



27 Aylmer Road
London N2 0BS

Energy Statement for Planning

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INTRODUCTION

The energy statement has been prepared in support of the planning application for the construction of a new residential property with 2.5 storeys above ground in North London. The property replaces an existing residential property on the site with a new energy strategy which complements planning requirements and embraces the requirements for energy conservation and sustainability.

National Planning Policy Framework

The NPPF has been updated and meeting the challenge of climate change and has been the focus of the policy update for new developments. It suggests that new development should focus on the mitigation of emissions through orientation & design and increase the use of renewable and low carbon technologies

London Plan 2021

The London plan 2021 makes no specific reference to single residential schemes and concentrates on major developments which should be zero carbon.

Local Planning

Haringey Councils Development plan, Policy SP4 has been replaced with the governments technical housing standards and this standard has been applied to the development of this project.

Aside from SP4 there are additional policies which shall be followed

Policy DM21

Policy DM21 requires that proposals should apply the energy hierarchy to minimise energy use in order to meet, and if possible, exceed, minimum carbon dioxide reduction requirements. Proposals should also apply the cooling hierarchy to reduce the potential for overheating and limit reliance on mechanical air conditioning systems.

This report sets out that the development will meet the current Building Regulations for energy efficiency as a baseline and include the use of low carbon and renewable energy technology to offset the energy demand even further. A detailed design SAP calculation will set the savings that can be achieved from maximising the potential and suitable technologies which shall be completed during the next stage

EXISTING AND PROPOSED DEVELOPMENT

The proposal is for the development of a new residential property on the located on the southern side of Aylmer Road with the main frontage facing in northerly direction.

The current house is constructed in the optimum orientation for energy reduction which will assist in the installation of renewable energy solutions.

Access to the property is from Aylmer Road



Fig 1: Site Plan

SAP 2012 and Building Regulations 2022

The Standard Assessment Procedure (SAP) 2012 is the UK government methodology for assessing and calculating the energy performance of residential dwellings.

This considers the many factors which make up the construction of a dwelling and includes the following:

- The construction materials making up the building U-Values (thermal insulation)
- Ventilation systems

- Fuel used for space heating
- Efficiency of controls systems
- Heat recovery systems
- Lighting
- Application of renewables

In addition to the SAP the Approved Document Part L which forms part of the Building Regulations documentation references the conservation of fuel and power and is divided into four separate documents.

- Part L1A – Newly constructed Dwellings
- Part L1B - Existing Dwellings
- Part L2A – newly constructed non-Dwellings
- Part L2B – Existing non-Dwellings

Part L1A is the reference document which will be used in the detailed design of the property and sets out the energy efficiency required as calculated using the SAP methodology.

During the detailed design stage, the SAP calculation shall set out the compliance with the AD Part L1A and show the achieved Dwelling Emission Rate (DER) under the Target Emission Rate (TER).

ENERGY PLAN

By adopting a sustainable approach to the design, construction, and operation of the house it follows the widely known and accepted base principles adopted within all councils for sustainable & energy efficient design. The three main environmental statements of **Be Lean, Be Clean & Be Green** has been applied throughout the design process so far to reduce the overall carbon footprint of the house, through minimising the energy absorbed within the general operation.

Be Lean

During this planning process the redevelopment of the house considers the orientation of the building to maximise the use of natural resources available and reduce the amount of CO₂ being generated. These principles will use passive and active measures to minimise heat loss and air infiltration through the building fabric.

The architect has designed the house to maximise the use of natural daylight with portions of glazing used on the south elevation to bring the light into the living spaces. This maximisation allows the house to benefit from the winter sun which will passively support the heating system and to assist in heating the space during the winter months. This will reduce the demand for mechanical heating system and the glazing system to the maximised area will be of the highest specification possible to meet the budget and will exceed the minimum requirements of Building Regulations.

Glazing on the norther side of the building is kept to a minimum to reduce the amount of heat loss which will occur during the winter months.

In addition to the maximising of the daylight itself the building fabric is proposed to also exceed the requirements of Building Regulations minimum U-values for the walls, roof, and floor using higher levels of insulation. Consideration of the materials being used has been given to select those with a low environmental impact over the full life cycle of the building. These materials for the main structure and finishing elements shall be responsibly sourced wherever feasible and it is the intent to select suppliers who can provide an environmental management system (EMS) certificate.

The building shall also take into consideration the required air tightness of the building and the required levels as noted within Building regulations. The aim of the project is to exceed these requirements to further improve energy efficiency.

Be Clean

Due to current legislation the use of fossil fuels has been acknowledged by government as significantly contributing to the global warming effect of the planet and having a detrimental effect on the environment. As such the government has taken steps to ensure that the reliance on such fossil fuels is considered during planning process and alternative solutions sought out to reduce this reliance and therefore impact into the global warming effect.

The prime uses of fossil fuels such as Gas & Oil are used for the general heating and cooking facilities within the house using gas cooking or gas boilers for hot water and heating. As these items are generating most of the CO₂ emissions alternative solutions have been considered.

Avoiding the use of fossil fuels can be achieved using electrically operated heat pumps systems in lieu of conventional combustion boilers which either use the heat stored within the mass of the earth/ground or by using air.

The use of electricity as a fuel has recently been significantly de-carbonised using alternative energy systems such as nuclear, wind, hydro electric or solar photovoltaic power.

Supplementing the heating system within the house is the need to ensure the building is of a sufficient air tightness to minimise the air infiltration and therefore heat loss. To achieve good air quality within the house it is proposed to use a mixture of systems which include Mechanical Ventilation with Heat Recovery (MVHR) and Positive Input Ventilation (PIV). These systems have been proposed to respond to the architectural make up of the space and are independent of each other. They provide fresh air into the main space within the house and will remove any pollutants and therefore reducing the risks associated with health issues stemming from poor ventilation.

Be Green

Once the building has been optimised in terms of orientation and construction, and the systems employed are as efficient as possible, the addition of renewable 'Green' energy is then considered to further reduce the reliance on 'grid' energy. Diverse options are being considered including PV's, Solar thermal, Wind and GSHP.

Due to the location of the property being within a built-up area the use of wind turbines was not deemed to be an appropriate solution and therefore discounted.

The use of solar thermal panels has been considered in relation to heating the domestic hot water but with the prospect of maximising the use of solar electric panels discounted on terms of practicality.

GSHP was being considered however the area is not available to meet the demand using 'Slinky' pipework installed below ground level. The use of boreholes was technically viable but on cost grounds discounted as being excessive and outside the client's budget.

The best solution which meets the budget, and the practical installation uses Photovoltaic panels located on the main house roof. The configuration and orientation are suitable and allow for the use of a solar PV array to be installed. The size and output of the array shall be within the regulatory guidelines and not of sufficient size to affect planning.

It is also proposed to install rainwater harvesting using rain butts to aid with the watering of the gardens as required. These units will be placed in line with the main downpipes connected to the system.

SUMMARY

As stated during the detailed design of the project the requirement of Building Regulations and general planning policy are to be observed and met through the coherent and sensible design of the building.

Due to the recent change in energy pricing, there is greater emphasis on reducing the energy demand of the building and to maximise the use of renewable energy sources where possible.

To meet the aspirations of the client the building shall adopt a low energy approach and first meet the 'Be Lean' criteria through low building fabric u-values and the use of advanced heating controls.

We would then apply the maximum allowable renewable energy measures located in the optimum orientation to reduce energy demand.