

UK PASSIVHAUS AWARDS 2015

11/19 PASSMORE STREET

STURGIS CARBON PROFILING



11 PASSMORE ST - OPEN-PLAN LIVING SPACE

11 and 19 Passmore Street are the first privately rented buildings to achieve EnerPHit standards in London. Developed by Grosvenor Britain & Ireland, they were identified as 'pilot' projects, as part of the company's commitment to reduce their carbon emissions by 50% across their directly managed property portfolio by 2024. The historic fabric of the building was carefully preserved while being reinforced and insulated, using super-efficient breathable aerogel internal insulation to front, and external EPS wall insulation with brick slips to rear (applied to the whole street of 12 terraced houses). Whole Life Carbon Assessment showed that compared to existing, the two EnerPHit buildings achieve 95% operational CO2 reductions and 75% whole life CO2 reductions (including embodied emissions of materials), giving an overall saving of 840,000kg CO2e over buildings' life (60 years).



11 PASSMORE ST - REAR FACADE



11 PASSMORE ST - FRONT FACADE

Project Overview

Name: Passmore Street
 Location: Belgravia, London
 Building Type: Mid-terraced house, historic 1860s
 Construction type: Solid masonry + timber extension
 Completed in: January 2015
 Occupancy status: Occupied since February 2015
 Construction Cost: Confidential

Sustainability Features

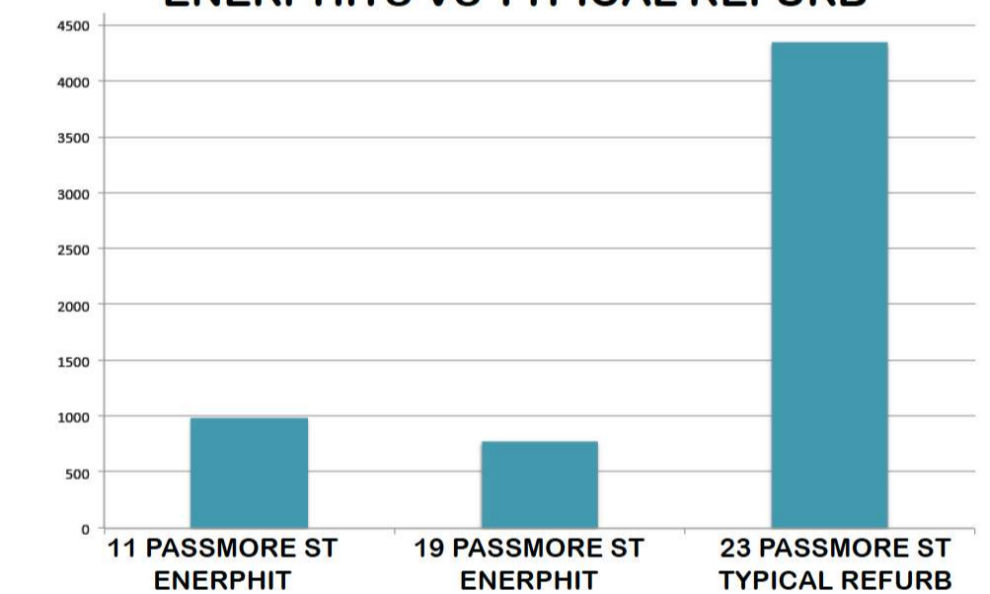
Primary Energy Demand: 127 kWh/m²a
 Space Heating Demand: 23.5kWh/m²a
 Heating & Cooling Load: 11W/m²
 Ventilation strategy: MVHR (Paul Focus 200)
 Heating strategy: Gas boiler (Vaillant Ecotec Plus 824)
 Shading strategy: Internal curtains, external blind - rooflight
 U values (W/m².K): Interior insulated walls 0.16,
 Exterior insulated wall 0.11, Roof 0.10, Floor 0.16,
 Windows 0.68/1.18, Doors 0.68

Measured Performance

No. 11 & 19 EnerPHits are performing 77/83% better than a neighbouring property that received double glazing, roof & wall insulation (see graph below). Analysis of actual energy use: 3 months data (Feb-Apr'15): Gas heating - 14.9/11.8 kWh/m² (higher than anticipated due to property being privately rented, tenants received no training, keeping thermostat high). Total Primary Energy - 27.3/ 23.5 kWh/m² - incl. PV generation & using PHPP conversion factors (good performance).

HEATING DEMAND (AS MEASURED)

ENERPHITS VS TYPICAL REFURB



Lessons learnt: Team training is a key to success
 Air pressure result: 0.8/0.9 ach @50Pa
 TFA: 66.1 m²

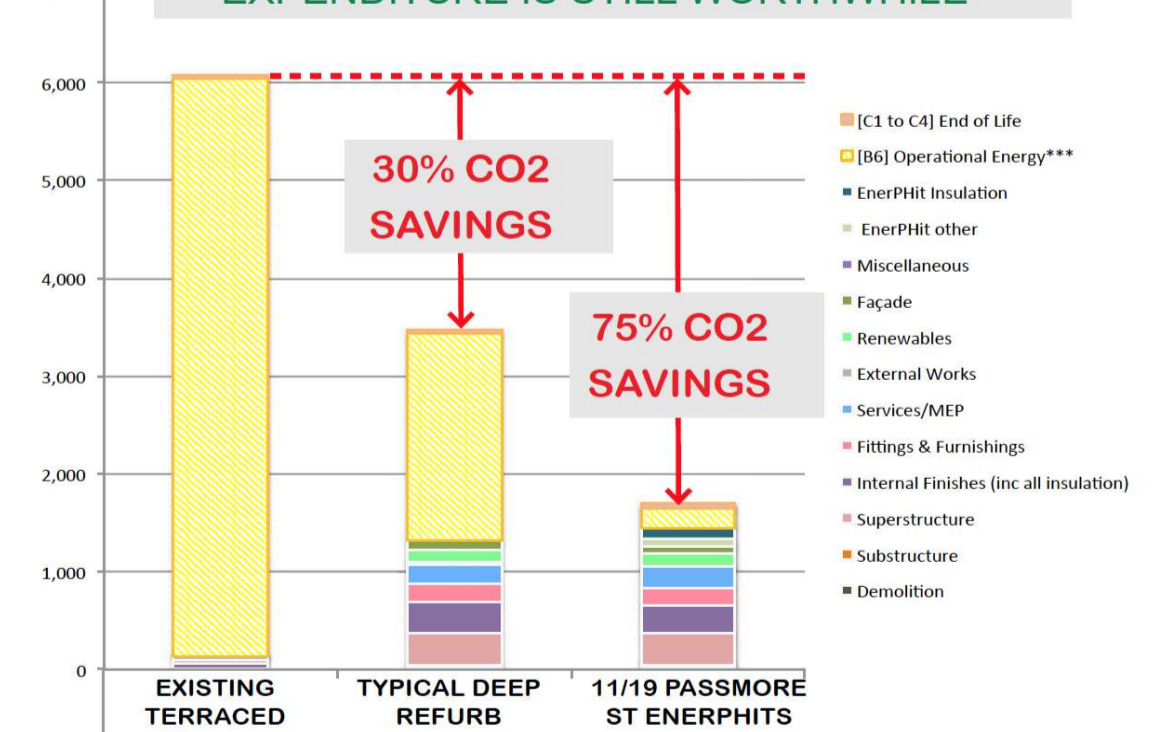
Quote:

I felt refreshed and full of energy in the mornings because of the filtered fresh air!

Mr Dylan Pritchardour

WHOLE LIFE CARBON ASSESSEMENT (60 YEARS)

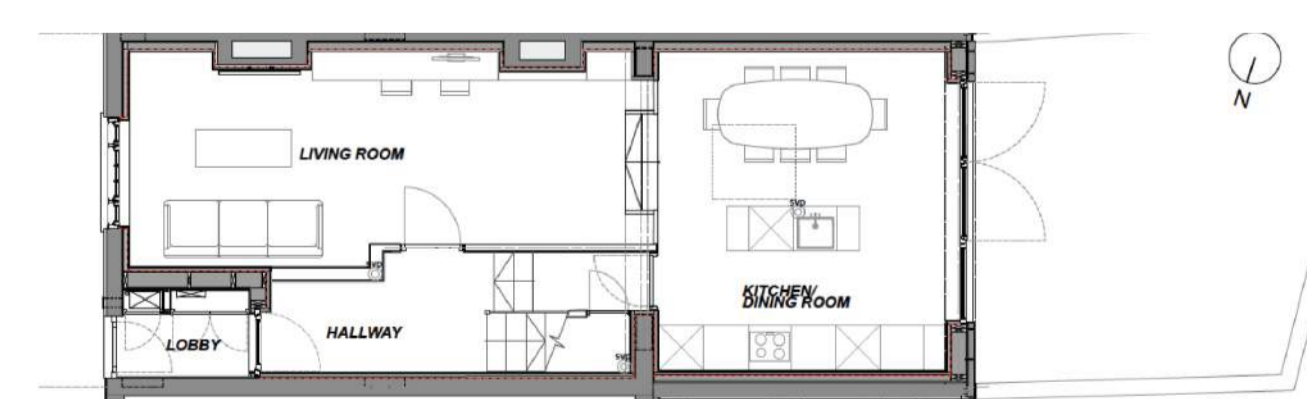
ADDITIONAL EMBODIED CARBON EXPENDITURE IS STILL WORTHWHILE



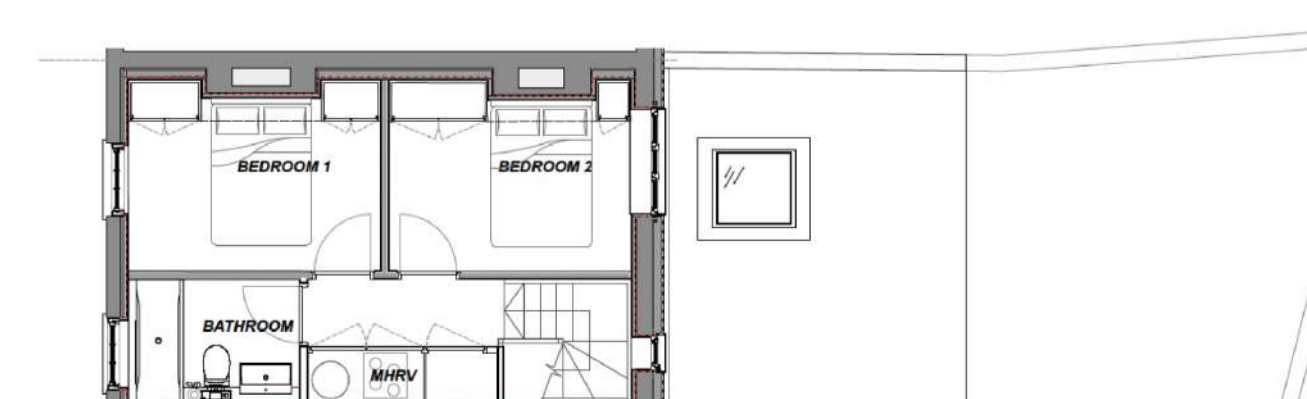
TEAM CREDITS

Client: Grosvenor Britain and Ireland
 Architect/ PH Designer: Sturgis Carbon Profiling
 M&E consultants: Edward Pearce
 Structural Engineer: Hurst Peirce & Malcolm
 Contractor: Grangewood
 Certifier: CoCreate

Sponsored by

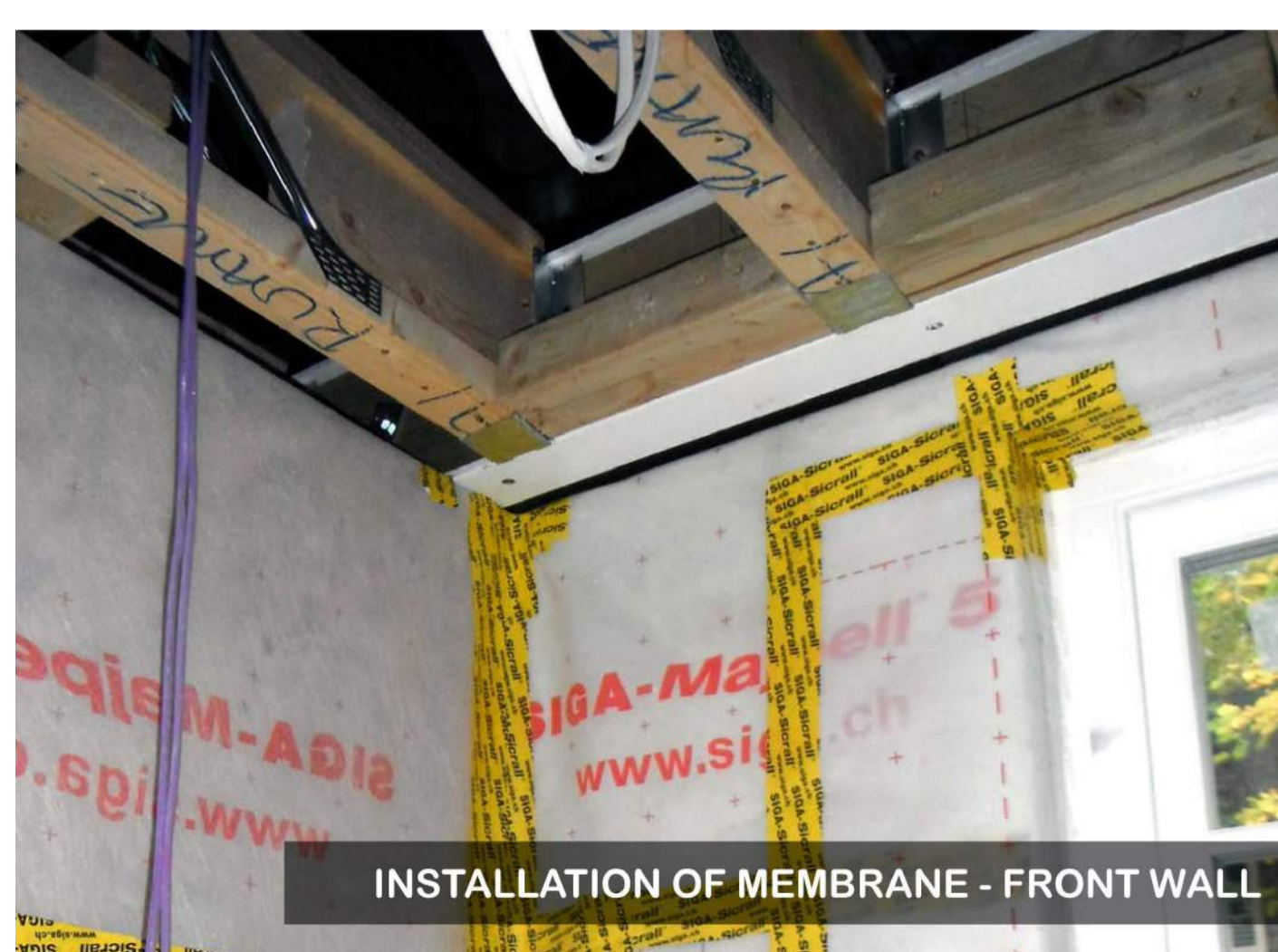


GROUND FLOOR PLAN



FIRST FLOOR PLAN

PROPOSED PLANS



INSTALLATION OF MEMBRANE - FRONT WALL