Case Study 4

HOW TO FUTURE-PROOF YOUR DULWICH HOME

Why Retrofitting Matters

Dulwich housing stock includes Victorian terraces, Edwardian semis, 1930s homes, and post-war infill—many of which were built long before modern insulation standards. As a result, they often lose heat quickly and rely on carbon-intensive heating systems. Retrofitting these homes is one of the most effective ways to support local climate goals while reducing energy bills.

Our Mission

The goal of this series of retro-fit case studies, is to empower Dulwich residents with clear, trustworthy information to help:

- Reduce household energy use
- Lower carbon emissions
- Improve comfort and indoor air quality
- Protect the character of local homes
- Make informed decisions about retrofit investments
- Navigate Scheme of Management and Local Authority planning rules

Renovated Edwardian Estate house

Case Study 4

HOW TO FUTUREPROOF YOUR EDWARDIAN ESTATE HOME

A sensitive, fabric-first retrofit transforming a dark kitchen into a bright, low-energy family space.

Energy saving impacts:

- *High-performance day-lit extension*
- *Targeted insulation and airtight detailing*
- *Sensitive, contextual design*

Pre-renovation view

BACKGROUND

The east-facing kitchen of this Edwardian house was cold, dark and poorly connected to the garden. The client wanted to extend the space to create a bright, warm and flexible family room with a strong relationship to the garden, alongside a second living area and a small, private office.

The project increased the ground-floor space, improved circulation and added practical storage, including a utility room and WC. A highly insulated new extension with natural ventilation and a simple, user-friendly heating system were key parts of the brief. It was equally important that the work respected the neighbours and the character of the original house.

SUSTAINABILITY OBJECTIVES

The aim was to create a healthy, thermally balanced home using targeted, fabric-first interventions and high-quality sustainable design.

New triple-glazed openings were placed in key positions to draw daylight deep into the centre of the house and strengthen the visual and physical connection to the garden. To balance the heat loss from these elements, the floor, walls and roof were designed to be highly insulated and airtight, far exceeding the building regulations. Materials were reused wherever possible, with demolition waste recycled for hardcore and reclaimed bricks used to form the new external walls, reducing embodied carbon and construction waste.

The new daylit living space is connected with the kitchen with view towards the garden

TECHNICAL STRATEGY

The new extension was airtight and highly insulated, but the original house was only upgraded where practical by improving insulation and replacing draughty single-glazed windows with suitable double-glazed units. The existing gas-fired boiler was retained, as it remains efficient and well maintained, providing a sensible interim solution before future replacement. At the junction between old and new, triple-glazed rooflights bring daylight and natural ventilation into the centre of the plan, creating a bright transition space between the two levels. Heating is delivered through efficient tall radiators and low-temperature underfloor heating, ensuring year-round comfort and reduced energy use.

The kitchen dining space is flooded with natural light from the triple glazed roof lights.

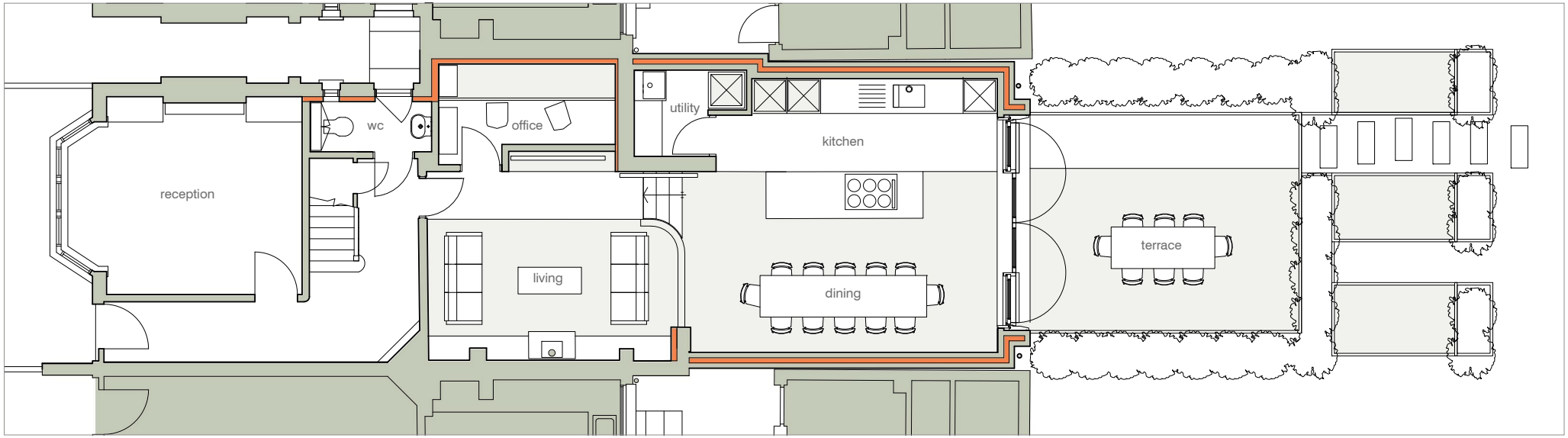
PROJECT ACHIEVEMENTS

Maintaining good relations with neighbours was a priority for the owners and a key success of the project. Extensive consultation took place before and during design development, supported by 3D modelling to help visualise the proposals and minimise any impact. This collaborative approach shaped the low roof profile and modest overall height of the extension, ensuring it remained sensitive to its surroundings.

The completed project provides a generous, light and flexible kitchen and living space enjoyed by the family throughout the year. The triple-glazed rooflights over the central area have been particularly effective, transforming a once-dark part of the plan into a light-filled and naturally ventilated space. The new heating system, combining low-temperature underfloor heating with efficient radiators, is simple to operate and gives the clients full control over comfort and energy use.

Sustainably sourced FSC-certified timber was used for the external timber-framed glazing and new oak flooring. These natural materials add warmth and tactility, enhancing well-being and reinforcing the connection between the house and garden. Balancing the high proportion of glazing with good thermal performance required careful design. The system is airtight and thermally broken, enabling the extension to achieve high energy performance while maximising daylight and views. The result is a calm, uplifting space that opens seamlessly onto the garden and strengthens the family's connection with nature.

Selective refurbishment elsewhere in the house improved comfort and established a long-term strategy for future upgrades, respecting the historic fabric and its low embodied carbon. Above all, the project exceeded its brief while maintaining excellent relationships with neighbouring owners.



Insulation

Ground floor plan

Insulation

Cross Section

LESSONS LEARNED

This project demonstrates how a modest, well-considered extension can make a meaningful difference to everyday family life, improving comfort, space and wellbeing while respecting both the character of the house and the impact on neighbours.

Establishing clear design principles from the outset ensured that each intervention delivered the greatest benefit and that the home could meet current needs while adapting to future family life. Choosing high-quality, natural materials proved to be a worthwhile investment, offering long-term durability and enhancing the appearance and performance of the home as it ages. The project also highlights the value of retaining and upgrading the existing fabric wherever possible, reducing demolition, minimising waste and lowering embodied carbon. In this case, targeted improvements delivered substantial gains in comfort and energy efficiency without altering the essential qualities of the original building. A long-term strategy for future upgrades, to reduce energy loss, will allow the homeowners to continue improving their Edwardian home over time.

SUMMARY OF RETROFIT IMPROVEMENTS

Element	Before	After	U-Value / Performance
Floors	Poor insulation	Upgraded insulation	0.12 W/m²K
Walls	Single brick	Wood fibre insulation	0.18 W/m²K
Windows	Single-glazed	Triple-glazed	0.08 W/m²K
Roof	Original slate	Ventilated and insulated lead roof	0.15 W/m²K
Draughtproofing	None	The new and existing thermal fabric followed robust detailing principles to achieve an airtight construction	-
Heating	An existing A-rated gas fired condensing boiler	The existing gas boiler was retained. It continues to operate efficiently and is regularly serviced, avoiding unnecessary replacement and extending its life.	-
Cooling	None	Improved natural ventilation	-

TOP TIPS

- Make the most of the existing fabric of your home wherever possible to reduce demolition, cut waste and lower your carbon footprint.
- Get the core design principles right from the start. Working with a qualified architect will help you to focus on improvements that will deliver the greatest benefit to comfort, energy performance and the long-term health of the building, while keeping the character of the original spaces.
- Talk to your neighbours early and often; understanding each other's concerns can help shape a design that works for everyone.
- Think carefully about what you need now, what you hope for in the future, and how your home will evolve with your family over time.
- Choose good-quality, durable materials that age gracefully and complement both your home's original character and the wider neighbourhood.

FURTHER GUIDANCE

Ambrose McCallum architects website *ambrosemccallum.com*

Triple glazed rooflights by Velux formerly Vitral, *commercial.velux.co.uk*

Bespoke timber framed glazing K and D Joinery, *kandd.org*

All images courtesy of Ambrose McCallum architects

For Scheme of Management guidance contact info@thedulwichestate.org.uk

The Old College, Gallery Road, Dulwich, London SE21 7AE

thedulwichestate.org.uk
Tel: 0208 299 1000