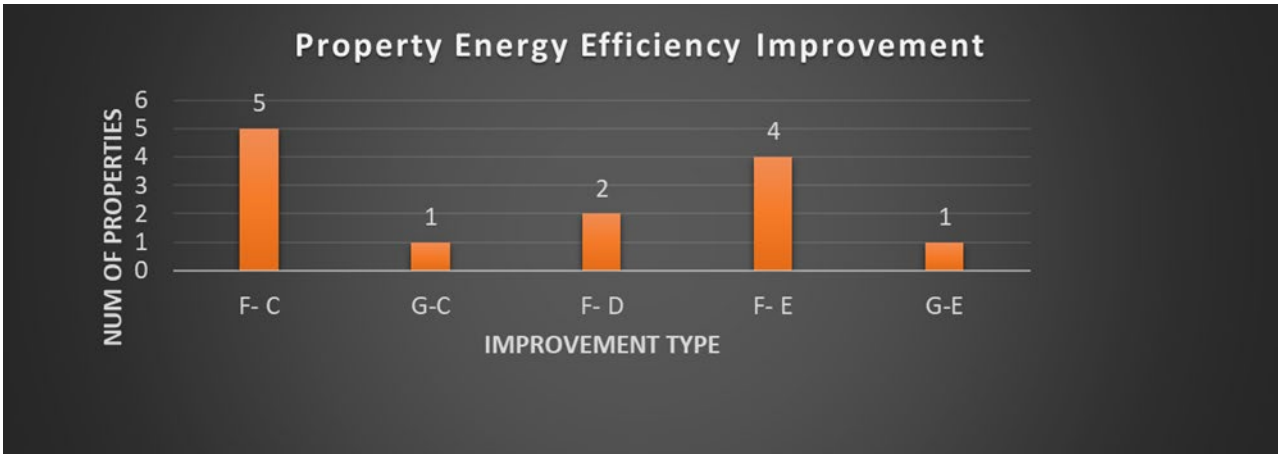

Fig 3 – (EPC Improvement because of intervention)

Property Energy Efficiency Improvement

F - C 5
G - C 1
F - D 2
F - E 4
G – E 1

3.2: EPC rating improvements summary

The image above is a summary of energy efficiency improvements made to a portfolio of properties, measured by their energy performance certificate (EPC) band ratings. These enhancements demonstrate varying degrees of progress, with some properties achieving substantial upgrades.

Significant improvements

- 1 property improved from band G to band C, achieving a 4-band jump. This represents the most substantial improvement across all properties, indicating a major increase in energy efficiency.
- 5 properties improved from band F to band C, each achieving a 3-band jump.
  These upgrades reflect a considerable enhancement in energy performance.

Moderate improvements

- 2 properties were upgraded from band F to band D, reflecting a 2-band improvement.
  This indicates a meaningful step toward better energy efficiency.
- 1 property improved from band G to band E, achieving a 2-band jump.
  This improvement is also notable in terms of energy performance gains.

Minor improvements
Four properties improved from band F to band E, each with a 1-band improvement.
While less dramatic, these upgrades still contribute positively to the overall energy profile.

Exemptions
One property held a valid exemption and was not subject to improvement requirements.
This exemption was granted in accordance with relevant regulatory guidelines.

The intervention was largely successful, with the most substantial improvements seen in the property that advanced from band G to band C. Achieving a 4-band improvement is impressive and suggests that significant measures were implemented to enhance energy efficiency. The properties that moved from band F to Band C also demonstrate a high level of success.

The smaller improvements from band F to band E and band G to band E are still positive, but there may be further opportunities to enhance their energy efficiency in the future.

The presence of one valid exemption indicates compliance with EPC regulations where improvements were not feasible.

Overall, the intervention achieved notable success, particularly with properties that moved multiple bands upward. Future efforts could focus on continuing to improve those properties that only advanced by one or two bands.

3.3: Analysis of results

A questionnaire was administered both before and after the intervention to assess its impact. The survey covered various aspects, including:

- a health and well-being questionnaire
- the condition and repair status of the home
- the ability to heat the home
- the ability to meet payment obligations

The post-intervention questionnaire was conducted in mid-January 2025, approximately 2–3 months after the housing improvements were completed. This ensured that the responses were gathered within the winter season still, allowing for a direct comparison with the baseline questionnaire, which had also been administered during winter before the intervention.

3.4: Overall sample

This section provides an overview of the survey respondents. A total of 16 participants completed the baseline questionnaire. However, there was a significant drop-off in the number of post-intervention questionnaire that was sent out to residents as it's only those properties that have been improved as a result of the intervention are sent the post intervention questionnaire.

3.4.1: Sample

The results of analysis of the characteristics of the sample are discussed below. These cover a range of demographic, socio-economic characteristics, to help understand the demographic profile of respondents. Some of those characteristics are:

- age
- gender
- ethnicity
- income
- occupation

3.5 Survey analysis and insights

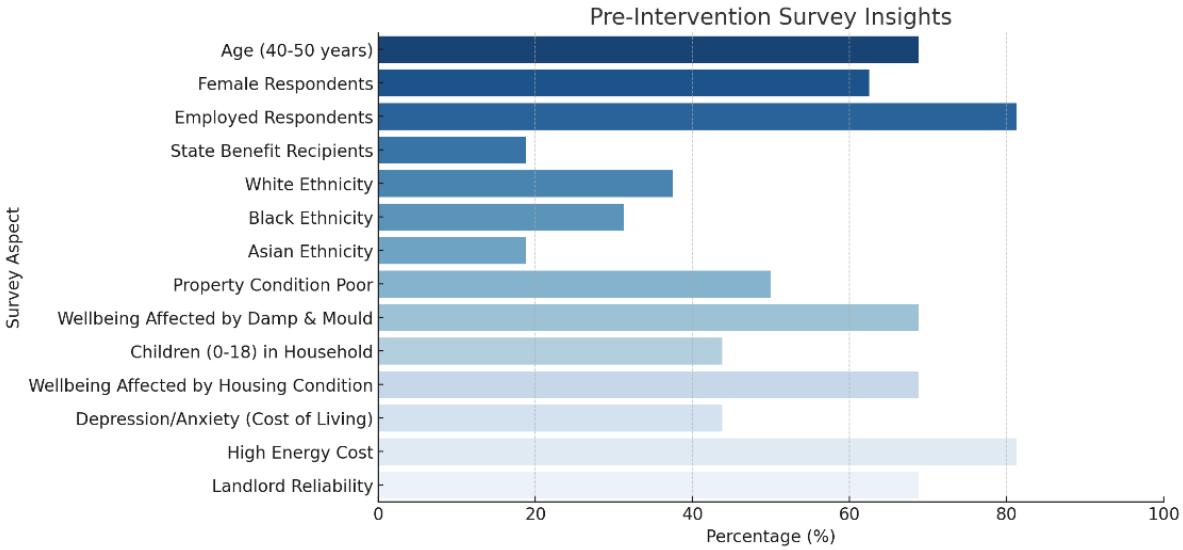

Fig 4 – (pre intervention survey)

Pre–Intervention Survey Insights

Age (40-50 years)	68.8%
Female Respondents	62.5%
Employed Respondents	81.3%
State Benefits Recipients	18.8%
White Ethnicity	37.5%
Black Ethnicity	31.3%
Asian Ethnicity	18.8%
Property Condition as Poor	50%
Wellbeing Affected by Damp & Mould	68.8%
Children (0-8) in Household	43.8%
Wellbeing Affected by Housing Condition	68.8%
Depression/Anxiety (Cost of Living)	43.8%
High Energy Cost	12.5%
Landlord Reliability	68.8%

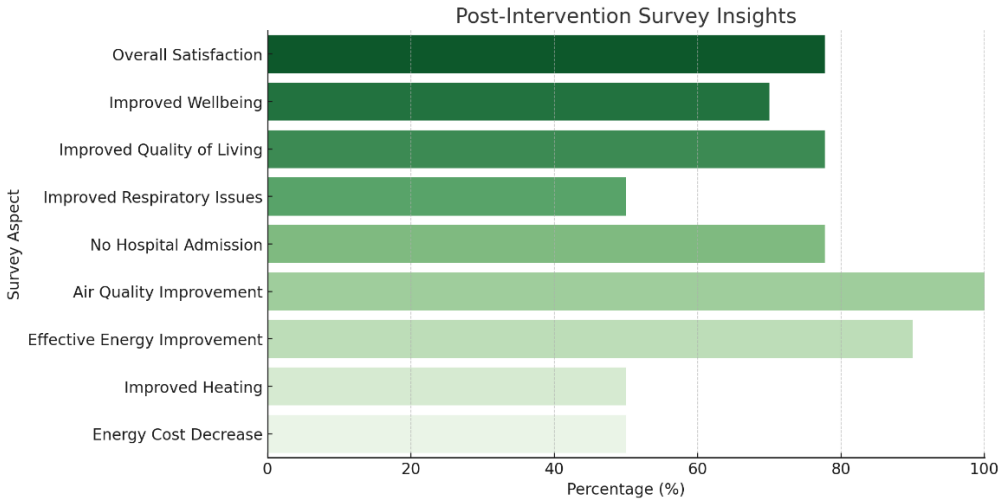

Fig 5 – (Post intervention survey)

Post-Intervention Survey Insights

Overall Satisfaction	77.8%
Improved Wellbeing	70%
Improved Quality of Living	77.8%
Improved Respiratory Issues	30%
No Hospital Admission	77.8%
Air Quality Improvement	100%
Effective Energy Improvement	90%
Improved Heating	50%
Energy Cost Decrease	50%

3.5.1: Pre-intervention findings

The age range of respondents varied from 29 to 61 years, but the majority fell within the 40 to 50 age group, making up 68.8% of the total respondents. This indicates that middle-aged adults were the most represented demographic in the survey.

In terms of gender distribution, there were more female respondents, accounting for 62.5%, compared to male respondents, who made up 37.5%.

Regarding employment status, 81.3% of respondents were in some form of employment, while 18.8% were on state benefits due to health or disability conditions. This suggests that a significant portion of the respondents were engaged in the workforce, but a notable percentage relied on government support.

Since Luton is a multicultural town, the ethnic diversity of respondents reflected the major ethnic groups in the area. The survey recorded 37.5% of respondents as White, but no distinction was made between British White and other White European groups. The Black ethnic group accounted for 31.3%, while the Asian ethnic group made up 18.8%.

When assessing the condition of housing before intervention, 50% of respondents described their property condition as poor, whereas 25% considered it good, and another 25% described it as fair. The presence of damp and mould was a major concern, with 68.8% of respondents stating that their wellbeing was affected by these issues. However, 12.5% reported no impact, and 18.8% were unaware of any effects.

A key aspect of the survey was to understand how the condition of housing affected vulnerable groups, particularly children. It was found that 43.8% of respondents had children aged 0 to 18 years living with them in the same property.

When asked about the overall impact of housing conditions such as leaks and mould on wellbeing, 68.8% confirmed that their wellbeing was directly affected. Meanwhile, 12.5% said there was no impact, and 18.8% were unsure.

Financial stress was also explored, particularly in relation to the high cost of living. Among respondents, 43.8% reported experiencing depression or anxiety due to financial pressures, while 25% said they sometimes felt this way. However, another 25% stated that they did not experience such mental health issues.

The cost of energy was another significant concern. Over the past year, 81.3% of respondents reported experiencing high energy costs, while only 12.5% stated that they did not face increased energy expenses.

In terms of landlord responsiveness, 68.8% of respondents said they could somewhat rely on their landlord to address serious heat loss issues in their property. A smaller percentage, 18.8%, reported that they could rely a lot on their landlord, while 12.5% said they could only rely a little.

3.5.2: Post-intervention results

Following the intervention, there was a noticeable improvement in various aspects of living conditions, wellbeing, and energy efficiency.

Satisfaction levels among respondents were high, with 77.8% stating that they were satisfied with the improvements made to their property. Additionally, 22.2% reported being very satisfied, indicating a general sense of contentment across all respondents.

The intervention also had a positive effect on physical and mental wellbeing. A significant 70% of respondents stated that their wellbeing had somewhat improved, while 20% reported a major improvement. However, 10% of respondents did not notice any changes in their physical and mental health.

Improvements in the quality of living were also evident. About 77.8% of respondents acknowledged that the enhancements to their property had somewhat improved their comfort and overall quality of living. Additionally, 11.1% noted a significant improvement, whereas another 11.1% said they had not experienced any change.

Respiratory health was another key focus of the survey. Among respondents, 30% reported that their respiratory issues, such as asthma or bronchitis, had somewhat improved after the intervention. Meanwhile, 20% stated with certainty that their respiratory health had improved.

Hospital admissions were examined within the scope of the WHH initiative. Most respondents, 77.8%, confirmed that no one in their household had been admitted to the hospital during the WHH project. However, 11.1% preferred not to disclose this information, while another 11.1% confirmed that someone in their household had been hospitalized due to health conditions caused by cold or damp living conditions.

One of the most significant outcomes of the intervention was the improvement in indoor air quality. Every respondent (100%) confirmed that indoor air quality had improved following the intervention.

The effectiveness of the energy improvements was also evaluated. A large majority, 90% of respondents, agreed that the energy efficiency measures taken were somewhat effective, while 10% considered them to be very effective.

Heating improvements were another critical area of assessment. Half of the respondents (50%) stated that heating in their home had somewhat improved, while 40% reported that their heating system now heated up faster. However, 10% of respondents said they had not noticed any change in heating performance.

Despite the energy efficiency improvements, the impact on living costs was mixed. A substantial 90% of respondents stated that their overall living costs had not decreased as a result of the housing improvements. Only 10% reported experiencing a reduction in their living costs. This suggests that while energy efficiency measures may help lower bills, broader economic factors such as inflation and rising costs of goods and services continue to influence household expenses.

Financial strain remained a concern for many respondents. About 60% said there had been no reduction in their financial strain following the housing improvements. However, 40% noted a slight decrease in financial

pressure, suggesting that the intervention had some positive financial impact for a portion of the respondents.

When analysing changes in energy costs, 50% of respondents reported a decrease in their energy bills within two months of the intervention. On the other hand, 40% of respondents stated that their energy bills remained unchanged. This indicates that while energy efficiency measures contributed to cost savings for some households, others may not have seen an immediate financial benefit due to varying energy consumption patterns or other influencing factors.

3.5.3: Radar chart showing project performance metrics of the intervention effort.

In showing a pictorial analysis of the outcome of the intervention, radar chart effectively highlights improvements, declines, or unchanged aspects by comparing both the pre and the post datasets—one representing the baseline (pre-intervention) and the other the outcome (post-intervention).

The comparison is made by analysing the spread and shape of the data points; a larger area generally signifies improvement, while a contraction suggests decline.

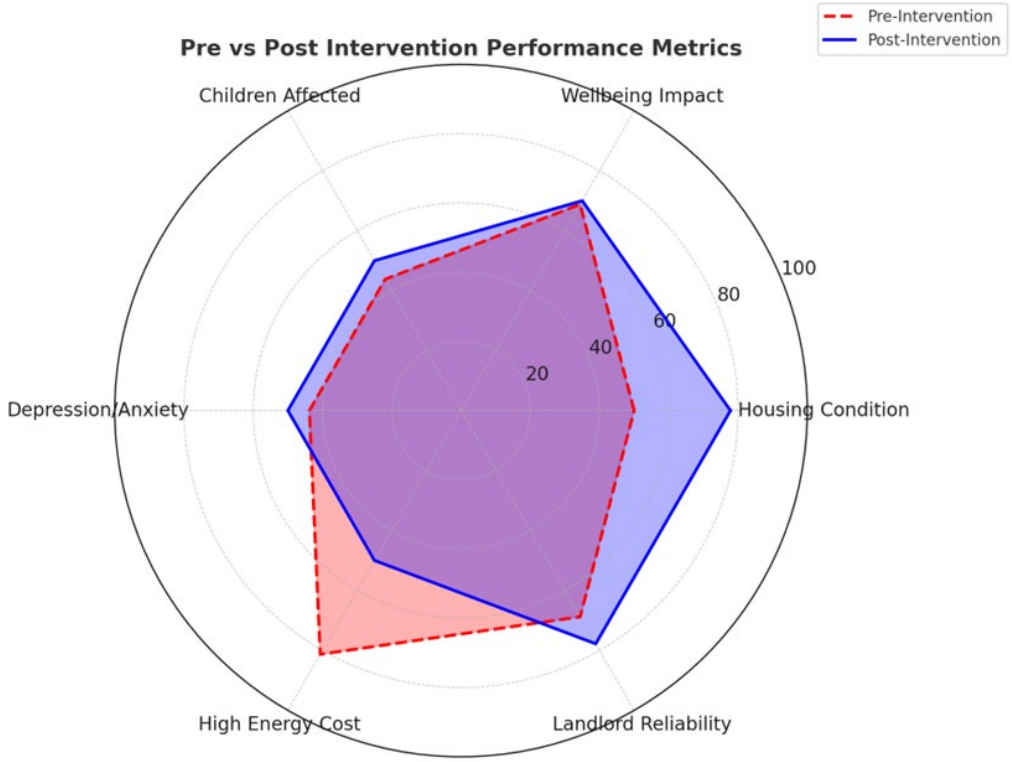

Fig 4: Radar chart comparing performance metrics before and after the intervention.

Pre vs Post Intervention Performance Matrix

	Pre	Post
Housing Condition	50%	77.8%
Wellbeing Impact	68.8%	70%
Landlord Reliability	68.8%	77.8%
High Energy Cost	81.3%	50%
Depression/Anxiety	43.8%	50%
Children Affected	43.8%	70%

The blue shaded area represents post-intervention improvements, while the red area represents pre-intervention conditions. You can see significant positive changes, especially in landlord reliability, wellbeing impact, and housing conditions.

3.5.4: Additional insights from the radar chart analysis

Housing condition improvement

Before the intervention, 50% of respondents rated their housing condition as poor, with issues like dampness and mould. Post-intervention, satisfaction with housing conditions significantly improved to 77.8%. This indicates that the physical repairs and upgrades had a direct positive impact on living conditions.

Wellbeing impact

Pre-intervention, 68.8% of respondents reported that their wellbeing was negatively affected by their housing conditions. After improvements, 70% of respondents felt some improvement in their wellbeing, showing that enhanced housing conditions contributed to better physical and mental health.

Children affected

At baseline, 43.8% of respondents (7 out of 16) reported having children aged 0–18 living in their households. Following the intervention, these children are expected to benefit from improved air quality and a reduction in mould and dampness, which in turn may lower their risk of respiratory issues and promote healthier living conditions.

Depression and anxiety

The initial survey showed that 43.8% of respondents experienced depression or anxiety due to financial stress and housing conditions. After the intervention, 50% reported improved mental wellbeing, likely due to enhanced heating, better air quality, and reduced household stress.

High energy costs

One of the most significant issues pre-interventions was the high cost of energy, with 81.3% of respondents struggling with energy bills. After the intervention, only 50% still reported concerns, showing that energy efficiency improvements led to noticeable cost reductions for many, though some still faced financial challenges.

Landlord reliability

Before the intervention, 68.8% of respondents said they could "somewhat rely" on their landlord to address issues like heat loss, with others expressing lower confidence. Post-intervention, this metric improved to 77.8%, suggesting that interventions encouraged landlords to be more responsive and proactive in maintaining property conditions.

3.5.5: Key takeaways

- **Major improvements:** housing conditions, landlord responsiveness, and mental wellbeing showed the most significant improvements.
- **Energy costs remain a concern:** while 50% reported a decrease in energy bills, a significant portion still did not see a reduction, highlighting the need for ongoing energy cost management solutions.
- **Children benefit from improved housing:** with better air quality and reduced mould exposure, children in these households are now living in healthier environments.
- **Mental wellbeing is strongly linked to housing conditions:** addressing housing issues led to measurable improvements in anxiety and depression levels among residents.

3.6: Cost-effectiveness evaluation of the project

The WHH initiative aims to enhance living conditions by improving insulation, heating efficiency, and indoor air quality, particularly for vulnerable populations such as low-income households and elderly residents. This cost-effectiveness evaluation assesses financial investments, health benefits, energy savings, and overall quality of life improvements.

Using a cost-benefit analysis, the study examines the project costs, against benefits realized such as reduced healthcare costs, lower energy bills, and improved well-being.

The cost-effectiveness ratio suggests that for every pound spent, multiple pounds are gained in benefits, making the project a financially sound investment.

3.6.1: Healthcare savings from housing improvements

Poor housing conditions, particularly cold and damp environments will significantly contribute to respiratory and cardiovascular illnesses such as asthma, pneumonia, and heart disease. Studies consistently show that improving home insulation and heating leads to reduced hospital admissions and fewer doctor visits.

The average healthcare cost per affected household member is estimated at £500 to £1,000 annually, covering expenses such as inhalers, antibiotics, and treatments for cardiovascular conditions.

With an estimated average of 3.5 individuals per household and with 13 properties already improved, approximately 45 people have benefitted. Once an additional three properties under renovation are completed, the total number of individuals impacted will rise to 56.

Based on these figures, if each of the 56 individuals saves a conservative £500 per year in healthcare costs, (by not visiting the hospital) the total annual healthcare savings would be approximately £28,000. This represents a 50 to 75% reduction in healthcare costs per household following home improvements.

This is a conservative estimate, as it does not fully account for indirect savings such as reduced medication use, fewer sick days, and overall improvements in quality of life and productivity.

3.6.2: Social and economic benefits

This category includes increased productivity, reduced financial stress, and improved quality of life. Warmer homes mean people are healthier, leading to fewer missed workdays and greater household stability.

- **Reduced work absenteeism:** Warmer homes lower illness rates, allowing adults to work more consistently.
- **Lower reliance on social benefits:** Fewer emergency heating grants and financial aid are needed.
- **Mental health improvement:** Reduced stress from high energy bills leads to better mental well-being.
- **Total social/economic savings estimation:** A reasonable assumption is that affected households experience indirect financial benefits of around **£300-£400 per year**.

3.6.3: **NHS cost savings and social return on investment (SROI)**

The WHH initiative has significantly contributed to financial savings for the NHS by improving housing conditions, particularly by reducing exposure to damp and cold. These improvements have led to a measurable reduction in emergency respiratory hospitalizations, easing pressure on frontline healthcare staff.

3.7: Key findings from the analysis

3.7.1: Estimated NHS cost savings

For 13 compliant properties, the estimated savings for the NHS amount to £120,926. Once all 16 properties are upgraded, the projected savings increase to £148,832. These figures represent the estimated reduction in NHS expenditure on hospital admissions and treatment costs for respiratory-related conditions attributed to poor housing conditions.

- NHS reference costs for respiratory care vary, with hospital admission for a COPD exacerbation ranging from approximately £1,700 to £3,000, ventilated ICU care for respiratory failure costing around £1,500 to £2,500 per day, and pulmonary rehabilitation estimated at £300 to £500 per patient course.

An average NHS cost for treating respiratory condition and after care support is around £9,302.

3.7.2: WHH investment per property** (not cost of refurbishment)

The investment required per property varies depending on the number of properties upgraded. For 13 compliant properties, the WHH investment per property is £5,269, leading to a total investment of £68,500.

When all 16 properties are upgraded, the cost per property decreases to £4,281, bringing the total investment to £68,500.

***Note:** WHH investment per property typically refers to the cost of identifying non-compliant properties, rather than the expense of carrying out refurbishments to bring them up to standard.

This means the investment covers activities including:

- energy assessments (such as EPC evaluations, property surveys)
- compliance checks against MEES regulations
- consultancy fees for advice on necessary improvements
- administrative costs related to reporting and regulatory compliance

The actual cost of making a property compliant (such as insulation, heating upgrades and window replacements) is separate and varies significantly based on the property's condition and the required upgrades.***

3.7.3: Social return on investment (SROI)

SROI measures the financial benefit to the NHS per £1 spent on improving housing conditions. For 13 properties, every £1 invested results in NHS savings of £1.78. For 16 properties, the savings increase to £2.19 per £1 invested.

Breakdown of the calculation methodology

Step 1: NHS cost savings per property
The savings for 13 properties total £120,926, while the projected savings for 16 properties are £148,832. The estimated savings per property remain consistent at £9,302, calculated as £120,926 divided by 13 and £148,832 divided by 16. This suggests that each upgraded property contributes approximately £9,302 in savings to the NHS.

Step 2: WHH investment breakdown
The total investment allocated for the WHH compliance assessment is £68,000. This equates to an average cost of £5,231 per property for the identification of non-compliant properties across a portfolio of 13 units. If extended to 16 properties, the per-property cost decreases to £4,250, benefiting from potential economies of scale.

Step 3: Social return on investment (SROI) calculation
SROI is calculated as the total NHS savings divided by the total WHH investment. For 13 properties, dividing £120,924 by £68,500 results in an SROI of 1.78, meaning the NHS saves £1.78 for every £1 spent. For 16 properties, dividing £148,832 by £68,500 results in an SROI of 2.19, meaning the NHS saves £2.19 for every £1 spent.

The Social Return on Investment (SROI) formula is:

$$SROI = \frac{\text{Total NHS Savings}}{\text{Total MEES Investment}}$$

For 13 properties:

$$SROI = \frac{£120,926}{£68,500} = 1.78$$

For 16 properties:

$$SROI = \frac{£148,832}{£68,500} = 2.19$$

This means that for every £1 spent on MEES investment, the NHS saves £1.78 in the case of 13 properties and £2.19 in the case of 16 properties.

The Social Return on Investment (SROI) Formula is:

SROI = Total NHS Savings
Total MEES Investment

For 13 Properties:

SROI = £120,926 = 1.78
£68,500

For 16 Properties:

SROI = £148,832 = 2.19
£68,500

Summary

Metric	For 13 Properties	For 16 Properties
NHS Savings	£120,926	£148,832
Investment (Public Health Funding)	£68,500	£68,500
Savings per Property	£9,302	£9,302
Investment per Property**	£5,231	£4,250
SROI (NHS savings per £1 spent)	**£1.78**	**£2.19**

3.7.4: Sustainability strategy for the WHH project

To ensure the long-term success and impact of the WHH project, a comprehensive sustainability strategy is essential. This approach encompasses financial, operational, community, and environmental sustainability.

a. Financial sustainability

- **Partnerships and funding**: secure ongoing financial support through collaborations with government agencies, energy providers, and health organizations that benefit from reduced healthcare and social care costs.
- **Grants and subsidies:** actively pursue grants and funding opportunities related to energy efficiency and public health initiatives.
- **Social impact investments:** engage with investors interested in funding projects that deliver measurable social and economic benefits.
- **Section 19 of the Procurement Act 2023:** we must apply Section 19 of the Procurement Act 2023 under the principle of 'most advantageous tender' (MAT). This principle allows authorities to

evaluate and award contracts based on overall value rather than solely on cost.

It empowers decision-makers within the council to consider a broader range of factors, including Social Value benefits such as sustainability, environmental impact, community benefits, and ethical considerations before awarding contracts.

Strengthening financial sustainability through a self-funding model
Ideally, to ensure the long-term financial sustainability of the WHH project, a self-funding model would be developed by strategically leveraging financial penalties from the private housing sector. These funds would be reinvested to expand the project's reach and enhance its impact.

b. Systematic use of financial penalties for project funding

- **Fines from non-compliant landlords**
  Penalties collected from landlords who fail to meet minimum energy efficiency standards - such as properties with inadequate insulation - would be redirected into the project's funding pool. A tiered penalty system would be introduced, requiring repeat offenders to contribute higher amounts, thereby promoting accountability and increasing resources for home improvements.

  Additionally, licensing fees and other housing-related penalties will be explored as supplementary funding sources.

- **Energy efficiency non-compliance fines**
  Fines imposed on businesses and institutions that do not comply with local or national energy efficiency regulations would be allocated to support the project's expansion.

This structured, penalty-based funding mechanism could provide a reliable revenue stream, enabling the WHH project to continue delivering socio-economic and health benefits. It could also strengthen the local authority's commitment to environmental sustainability and corporate social responsibility.

However, it's important to note that income generated from these penalty charges (CPs) alone will not be sufficient to fund a dedicated officer focused exclusively on proactive enforcement of the MEES. Therefore, MEES-related duties will be integrated into the existing core responsibilities of Private Sector Housing team (PSH).

It's hoped that Public Health (PH) will recognise the value of this integrated approach and consider providing additional funding to support these efforts.

4. Project feedback and case study analysis

4.1: Overall project impact

The intervention to improve housing conditions, particularly in addressing damp, mould, and heating inefficiencies, has had a notable positive impact on tenants' wellbeing. The post-intervention survey results indicate improvements in housing satisfaction (77.8%), mental and physical wellbeing (70%), and indoor air quality (100%). Additionally, 50% of respondents noticed a reduction in their energy bills, suggesting that energy efficiency measures were somewhat effective.

However, challenges remain, as 90% of respondents stated their overall cost of living had not decreased despite energy efficiency improvements. This suggests that external economic factors, such as inflation and increased living expenses, continue to impact households significantly.

4.2: Key achievements

- **Housing conditions & wellbeing**: a clear improvement in property conditions, leading to better physical and mental health.
- **Landlord engagement**: increased reliability of landlords in addressing tenant concerns (77.8%).
- **Energy efficiency success**: while not universal, a 50% decrease in energy bills among tenants demonstrates the effectiveness of interventions.

- **Air quality improvement**: 100% of respondents acknowledged enhanced air quality, likely due to damp and mould remediation efforts.

4.2.1: WHH project achievement

One of the key achievements of the WHH project is being nominated and awarded the 'Wellbeing Project of the Year 2025' by our Housing Service department. This recognition highlights the dedication and impact of everyone involved.

4.3: Challenges and areas for improvement

- **Financial relief gaps**: while heating efficiency improved, financial strain remains high, with 60% of respondents reporting no reduction in financial burden.
- **Energy costs**: although 50% of tenants reported a decrease in energy bills, a significant 40% saw no change, indicating the need for further efficiency measures or financial assistance programs.

4.4.1: Case study 1: a tenant's experience before and after the intervention

Case study 1: a family struggling with damp and energy costs

Background

A tenant with two young children reported that their rented property suffered from persistent damp and mould, which led to frequent respiratory issues affecting members of the household. They also struggled with high energy costs, making it difficult to keep their home warm during winter.

Pre-intervention challenges:

- severe mould growth affected air quality and health
- the property was cold due to poor insulation, leading to excessive energy use
- high financial strain due to energy bills and medical expenses

Post-intervention outcomes:

- the damp and mould issues were addressed, leading to improved air quality
- energy-efficient upgrades reduced heating inefficiencies, allowing the home to warm up faster
- the tenant reported an improvement in a household member's respiratory health, resulting in fewer hospital visits
- energy bills decreased, although overall financial pressure remained due to external costs

4.4.2: Case study 2: a landlords experience before and after the intervention

Case study 2: landlord support in Luton North

A landlord in Luton North faced ongoing energy efficiency challenges due to deteriorated cavity wall insulation, resulting in poor heat retention and rising energy costs for tenants. Concerned about meeting MEES, he sought professional guidance through the project to improve the property's performance and ensure regulatory compliance.

Implementation

Following recommendations from MEES officers, the landlord replaced the outdated cavity wall insulation with a modern, high-performance alternative. The installation was carried out by qualified professionals and completed efficiently, ensuring minimal disruption to tenants.

The insulation upgrade significantly improved the property's energy efficiency, increasing its EPC rating by one band. This resulted in several key benefits:

- **lower energy bills**: improved insulation reduced heating costs, making energy expenses more affordable for tenants
- **enhanced comfort**: the property retained heat more effectively, providing a warmer and more comfortable living environment

- **regulatory compliance**: the landlord met MEES requirements, avoiding potential fines and ensuring the long-term rental viability of the property

Landlord's perspective
Reflecting on the experience, the landlord emphasized the value of professional guidance in navigating energy efficiency upgrades. While the process required an initial investment, the long-term benefits, including lower costs, increased tenant satisfaction, and regulatory compliance, made it a worthwhile decision.

He also highlighted the importance of MEES officer visits, which provided clarity on necessary improvements and helped ensure the most effective solutions were implemented.

This case study highlights the importance of housing interventions in improving not just physical conditions but also health and financial stability. While the project successfully tackled many core issues, further support is needed to address rising living costs beyond energy expenses.

4.4.3: Case study 3: tribunal decision upholding our financial penalty for MEES breach

Background
During the first MEES pilot project in 2023, we issued financial penalties against a single landlord for failing to comply with the MEES regulations on 21 properties across Luton.

The penalties were imposed due to breaches where the properties did not meet the required energy efficiency standards, resulting in enforcement action under the Energy Efficiency (Private Rented Property) (England and Wales) Regulations 2015.

The landlord challenged the penalties in a tribunal court, arguing that the fines were improperly issued and excessive. The case was heard by Judge Anthony Snelson on 22 January 2025.

This was a continuation of the enforcement process that began in 2023 was made possible by the continued funding from Luton Public Health, which was essential to sustaining the project's progress and impact.

Tribunal proceedings
During the tribunal, we presented a comprehensive witness statement detailing the investigative process, the rationale for issuing the financial penalties, and the structured approach taken to ensure fair and proportionate enforcement.

Key aspects of our approach

- Conducting thorough property inspections to confirm MEES non-compliance.
- Providing the landlord with opportunities to rectify the breaches before enforcement action was taken.
- Applying a consistent and fair penalty structure per property.
- Reviewing and adjusting the penalty amount where appropriate.

Tribunal decision

Judge Anthony Snelson ruled in our favour, dismissing the landlord's appeal. In his judgment, the judge made the following key observations:

"In my view, the council acted properly in serving the original penalty notice and in setting the penalty at such per property."

"I further consider that the council acted properly in reviewing and adjusting the penalty. If anything, the adjustment was on the generous side."

"I find nothing to criticise in the council's decision-making in this case. No ground under the 2015 Regulations, reg 43 is made out. The appeal must be dismissed."

Outcome and impact

The tribunal's decision reinforced the legitimacy of our enforcement actions under MEES regulations. This ruling set a strong precedent, confirming that:

- Our enforcement procedures are fair, reasonable, and legally sound
- financial penalties are an effective tool for ensuring compliance with MEES regulations
- properly documented investigations and well-prepared witness statements are critical in upholding **enforcement decisions**

Lessons learned

1. **The Importance of clear documentation:** our structured approach and well-documented decision-making process were key factors in the tribunal's ruling.
2. **Proportionality in enforcement:** the judgment acknowledged that our penalty structure was fair, even suggesting that the penalty adjustment was generous.
3. **Strong legal and procedural compliance:** the case highlighted the importance of adherence to legal frameworks when issuing and enforcing MEES penalties.

5. Lessons learned from the project evaluation

Key learnings

- **Impact of housing improvements on health**
  The project confirmed a strong correlation between housing conditions and respiratory-related health issues. By improving the MEES in properties, significant reductions in NHS costs were observed, reinforcing the importance of targeted housing interventions to alleviate healthcare burdens.

- **Cost-effectiveness and SROI**
  The analysis demonstrated that for every £1 spent on MEES implementation, NHS savings ranged from £1.78 to £2.19. This highlights the value of proactive investment in housing improvements as a means to reduce long-term healthcare expenditures.

- **Data-Driven decision-making**
  Collecting and analysing real-world data enabled a more precise understanding of the financial and health benefits associated with MEES improvements.
  The results from the evaluation are overwhelmingly positive, albeit with the caveat that the robustness of data might have been improved by access to NHS data and by leaving a longer period between pre- and post-intervention questionnaire.

- **Stakeholder collaboration:**
  Collaboration with key stakeholders, landlords, property agencies, tenants and other departments within the local authorities was crucial in achieving the project's objectives. Engaging multiple stakeholders early in the process through our regular landlord forums and tenant's engagement letters etc helped align goals and improve project outcomes.

5.1: Challenges in implementation

- **Funding constraints**: securing sufficient investment for MEES implementation remains a challenge. Future initiatives should explore additional funding sources or policy incentives to sustain continuous improvements.
- **Tenant engagement:** while improvements positively impacted tenants' health, some residents required additional support and communication to fully understand and benefit from the changes.

- **Tenants fear of victimisation:** we also observed tenant reluctance to engage with the survey because of landlord victimisation behaviour toward them.
- **Supply chain issues:** three properties are still under WIP as a result in the delay in material procurement and contractor availability which affected project timelines.

5.2: Recommendations for future projects

- Strengthen partnerships with local health bodies to embed housing interventions into public health strategies.
- Secure diversified funding sources to ensure long-term sustainability.
- Enhance tenant communication and education initiatives to increase engagement and uptake.
- Engaging landlords and educating them on ECO3 funding options and other government funding initiatives.

By addressing these factors, future housing improvement projects can further optimise cost savings and health benefits, ensuring lasting positive impacts for residents and the NHS alike.

6: Conclusion and recommendations

To validate the assumption that each compliant property contributes £9,302 in NHS savings, further analysis should be conducted using NHS respiratory hospitalisation data. There's potential for an even greater ROI if per-property investment costs can be optimised, potentially improving the SROI beyond 2.19.

If the number of upgraded properties increases beyond 16, a revised SROI model should be developed to account for potential economies of scale.

Impact of housing intervention

Survey results indicate that energy efficiency improvements had a largely positive impact on residents, leading to:

- increased satisfaction levels
- improved mental and physical health
- better indoor air quality
- enhanced heating performance

However, financial strain and high living costs remain a concern, highlighting the broader economic challenges that persist despite energy efficiency improvements.

Broader Implications

While the financial burden of respiratory diseases on the NHS is significant, data specifically linking hospital admissions and treatment costs to poor housing conditions remains limited. However, the strong correlation between substandard housing and respiratory illnesses reinforces the need for ongoing housing improvements to help reduce NHS expenditure and improve public health.

Acknowledgements

I would like to extend my heartfelt appreciation to Public Health Luton for fully funding the WHH initiative throughout its one-year duration. Their commitment to improving housing conditions and promoting public health has been instrumental to the success of the project.

However, continued investment in initiatives like WHH is essential to sustaining long-term public health outcomes and achieving broader impact.