

ENERGY ASSESSMENT

**40 OAKFIELD GARDEN
EDMONTON
LONDON N18 1NX**

INTRODUCTION

This Energy Assessment has been prepared in support of the following Planning Application.

Address of Property 40 Oakfield Garden
Edmonton
London N18 1NX

APPLICATION NUMBER 23/03726/FUL

PROPOSED

The proposal is to build a ground floor extension to the rear , and convert the three story dwelling into two self-contained units by carrying out internal alterations to comply with the planning guidance.

The statement provides an initial assessment of the CO2 emissions of the dwelling using approved standard calculation methods [SAP 2012-converted to SAP 10 using the GLA EMISSION REPORTING Spreadsheet] reviews the various option for renewable technologies and demonstrate how the Planning Condition will be met by implementing appropriate fabric efficiency measures and renewable and/or low energy technologies.

CONVERTION TO EXISTING THREE STORY DWELLING

Ground Floor Studio Flat .

En-suite 17 Square Metres .

Kitchenet 19.32 Square Metres .

First Floor Split level Three Bedroom.

Kitchen 8.15 Square Metres
Store 2.97 Square Metres
Lounge 25.60 Square Metres
Bathroom 6.2 Square Metres
Bedroom 1 12.60 Square Metres
Bedroom 2 9.05 Square Metres
Bedroom 3 8.00 Square Metres

This building was built in the 1960s with 50mm cavity wall on three floors, facing brick and blockwork to the internal leaf, and 1metre height slate cladding to both front and rear elevation.

PLANNING CONDITION

Enfield Council have set the following planning condition :

8: Prior to above ground works, a detailed 'Energy Report' shall be submitted to and approved in writing by the Local Planning Authority.

Submitted details will demonstrate the energy efficiency of the development and shall provide for no less than a 35% improvement in total CO₂ (carbon) emissions arising from the operation of the development and its services over Part L of Building Regs 2013. The development shall be carried out strictly in accordance with the details so approved and maintained as such thereafter.

REASON: In the interest of sustainable development and to ensure that the Local Planning Authority may be satisfied that carbon emission reduction targets are met in accordance with the Local Development Plan, the London Plan and the NPPF.

Our first step in regards to this project is to use less energy, this involves improving the existing fabric and proposed extension to the rear in line with the Building Regulations target to reduce the demand for energy in each flat. The following U-Values have been used within the SAP calculation. The existing structure and changes to be applied

Ground Floor

Existing slab to be increase by 60mm to allow for under floor heating , Existing floor to ceiling 2.450mm will be reduce to 2.3mm in height the U-Values should achieved 0.18.

External Wall

Presently consist of 100mm facing bricks , 50mm cavity, 100mm block to the internal leaf, 43 square metres slate cladding to front and rear external section. The cavity will be filled with insulation thermal foam to both front and rear . The internal leaf would consist of 50 x 50mm soft jams at 450mm centre to centre then lay 50mm thick kingspan insulation then screw 12.5mm foilback plasterboard , bond and skim. Also take off existing slate cladding and lay breather membrane and re-install . The wall should achieved 0.20 U-Value.

Party Wall

The party wall between houses are constructed with 200mm concrete blocks with sand/cement render with 50mm acoustic insulation sheets fix to both side .
U-Value 0.00wm2k.

Roof

The slate roof will be strip off and overall . New breather Membrane , 120mm kooltherm K107 kingspan pitch roof insulation position between joist by increasing the width of the rafter by 80mm , and the rock wool insulation between ceiling joists to 150mm thick . We allow for a U-Value 0.11w/m²k

UPVC Double Glazing

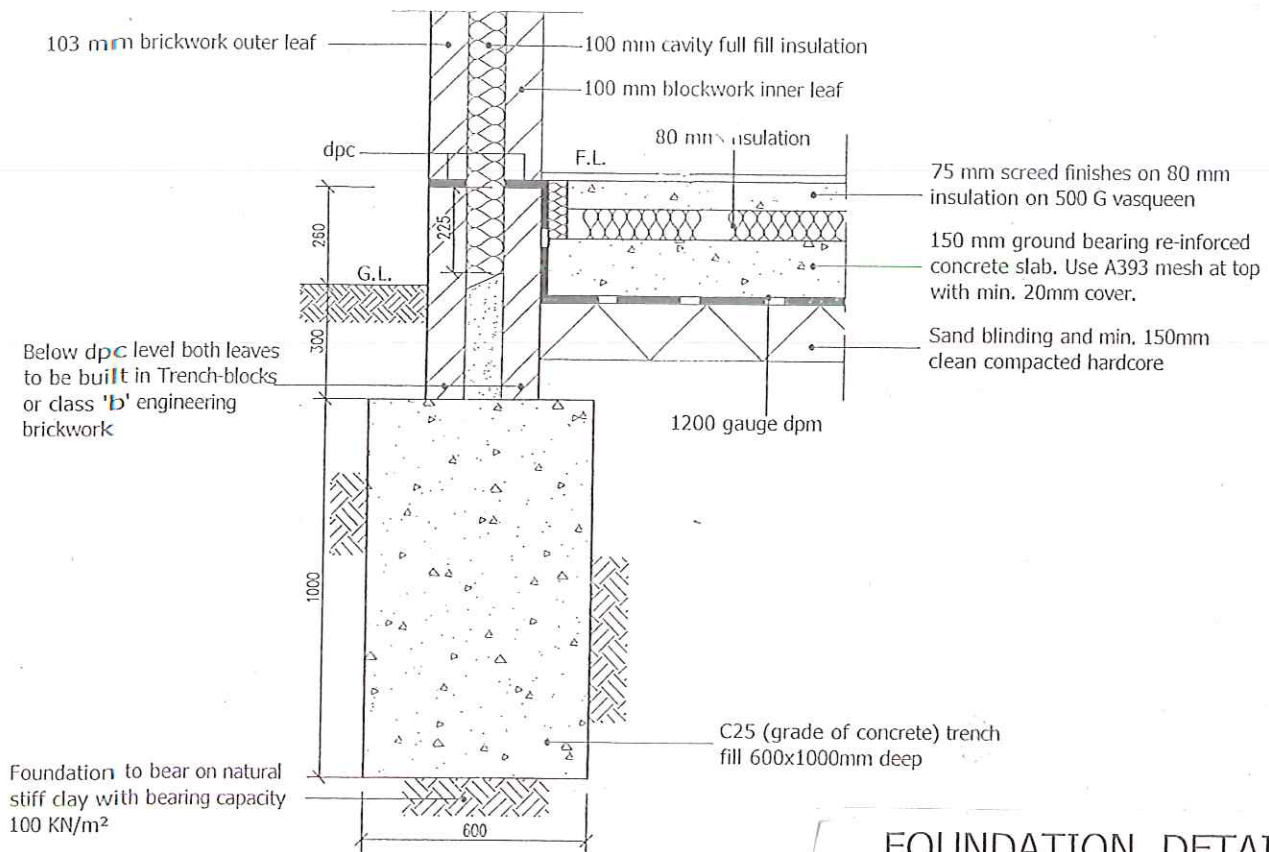
The existing windows is made of UPVC double glazing has good thermal and acoustic insulation properties with Low E= Glass. The average U-Value of the double glazing windows is approx 1.4 w/m²k

New Ground Floor Extension

Extension will be constructed with 100mm facing bricks , 100mm cavity with insulation 100mm thick 100mm celcon blocks to internal leaf, 15mm sand/cement render then cover with 40mm insulation board bonded and skim. This wall should achieved 0.18w/m²k

Floor Slab

Concrete slab 150mm , 100mm insulation , 500 G vasqueen,30mm screed under floor heating pipe finish with 50mm screed we allow for 0.13w/m²k



FOUNDATION DETAIL

Green Flat Roof

Detail as been deposit with plans submitted with Specification construction details with insulation that provide high performing thermal insulation with a U-Value 0.14w/m2k.

Cooking Facility

Electric oven and cooker to both unites.

Heating

First floor split level will consist of electric radiator 990 watts KYROS with programmer and appliance Thermostats .

Hot Water

DHW cylinder, specification 1.5 KWH/day.
Cylinder volume 250 litres , 150 litres to
Ground floor flat.

Lighting

Low energy lighting will allow us to save 85% low energy lamp
Should provide a minimum of 45 lumens per circuit watts.

Ground Floor Flat

Under floor heating systems will be between 65-85w/m² to allow
For the required heat output. The manufacturer specification say that this
system will provide 65-85w/m² per hour. This help to reduce heat up times
and provide a more energy efficient heating solution.

Solar Panel

The wattage of solar panel is the electricity output produce under standard
test conditions solar cell temperature of 25 degrees C solar irradiance of
1.000 watts per square meter and 1.5 air mass. Solar panels will be install on
the pitch roof south facing at 30 degrees to supply the first floor flat also to
the flat roof to allow supply to the ground floor flat.

Energy assessment is a report of the energy efficiency of the existing building . The main aim is to highlight areas for improvement when it come to energy efficiency . Not only is this a great way to lower carbon footprint.

I have today design the property fabric in line with the Building Regulation. The proposed specification details the U-Value to each section energy performance requirement.

I have not identify any energy-saving cost but as long as the building regulation is applied cost-saving will be applicable with this specification outline in this report. This conversion will achieve a cumulative saving of 4.2 tonnes co2/yearly .