Ksquared

CERTIFICATE OF LAWFULNESS

FLATS A & B 45 LOWFIELD ROAD, LONDON, CAMDEN, NW6 2PP

SUSTAINABLE RETROFIT

JUNE 2024

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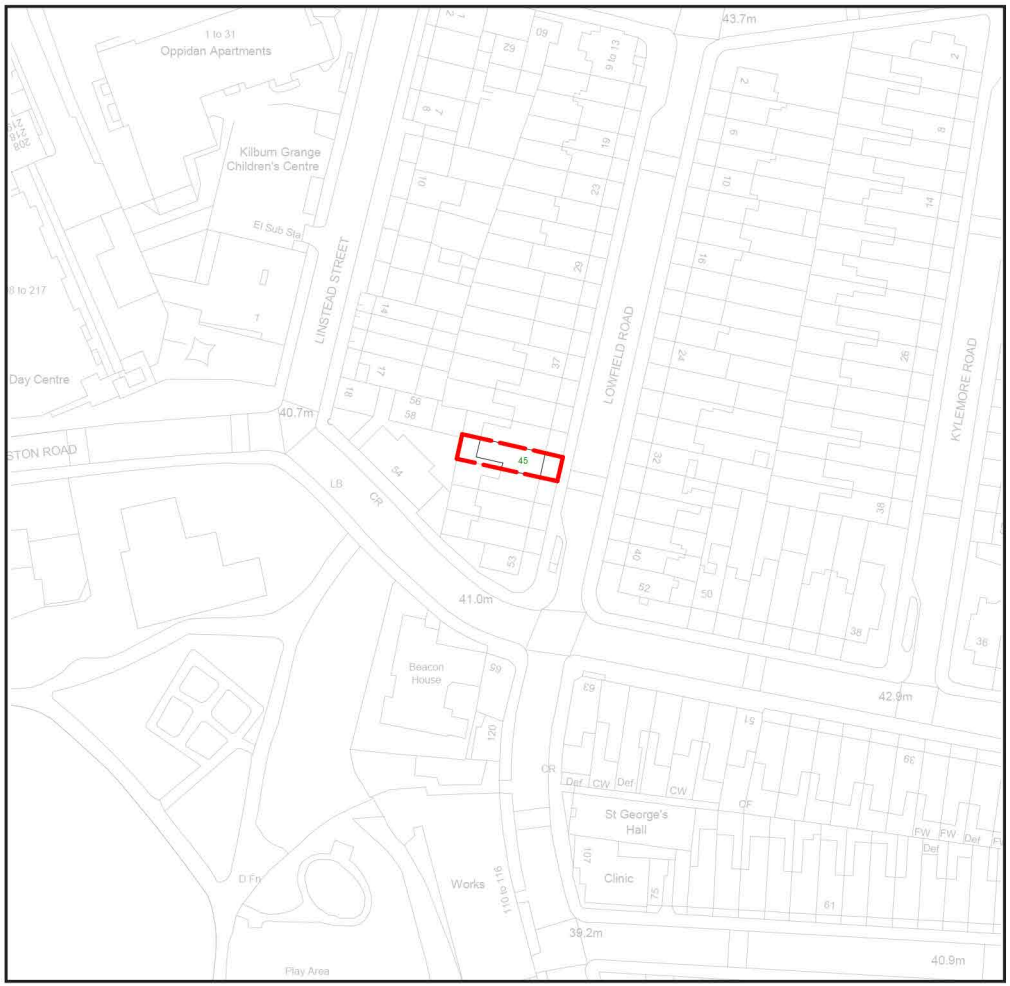
LOCATION PLAN

All dimensions shown are in millimeters unless otherwise stated. Only figured dimensions to be taken - not scaled



SITE PLAN

KEY

SITE BOUNDARY

0 50 125 m

CONTEXT

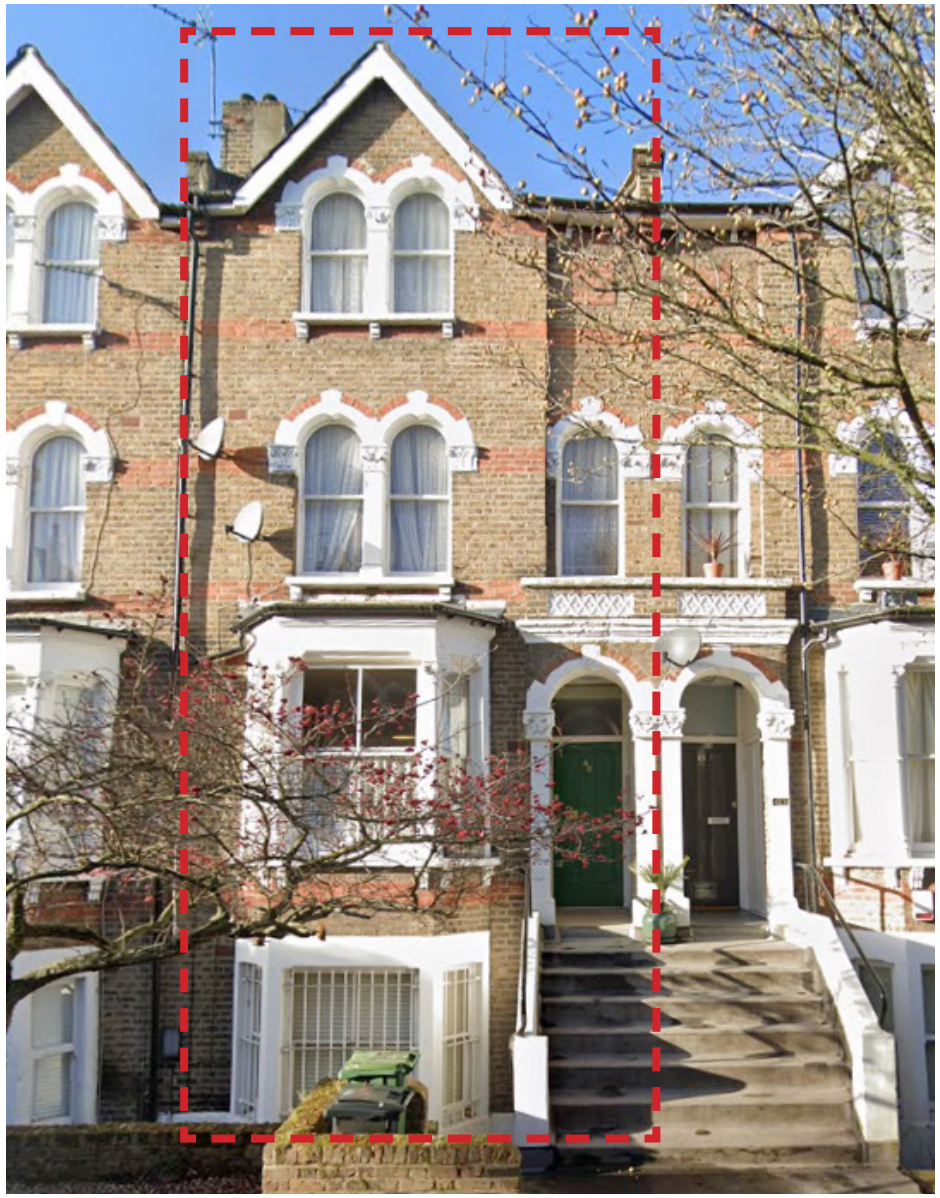
The borough of Camden is renowned for its rich cultural heritage, diverse communities and flourishing art and music scenes. The vibrancy of the area is emphasised by its many picturesque canals, streets and green spaces which provide a dynamic blend of natural beauty and urban excitement when paired with its eclectic market spaces.

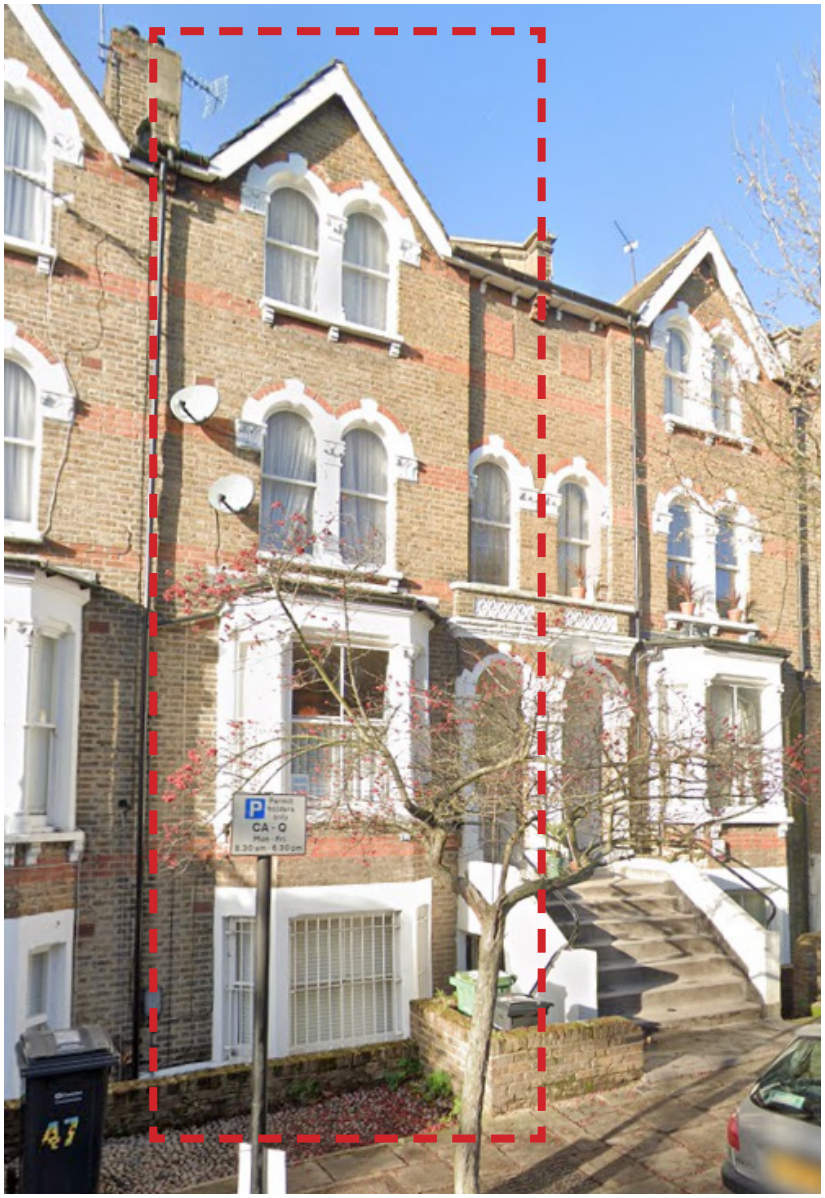
Over the years the area has experienced significant residential development, reflecting its diverse and dynamic character. As such, it continues to offer a range of housing options to its residents in northwest London, from its modern high-rise apartments to its historic Victorian terraces.

Over time, many of its historic houses have become less equipped to handle the pressures of climate change and are no longer eco friendly; this is the case of 45 Lowfield Road. We see a potential in supporting its longevity by the implementation and renovation of the spaces inside.

Furthermore, In 2019, Camden declared a climate and ecological emergency. This recognised the threat of climate change and the irreversible damage to our planet it may cause. This document sets out our approach to the retrofit works and illustrates how our proposals align with the council's planning policy outlined in Camden's Climate Action Plan 2020-2025: an outline of projects and activities the council has programmed to help achieve net zero by 2030.

EXISTING AND PROPOSED ELEVATION - remains unchanged





PROPERTY OVERVIEW

The subject property is a mid-terrace maisonette built before 1900, featuring solid walls and a flat roof cavity extension to the rear. It includes a solid floor and single-glazed bay windows. Flat A is located on the ground floor and B is a mid floor flat.

Architectural Details:

1. Walls and Roof:
   - The main structure has solid walls.
   - The rear extension consists of cavity walls with a flat roof.
   - Based on a non-intrusive survey, it is assumed that neither the walls nor the roof are insulated.

2. Windows and Doors:
   - The property has a mixture of double glazing and single glazing.
   - Remaining windows are wooden single glazed.
   - The main entrance features a solid timber door.

3. Flooring:
   - The floor is solid throughout the property.

4. Heating:
   - The property is heated by gas boilers with radiators installed throughout.

The following Policies are most applicable to this application:

Policy CC1 Climate Change Mitigation: will require alld evelopment to minimise the effects of cclimate chance and ecourage all developments to meet the highest feasible environmental standards that are financially viable during construction and occupation.

The council will promote zero carbon development and require all development to reduce carbon dioxide emissions through following the steps in the energy hierarchy will require all major development to demonstrate how London Plan targets for carbon dioxide emissions have been met: will ensure that the location of development and mix of land uses minimise the need to travel by car and help to support decentralised energy networks; will support and encourage sensitive energy efficiency improvement to existing buildings; will require all proposals that involve substantial demolition to demonstrate that it is not possible to retain and improve the existing building; and will expect all developments to optimise resource efficiency.

Policy CC2 Adapting to climate change: The Council will require development to be resilient to climate change. All development should adopt appropriate climate change adaptation measures such as: a. the potection of existing green spaces and promoting new appropirate green infrastructure; not increasing, and wherever possible incorporating bio-diverse roofs, combination green and blue roofs and green walls where appropriate; and measures to reduce the impat of urban and dwelling overheating, including applcation of the cooling hierarchy.

Any development involving 5 or more residential units or 500 sqm or more of any additional floorspace is required to demonstrate the above in a Sustainability Statement.

Conclusion

Proposed Retrofit Works Policy D2 Heritage and Conservation: We have worked hard to ensure the heritage of the buildings are retained and any retrofit works are sympathetic to the existing features implementing least harm. As such, we only short listed retrofit measures which aligned to this, which resulted in the following retrofit measures being proposed; Double-glazing, ventilation, draught proofing, cavity wall insulation, flat roof insulation.

Policy CC1 Climate Change Mitigation & Policy CC2 Adapting to climate change: The retrofit works proposed align with both policies. The retrofit works package proposed are to the existing building and will not decrease any of the site's current external offerings/services connections. The proposed retrofit package will reduce carbon by £221.09/tCO_2 and £281.94/tCO_2. This retrofit package also follows a whole house approach focusing on improving the external envelope making the building ready for any further energy heating replacements in the future.

SOCIAL HOUSING DECARBONISATION FUND (SHDF) WAVE 2.1
45 Lowfield Road is a part of a selection of circa. 300 social homes in consortium of 9 Registered Providers, being retrofitted with grant funding from the Departments of Energy Security and Net Zero (DESNZ) also being key stakeholder. All homes are following best practice via PAS2035 / PAS2030 ensuring a detailed level of design and quality management is achieved on all homes on the programme.

EXISTING VALUE
45 Lowfield Road is of low/medium significance, deriving from its low aesthetic value (contributed to by its value as a terraced group), medium historic illustrative value as representative of mid-nineteenth century urban expansion in previously rural farmland, and low historic associative value as part of a development.

RETROFIT WORKS - ADDED VALUE
Each of the proposed retrofit and energy efficiency measures brings added value from various perspectives, including social, economical, and environmental considerations.

- Cavity wall insulation: This improves thermal efficiency, reducing heat loss and energy consumption, thus lowering utility bills for occupants. It also enhances indoor comfort by maintaining more stable temperatures. Socially, it contributes to a healthier and more comfortable living environment.

- Flat roof insulation: Enhances thermal efficiency, reducing heat loss through the roof and lowering energy bills. It also helps prevent moisture intrusion, extending the lifespan of the roof structure.

- **Double-glazing:** Offers numerous benefits, including improved energy efficiency, enhanced acoustic insulation, and increased security. It reduces heat loss, lowers energy bills, and decreases noise pollution, making homes more comfortable and secure. Additionally, double glazing minimises condensation.

- Ventilation: Proper ventilation improves indoor air quality by reducing moisture buildup and pollutants, promoting occupant health and well-being. It also helps prevent issues such as mould and mildew growth.

In summary, incorporating these proposed improvements offers multiple benefits, including:

- Reductions in Energy Use: Enhanced energy efficiency measures will lead to significant reductions in overall energy consumption.
- Reductions in Emissions Associated with Energy Use: By lowering energy use, we also decrease the associated carbon emissions, contributing to a healthier environment.
- Improvement in Internal Comfort: Upgrades will result in better temperature regulation and overall comfort for residents.
- Improvement of Indoor Air Quality (IAQ): Enhanced ventilation and air filtration systems will improve indoor air quality, promoting healthier living conditions.
- Elimination of Condensation, Damp, and Mould: Measures to control humidity and moisture will prevent issues with condensation, damp, and mould, ensuring a healthier living environment.
- Improvement in Energy Rating (e.g., SAP): These enhancements will improve the building's energy performance rating, reflecting its increased efficiency and sustainability.
- Improving the Usefulness or Sustainability of the Building: The proposed changes will make the building more functional and sustainable, aligning with modern environmental standards.
- Protecting the Building Against Decay or Deterioration: By addressing potential issues with decay or deterioration, the building's lifespan and integrity will be preserved.

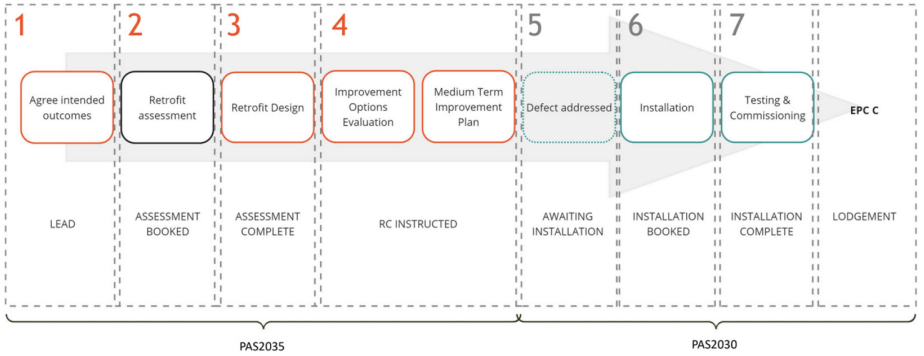
The proposals for 45 Lowfield Road align with the SHDF aims which include:

- Reducing Carbon Emissions by significantly decreasing carbon emissions from social housing by upgrading the energy efficiency of existing homes.
- Improving Energy Efficiency by enhancing the energy performance of social housing to achieve better insulation, reduce heat loss, and improve overall energy efficiency.
- Lowering Energy Bills by helping to reduce energy costs for tenants by making homes more energy-efficient, thus lowering heating and electricity bills.
- Enhancing Comfort and Health by improving living conditions by providing warmer, more comfortable homes, which can positively impact the health and well-being of residents.
- Supporting Economic Growth by stimulating economic growth by creating jobs and supporting the green economy through retrofit projects and related activities.
- Tackling Fuel Poverty by addressing fuel poverty by making energy costs more manageable for low-income households, ensuring that residents can afford to heat their homes adequately.
- Demonstrating Leadership in Sustainability by positioning social housing providers as leaders in the transition to a low-carbon, sustainable housing sector.
- Meeting Regulatory Standards by assisting social housing providers in meeting current and future regulatory requirements related to energy efficiency and carbon reduction.

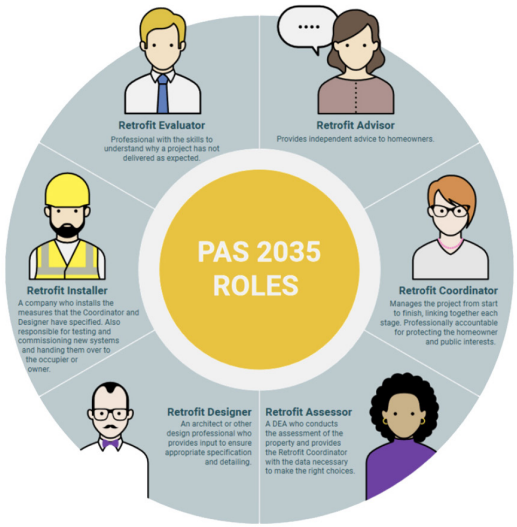
These aims collectively contribute to the broader goals of environmental sustainability, economic resilience, and social equity.

These proposed sustainable retrofit works will be delivered in line with PAS2035. This is a standard developed by the British Standards Institution (BSI) that outlines a comprehensive framework for the retrofit of domestic buildings. It is part of the UK government's strategy to improve energy efficiency in existing homes and reduce carbon emissions. PAS2035 covers all stages of the retrofit process, from assessment and design to installation and evaluation. It emphasises a whole-building approach, considering factors such as ventilation, moisture control, and thermal comfort to ensure that retrofits are effective, safe, and sustainable. The standard also defines the roles and responsibilities of various professionals involved in retrofit projects, ensuring quality and accountability throughout the process.

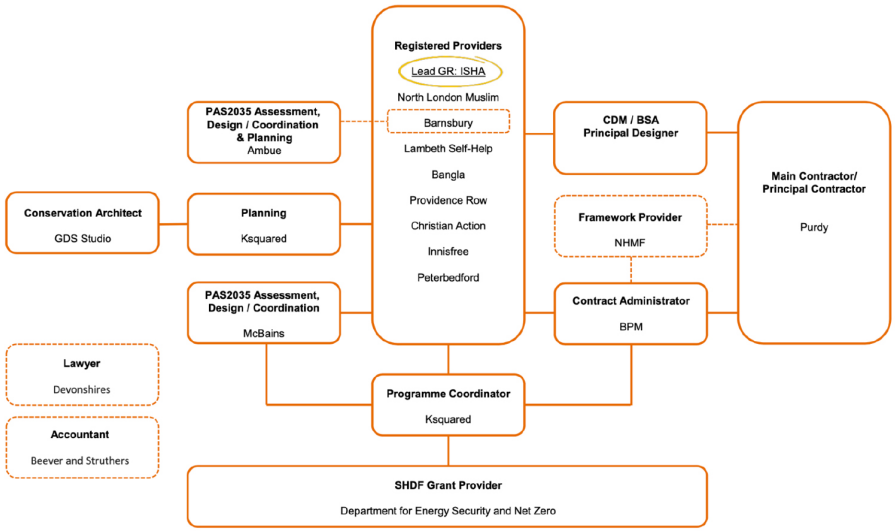
The PAS2035/2030 process being implemented on this project is as follows:



The PAS2035 process brings together various specialists, their roles are as detailed in the below diagram:



Team Profile:



KSquared: KSquared was founded to elevate living standards in housing and demonstrate that adopting green practices is the optimal path forward for social landlords. With KSquared's extensive network, in-depth knowledge, and strong credentials, we streamline every phase of an eco-retrofit, from bid writing to delivery. Recognising that each retrofit journey is unique, we assemble a hand-picked team to apply their expertise strategically, ensuring tailored solutions for every project.

McBains: Macbains is a leading property and construction consultancy with over 230 years of expertise. They provide a wide range of services including architecture, civil and structural engineering, building surveying, project management, and sustainability consulting. The company is known for its commitment to delivering high-quality, innovative solutions across various sectors such as social housing, healthcare, education, and urban regeneration. Their extensive experience and multidisciplinary approach ensure best practices and compliance with standards like PAS2035.

Ambue: Ambue helps Registered Social Landlords tackle the climate emergency with a PAS2035 compliant retrofit pathway.

BPM: BPM Project Management is a construction consultancy with over 30 years of expertise. They provide comprehensive project management services across various sectors.heir services focus on delivering projects on time and within budget, ensuring high standards of quality and value for money through extensive knowledge and experience.

Purdy: Purdy Contractors is a well-established mechanical, electrical, heating, property services, and renewable energy contractor with 40 years of experience. Purdy has a strong commitment to clean energy contracting and continues to invest in developing its knowledge and expertise in renewable energy, regeneration, and regulation technologies.

GDS: Gbolade Design Studio is an award-winning architecture practice specialising in sustainable design and development. The firm focuses on creating high-quality, sustainable buildings and places, often achieving Net Zero standards. They are experts in residential-led developments, strategic place regeneration, and have substantial experience with complex sites, ensuring that their projects uniquely respond to their specific physical, environmental, and socio-economic contexts To ensure the highest standards of retrofit projects as outlined by PAS2035, our assembled multidisciplinary team of specialists has been carefully selected based on their expertise and track record in their respective fields. Each member brings unique skills and knowledge that contribute to the overall success of the project, ensuring compliance with best practices.

To date the project team have carried out various phases of work:

Engagement
- Review the agree intended outcomes
- Carry out an initial risk assessment (Path A, B or C)
- Identify any extra requirements
- Resident engagement

Retrofit Assessment & Improvement measures
- The team follow a FABRIC FIRST approach to meet the intended outcomes:
  - Reduce energy demand.
  - Reduce energy cost and alleviate fuel poverty.
  - Reduce Green House Gasses emissions.
  - Improve internal comfort.
  - Improve IAQ.
  - Eliminate condensation and mould.
  - Protect the building against decay.
  - Protect or enhance architectural heritage.
  - Achieve EPC C.

Retrofit Design incl. queries/ Defect schedule & remediation strategy
- Create detailed plans for implementing energy efficiency improvements
- Address any questions or uncertainties that arise during the design process.
- Document existing defects in the building that need to be addressed as part of the retrofit process.
- Determine the urgency and importance of fixing each defect, ensuring critical issues are addressed promptly.
- Develop a strategy for correcting the identified defects.
- Ensure that the remediation work is integrated smoothly with the overall retrofit design, avoiding conflicts or redundancies between different improvement measures.

Improvement Option Evaluation (IOE) & Medium Term Improvement Plan (MTIP)
- Assess and compare different retrofit options for a building.
- Identify the most effective measures to improve energy efficiency, taking into account factors such as cost, feasibility, and potential energy savings.
- Ensure that selected improvements are well-suited to the specific characteristics and needs of the building.
- Strategic plan developed that outlines a series of retrofit measures to be implemented over a medium-term.
  period, typically 5 to 15 years.
- Provide a roadmap for achieving energy efficiency goals in a phased and manageable manner, allowing for continuous improvement while considering budgetary and practical constraints.

IMPROVEMENT OPTION EVALUATION
FLAT A 45 LOWFIELD ROAD, LONDON, CAMDEN, NW6 2PP

Double-glazing, ventilation, draught proofing

Measure	Installation cost [1]	Annual fuel saving [4]	Repayment period [2]	Carbon cost effectiveness [3]	Potential energy rating	Potential environmental impact rating	Lifetime	Heat demand	Heat demand saving
Energy Efficient Lighting, Draught-Proofing/Air-Tightness Measures, Decentralized Mechanical Extract Ventilation, New or Replacement Windows	£6622.00	£83.30	79.50 years	£221.09 / tCO_2	72	72	15.00	91.26	£17.39

FLAT B 45 LOWFIELD ROAD, LONDON, CAMDEN, NW6 2PP

Cavity wall insulation, flat roof insulation, double-glazing, ventilation

Measure	Installation cost [1]	Annual fuel saving [4]	Repayment period [2]	Carbon cost effectiveness [3]	Potential energy rating	Potential environmental impact rating	Lifetime	Heat demand	Heat demand saving
Draught-Proofing/Air-Tightness Measures, Cavity Wall Insulation, Decentralized Mechanical Extract Ventilation, New or Replacement Windows	£10476.00	£67.20	155.89 years	£281.94 / tCO_2	71	71	21.75	95.08	£34.66