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Design & Access Statement

project **2 Elm Grove Road,**

London

SW13 0BT

job no. 390eg

date 10 August, 2011.

DESIGN AND ACCESS

1. Introduction

The existing house at 2 Elm Grove Road is a single family home set on a 245m^2 site. The new house will be located on the triangular 67.9m^2 vacant section of the site to the north of the house, replacing a single garage. The site is not in a conservation area although 2 Elm Grove Road has been designated as a Building of Townscape Merit.

The intention is to carefully create a refined, gentle, low energy, 3 bedroom house on this end-of-terrace site on Elm Grove Road. The new house will be only the second house in London to achieve the advanced Passivhaus certification (we designed the first) and will demonstrate compliance with the government's proposed low energy, 2016 Zero Carbon definition. The house will create more planting than on the current site and incorporate green roofs with native planting for biodiversity. Renewables will also be incorporated for water harvesting, recycling and water heating. All these requirements, including the need for high levels of insulation, avoidance of cold-bridging, and draught-free triple-glazing with heavily insulated frames, require a careful, contemporary approach to architectural design using the fabric-first energy saving principals of the Passivhaus methodology.

We fully understand the reaction against modern architecture, caused by loud designs and unsympathetic detailing. Nevertheless, with a craftsman like approach to the detailing of this new house, and the use of natural materials, we are capable of creating an attractive and interesting addition to the street. We will make sure that the new house reflects the quality of the streetscape, and we will make a home that compliments its finely detailed, elegant and beautifully maintained neighbours.

It is these same design qualities that have resulted in bere:architects receiving awards for elegant contemporary houses that have quickly become much-loved additions to the character of several London neighbourhoods.

This project will produce Richmond's first Certified Passivhaus. This important demonstration house will herald a new, green era in which the residents of Richmond, in both new and older properties alike, can live in relative harmony with nature.

1.1 Planning Background

There have been two recent successful planning applications for this site:

Application 04/2696/FUL
Gained planning consent at planning committee on the 16th of Dec. 2004. This application is for a 3 storey residential house.
Application 08/4251/FUL
Gained planning consent by delegated powers on the 24th of June 2009. This application is identical in terms of bulk, massing and general design to the previous application for a three-storey house under 04/2696/FUL with the addition of a basement.

2. Description of site

2 Elm Grove Road (SW13 0BT) is located in the London Borough of Richmond. The site is not in a conservation area although it is just to the south of the Barnes Green Conservation Area. The property is located within a Controlled Parking Zone.

The site is currently occupied by a single garage and is part of a larger property that includes 2 Elm Grove Road, designated as a Building of Townscape Merit (BTM).

The property fronts the Western side of Elm Grove Road and sits within a triangular shaped curtilage. On the northern boundary of the site is a vehicular access way running to the rear of commercial and residential properties in Church Road.

Existing Site

2.1 The Physical Context

Terrace

End of terrace (other end from site)

2.2 Flood Zone

2 Elm Grove Road is located in a Flood Zone 3 area. For a Flood Zone 3 area, the Environment Agency indicates that:

The area is unlikely to flood except in extreme conditions

The chance of flooding is 0.5% or less.

This rating takes account of the effect of any flood defences that may be in the area.

The detailed land survey which has been commissioned for the site indicates that the pavement in front of the site is 5.3m AOD.

The existing planning permission for the site 08/4251/FUL includes an internal FFL 300mm above the road level, so 5.6m AOD. This permission also detailed retaining walls around the light well to the same height as the internal FFL. The basement must be fully tanked with a sump drainage system.

The Environment Agency quote a 1 in 200 year flood level (projected for the year 2012) for this area of 5.32m AOD.

The planning permission 08/4251/FUL also stated that the basement rooms are to be used as a kitchen, family and utility rooms with no bedrooms in the basement.

2.3 Highways

The proposal suggests a projection over the site line along the side access lane, at high level. This has been discussed with Highways who gave the following advice:

Licences are required for any display that may protrude/project over a public highway. The maximum depth that the display can protrude over the public footway is 1.05 metres (3 feet 6 inches), subject to 2.10 metre (7 feet) clear passageway between the edge of the display and the road (or any intervening pavement furniture such as a bollard or telephone box). The Council reserves the right, in exceptional circumstances, to allow a greater depth of display where the pavement is very wide, or a smaller depth of display where pedestrian footfall is very high. All goods or equipment on display under the terms of the licence shall be kept within the area specified. To allow for the safe passage of pedestrians beneath projections from frontage development, such as canopies, blinds, CCTV equipment, a minimum vertical clearance of 2.75 metres is required from the surface of the footway to the underside of any projection. The Council may alter this vertical clearance in exceptional cases. If at a future

date pavement furniture is added by the Council, and the display area of the Licence is affected, the Licence will be reviewed or removed.

Richmond Council Website

Highways advised that the above statement was relevant for signage and building projections alike.

During the pre-planning application the design was discussed in great detail with Lindi Louw, senior transport planner. Lindi reviewed detailed elevations of the proposed house and deemed that the projection was acceptable. The design was developed in line with Lindi Louw's recommendations for the bin storage, side access door and bike store until such a time as Lindi was happy with the design.

In terms of the parking provision, Lindi advised that one street parking permit would be reallocated to the new dwelling (expected to be numbered 2a Elm Grove Road) from 2 Elm Grove Road (which currently holds three permits). By removing the dropped curb Lindi noted that an additional parking space would be available, thus providing a net increase in parking spaces on the street with no additional permits be being issued than the present situation. This advice was given on the 1st of July 2011 by Lindi and copied to Matthew Rees in the planning department.

3. Design Proposal

3.1 Planning Policy Context

Throughout the design process we have been careful to design a house which is respectful of its context.

The site lies in the Barnes ward of the London Borough of Richmond. The following polices apply to the site.

"ENV 5 - PROTECTION OF VIEWS AND VISTAS

5.41 The Council will seek to protect the quality of views especially those indicated on the proposals map. It will also seek opportunities to create attractive new views and vistas and, where appropriate, improve any that have been obscured.

5.42 This policy will have implications for the quality of design of buildings and the configuration, height and site layout of new development.....In some locations views have been obscured by fencing, buildings or overgrown trees. Appropriate opportunities will be taken to open up or enhance these views for the benefit of the general public. The Council will also seek to protect the quality of views which are identified in Supplementary Planning Guidance, including the Thames Landscape Strategy....."

Richmond Planning Website

In addition to the above policy the house at 2 Elm Grove Road has been designated a Building of Townscape Merit.

"Within the Borough there are many buildings that due to their historical associations, architectural style, visual interest or siting within an area, are of significance to the history and character of the local environment. However, they may not possess sufficient interest to warrant statutory listing as being of 'special architectural or historic interest' by the Secretary of State for Culture, Media and Sport.

Instead the Council may, following consultation with owners, designate them as Buildings of Townscape Merit. The majority of Buildings of Townscape Merit are found in the 72 conservation areas and there is a general presumption against their demolition.

Many different types of building are designed as being of townscape merit ranging from houses and cottages, which form the vast majority of entries, to shops, churches, public buildings, railway stations and industrial premises. Buildings from any age, even of a recent date, can be included.

Richmond Planning Website

3.1.1 Relevant Local Policy

3.1.1.1 Core Strategy (April 2009)

The Core Strategy sets out the key planning policies for Richmond and has been used by bere:architects to direct and assess the proposed design for the new house.

"The Core Strategy has 3 inter-related themes of 'A Sustainable Future', 'Protecting Local Character' and 'Meeting People's Needs'. On the basis of strong evidence-based policies we are now in a stronger position to defend the Borough's heritage and special built and natural environment so that it remains, indeed, ***London's greenest borough****. At a time of economic uncertainty we have put in place robust policies designed to maintain the vitality of our town centres, not sacrificing quality or individuality in the process. Throughout the borough we will now also be in a stronger position to insist on affordable housing provision. Finally, as we all face the need to mitigate and adapt to climate change, we have built sustainability into every aspect of the document."* *Councillor Martin Elengorn, Cabinet Member for the Environment*

5.1.3 of the Core Strategy 'A Sustainable Future' gives the following 5 key issues which have been addressed in this proposal as follows:

1. The high level of use of natural resources and pollution including energy use within buildings and in travel.

The Passivhaus approach reduces the energy use within the house to a fraction of the energy required for standard new build houses. Making the aspiration of a zero carbon house an achievable objective, even on a very tight site in a dense urban environment.

2. The need to provide for the safe, efficient and sustainable movement of people and goods in an area where the road and rail network is often close to capacity.

Bicycle storage for two bicycles has been provided at the rear of the house to encourage sustainable transport.

3. The threat to biodiversity from new buildings, lighting, hard surfacing and people.

The proposed house replaces a single storey garage and small garden comprising 26.6m^2 of green space. The currently approved scheme only supports only 3.4m^2 of green space. However, the new house includes for 42.2 m^2 of green space through deep planters (14.4 m^2) able to support substantial native plants and a native wild flower meadow roof (27.8 m^2). The proposal will include integrated bird and bat boxes.

4. Increasing potential for the River Thames and its tributaries to flood with related risk to personal safety and property, and other potential impacts of climate change in the borough leading to possible water shortages, hotter summers and increased rate of subsidence.

To address the issues of possible water shortages the new house will have a rainwater harvesting tank located under the lower ground floor. This will harvest water from the green roof, terraces and planters to be used for toilet flushing and irrigation for the plants. The house will be further future proofed with provision for on-site water heating through solar collectors (to

cover around 60% of the annual demand) and provision for on-site electrical energy generation with a PV array. Climate warming will be addresses by the super insulated walls and green roofs which will protect the internal spaces from over heating in the summer in conjunction with automatically controlled solar blinds on south and south eastern facades.

5.The need to reduce the level of waste generated and amount disposed of by landfill through increasing levels of re-use and recycling.

All materials currently on the site will be considered for re-use. The top soil will be retained for use in the planters.

This exemplar low energy design will encourage recycling through the provision of waste separation within the kitchen and external bin store.

The Core Strategy Objectives go on to set out the borough wide environmental objectives. These include the following two objectives which are of particular relevance to the proposal:

1.Minimising the Borough's impact on climate change including promoting the use of renewable energy, making effective use of land and resources, minimising any adverse impacts of development, ***encouraging sustainable building*** *and travel.*

2.Conserving and ***enhancing biodiversity*** *both within open space but also* ***within the built environment*** *and along movement corridors, in accordance with the Richmond Biodiversity Action Plan.*

The Core Strategy also covers Projecting Local Character and the following objective is of particular importance to the proposal:

1.Conserving and where appropriate, enhancing the environment including preserving and enhancing historic areas, retaining the character and appearance of established residential areas, and ensuring that new development including public spaces is of high quality design.

The house has been carefully designed to present a subtle unity between both the existing terrace and the new house and also with the overall existing terraced streetscape. This is explored in more depth in 3.7 below.

3.1.2 Relevant National Policy

3.1.2.1 PPS 1 Delivering Sustainable Development, 2005

This PPS states that:

"Sustainable development is the core principle underpinning planning. At the heart of sustainable development is the simple idea of ensuring a better quality of life for everyone, now and for future generations. A widely used definition was drawn up by the World Commission on Environment and Development in 1987: "development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

This document goes on to outline the key principals which include:

"Planning authorities should seek to enhance the environment as part of development proposals. Significant adverse impacts on the environment should be avoided and alternative options which might reduce or eliminate those impacts pursued."

The proposed design has aimed to address all of the environmental issues outlined in the PPS1. See 3.1.1.1 for a break down of this.

The PPS1 outlines the national design objectives stating:

High quality and inclusive design should be the aim of all those involved in the development process. High quality and inclusive design should create well-mixed and integrated developments which avoid segregation and have well-planned public spaces that bring people together and provide opportunities for physical activity and recreation. It means ensuring a place will function well and add to the overall character and quality of the area, not just for the short term but over the lifetime of the development. This requires carefully planned, high quality buildings and spaces that support the efficient use of resources. Although visual appearance and the architecture of individual buildings are clearly factors in achieving these objectives, securing high quality and inclusive design goes far beyond aesthetic considerations.

3.1.3 New Draft National Planning Policy Framework- July 2011

This is now out for consultation before becoming law and is a clear sign of the government's thinking on planning matters. Below are the sections we believe to be of particular relevance to this application:

The core of the Policy is Sustainable development:

"*9. The purpose of the planning system is to contribute to the achievement of sustainable development. Sustainable development means development that meets the needs of the present without compromising the ability of future generations to meet their own needs2. It is central to the economic, environmental and social success of the country and is the core principle underpinning planning. Simply stated, the principle recognises the importance of ensuring that all people should be able to satisfy their basic needs and enjoy a better quality of life, both now and in the future.*"

"*13. The Government is committed to ensuring that the planning system does everything it can to support sustainable economic growth. A positive planning system is essential because, without growth, a sustainable future cannot be achieved. Planning must operate to encourage growth and not act as an impediment. Therefore, significant weight should be placed on the need to support economic growth through the planning system.*

14. At the heart of the planning system is a presumption in favour of sustainable development, which should be seen as a golden thread running through both plan making and decision taking. Local planning authorities should plan positively for new development, and approve all individual proposals wherever possible."

Detailed guidance on design:

"*114. The Government attaches great importance to the design of the built environment. Good design is indivisible from good planning and should contribute positively to making places better for people. The Government's objective for the planning system is to promote good design that ensures attractive, usable and durable places. This is a key element in achieving sustainable development.*"

"*118.* ***Planning policies and decisions should not attempt to impose architectural styles or particular tastes and they should not stifle innovation, originality or initiative through unsubstantiated requirements to conform to certain development forms or styles****.*
119. Although visual appearance and the architecture of individual buildings are important factors, securing high quality and inclusive design goes beyond aesthetic considerations. Therefore, planning policies and decisions should address the connections between people and places and the integration of new development into the natural, built and historic environment."

"*121. In determining applications, significant weight should be given to truly outstanding or*

innovative designs which help raise the standard of design more generally in the area. Permission should be refused for development of obviously poor design that fails to take the opportunities available for improving the character and quality of an area and the way it functions."

"*151.* ***Local planning authorities should not refuse planning permission for well-designed buildings or infrastructure which promote high levels of sustainability because of concerns about incompatibility with an existing townscape unless the concern relates to a designated heritage asset and the impact would cause material harm to the asset or its setting, and this harm is not outweighed by the proposal's wider social, economic and environmental benefits.***"

"*153. When determining planning applications, local planning authorities should apply the presumption in favour of sustainable development and:*
• not require applicants for energy development to demonstrate the overall need for renewable or low-carbon energy and also recognise that even small-scale projects provide a valuable contribution to cutting greenhouse gas emissions; and
• approve the application if its impacts are (or can be made) acceptable. Once opportunity areas for renewable and low-carbon energy have been mapped in plans, local planning authorities should also expect subsequent applications for commercial scale projects outside these areas to demonstrate that the proposed location meets the criteria used in identifying opportunity areas."

"*169. When determining planning applications in accordance with the Local Plan and the presumption in favour of sustainable development, local planning authorities should aim to conserve and enhance biodiversity by applying the following principles:*
• if significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused
• development proposals where the primary objective is to conserve or enhance biodiversity should be permitted
• opportunities to incorporate biodiversity in and around developments should be encouraged"

3.2 Passivhaus Approach

Carbon emissions are the main cause of climate change (CLG, 2007), and have increased globally by 350% since 1960 (The World Bank CO^2 emissions, no date). A main source of carbon emissions is from housing, which was expected to account for 13% of all UK emissions in 2010 (CLG, 2008). Reducing this is a national priority, and the UK Government has now pledged that all new homes in the UK will be zero carbon by 2016 (CLG, 2006a). Central to implementing this are the Building Regulations, the Code for Sustainable Homes (the Code) and the government's proposed 2016 Zero Carbon definition . However, the Code only defines target energy use levels to be met, and does not specify the mechanisms to do this (CLG 2006b). Useful lessons can be learnt from the European PassivHaus standard which clearly defines design and construction principles (see Passivhaus Institut, no date) that have been proven to produce low energy buildings (Feist et al., 2005).

This house has been designed to Passivhaus Standards. Passivhaus is a European approach, defined by physicist Wolfgang Feist, that requires a high level of insulation and a draft-free construction, and, to maintain a flow of fresh air, an efficient heat recovery ventilation system. This uses very little energy, whilst saving a lot of energy that would otherwise go to waste. Other forms of energy become viable alternatives to fossil fuels, meaning that **zero-carbon** building is achievable. It demands a particular approach to design and construction, and demands rigorous on-site testing during the building process.

The Passivhaus approach can be explained briefly under the following headings:

Insulation
Super-insulated walls, floors and roofs create an affordable, comfortable and healthy environment. In addition, low energy demands make the use of renewable energy supplies a realistic alternative to fossil fuels. Appropriately selected insulation will help to avoid over-heating in the summer months.

Avoiding thermal bridges
We are careful to avoid all thermal bridging in our designs, in accordance with the Passivhaus design standard. With attention to details, heat losses can be reduced by such a degree that a hot water boiler and conventional heating can be entirely eliminated.

Achieving draught free construction
We assist contractors to rigorously apply advanced construction techniques and testing.

Heat recovery ventilation
Our draught-free buildings improve air quality, firstly by using non-polluting natural materials, and secondly by using low-energy heat recovery ventilation systems to provide a continuous supply of fresh air warmed in winter by the air exhaled from the buildings.

Solar energy
The building will be able to derive a large proportion of its energy requirements from passive solar gain. In addition, a significant proportion of its water heating requirements will be derived from solar energy. PV mounted on the roof will also provide electrical energy.

Summer comfort
Automated solar shading will help avoid overheating in the summer. Night time fresh air circulation to cool thermal mass will further improve daytime comfort in summer months.

Water and health
We promote the advantages of the filtration of bathing and drinking water.

Rain water
Rain water will be stored in underground tanks for use in the building. This will reduce the risk of storm water flooding, and prevent contamination of the local ecology.

3.2 .1 Passivhaus design

The form of the house has a direct relationship to the Passivhaus house requirements. We use the Passivhaus Planning Package (PHPP) from the very start of the design process to provide an energy parameter which can inform the decisions we make with regard to building form and orientation. For example, with Passivhaus dwellings a designer has to carefully manage all of the heat transmittance losses through the fabric of the house, with the useful solar gains and internal gains which can be harvested during the heating season. This is then carefully balanced with external shading devices to prevent over heating in summer, which have the added benefit of providing additional privacy.

For this design we have calculated that the transmission heat losses as 6394kWh/a (52.4kWh/(m2a)) the ventilation losses also have to be considered. With the very high standard of construction required by the Passivhaus standard there will be not a problem with drafts, instead all of the fresh air is provided through a heat recovery ventilation system. The ventilation losses are calculated at 55kWh/a (4.5kWh/(m2a)). The solar gain is calculated at 5123kWh/a (42kWh/(m2a)) and the internal heat gains are expected to be around 1258kWh/a (10.3kWh/(m2a)) all of these gains are not always useful i.e some are available in the summer when you will not utilise them, the useful gains are calculated as a fraction of these figures giving a total of 5531kWh/a (45kWh/(m2a)). For Passivhaus certification the heat loses must not exceed the gains by more than 15kWh/(m2a), we currently calculate the difference to be around 13kWh/(m2a) so well within the Passivhaus requirements.

If we had more traditional smaller window sizes with the current wall thicknesses, we would not have sufficient solar gains to heat the house passively and would then have to have a traditional heating system. To achieve Passivhaus certification with smaller windows we would have to look at having extremely thick walls to further reduce the transmittance losses. The walls would potentially have to be up to 2 x as thick as shown on in this design. The walls are already 350mm thick so doubling the thickness is not a viable solution for a plot of this size and not economical in terms of providing usable floor area.

For certification the pitched roof in the currently approved design would also increase the heat demand / m2 of the dwelling, as you are heating a lot of volume which is not usable space due to the restricted head height under the eaves.

We believe that for this site the current design is the most suitable design for achieving full Passivhaus certification and do not believe it would be feasible to try to obtain Passivhaus certification with the currently approved design in terms of buildability, cost and economical use of land.

3.3 Code for Sustainable Homes (CfSH)

This house will be designed to address the nine categories of sustainable design:

- Energy and CO2
- Emissions
- Water
- Materials
- Surface Water Run-off
- Waste
- Pollution
- Health and Well-being
- Management
- Ecology

The house has been designed to achieve a minimum of CfSH level 4 or 5 to be confirmed during detailed design.

The Passivhaus standard achieves an extremely energy efficient building fabric, able to meet the code level 6 building fabric performance criteria.

To comply with these high code levels, this design includes for solar thermal water heating, PV panels for onsite electricity generation, green roofs for biodiversity and to reduce rainwater run-off, low flow sanitary appliances for water conservation with a rainwater harvesting tank located under the lower ground floor, energy efficient lighting and highly environmentally friendly materials throughout. Natural day lighting has been carefully considered to limit the need for artificial lighting. In addition to these measures a bike store has been provided at the rear of the house and a separate bin and recycling store has been incorporated adjacent to the front door, for ease of use. It is the intention to fit highly visible smart meters within the entrance area to help the users manage the energy use of the house.

3.4 Zero Carbon

The house has been designed to demonstrate compliance with the government's proposed 2016 Zero Carbon definition.

3.5 Delivering Passivhaus and Zero Carbon

bere:architects successfully designed and built London's first Passivhaus in Camden; certified in April 2010. This contemporary house is surrounded by properties which date from the late 19th / early 20th century, in red brick with attractive Queen Anne revival details. This innovative, sustainable and progressive project was welcomed and encouraged by Camden councillors who felt that "...it complemented the character and appearance of the area." The project goes far beyond the required regulatory minimum standards exceeding part L 2006 by 70%. The house meets the carbon compliance limit for 2016 zero carbon homes. bere:architects are principally a design lead firm and the Camden Passivhaus has recently been shortlisted for the RIBA awards 2011 and is shortlisted for the British Home Awards 2011.

Street View of the Camden Passivhaus

Wild flower meadow, Camden Passihaus

After completing London's first Passivhaus bere:architects went on to design two prototype Passivhaus dwellings funded by the Welsh Assembly Government, The Larch and the Lime Houses. The Larch house has recently also been certified as code for sustainable homes code level 6 and zero carbon. These houses have won numerous awards and short listings including the RICS awards 2011, Sustainable Housing Awards 2011, Exemplar Awards 2011, Sustain Magazine Awards 2011, Welsh Housing Awards 2010, Builder and Engineer Awards 2010 and Sustainability Awards 2010.

Garden View of the Larch Passivhaus

South elevation of the Larch and Lime Passivhaus dwellings

To enable us to deliver quality-assured low carbon buildings, we have developed in-house skills in building physics, and use software such as the Passivhaus Planning Package (PHPP), Heat 2, Therm and WUFI. These methods have enabled us, for example, to accurately predict the in-use energy consumption of our Camden Passivhaus; and design our zero carbon Welsh prototype to achieve overall negative energy costs.

Additionally we steadfastly carry out research to remain abreast of the latest European low carbon research and product developments. bere:architects are currently working on three government funded research case studies to monitor the in-use performance of the Camden Passivhaus, Welsh Passivhaus dwellings and our Mayville Community Centre, working in close collaboration with The University College London (UCL) and Cardiff University. Results obtained so far show that the buildings are all performing to their design targets.

As well as receiving training, we give free training to others in collaboration with organisations such as the RIBA and BRE, and also give numerous lectures around the UK to universities and other organisations.

3.6 Proposed Uses

The proposed use for the site residential accommodation.

3.7 Layouts

From an early stage in the design process the layouts were designed to create a home which would provide an active street frontage while maintaining privacy for the occupants. Planting has been incorporated at every level to connect the occupants with outside and to provide greenery for the street which is located within London's greenest borough.

The floor plans have been developed to maximise natural light and optimise the potential of the wedge shaped site. Economic use of space is central to the design with careful consideration of all the floor layouts.

3.8 Scale and massing

The scale and the massing of the house has been carefully considered to fit within the urban context of Elm Grove Road. While the approved scheme (08/4251/FUL) introduced new horizontal building lines which ignored the existing building lines, the new proposal instead works with the existing datum's set out by the terrace respecting the building lines and floor heights of the terrace. The house has been design to reflect the end of terrace house at the other end of the street, so that these two buildings bookend the terrace. As with the other end of terrace house this house has a second floor which extends up to the ridge height of the standard terrace buildings. This extended element is designed to take cognises of the existing scale of the terrace while presenting a more contemporary end point for the terrace.

The overall composition is one of a subtle unity between both the existing terrace and the new house and also with the overall existing terraced streetscape.

3.9 Appearance

Our approach to craftsmanship and refined detailing reflects the essence of a traditional approach. This building has a level of refined detailing more typically found on traditional buildings. It is this level of refined detailing that makes the building harmonious and compatible with its traditionally built neighbours.

The proposed materials of copper and natural timber (precedent image below) have been selected for being sympathetic to the existing building fabric of the street and complement the warm brick of the adjacent housing. While some contemporary design can be insensitive and even crude in the details, our delicately detailed approach delivers beautifully crafted buildings reflecting the craftsmanship of the surrounding building stock.

Camden council once wrote to us to say that it was this level of detailing in our previous work that convinced them that a contemporary building in our hands was acceptable for a site adjacent to a conservation area, where a different approach would not have been acceptable. Moreover in that particular case the same officer wrote to tell us that the very unusual quality of design would ensure that a precedent was not established, and upon completion, another officer announced that the result was even better than she expected. It is this careful and sympathetic approach which has enabled us to build some unusual but much-liked houses in sensitive locations.

Precedent for the proposed materials

3.10 Roof Gardens

As noted in 3.1.1.1 above the new house includes for 42.2 m^2 of green space through deep planters (14.4 m^2) able to support substantial native plants and a native wild flower meadow roof (27.8 m^2). The proposal will include integrated bird and bat boxes.

The wild flower meadow roof will be covered with sufficient soil build up (150mm) for wild flower planting. The extensive roof planting helps to improve microclimate and local ecology.

3.11 Structure

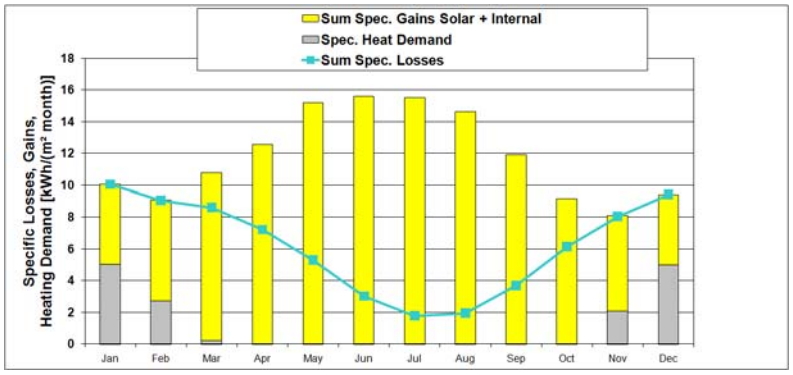
The intention is to have the main superstructure of the house prefabricated off-site. The prefabricated method of construction will reduced the time on site and therefore reduce the disruption to the neighbours. It will also minimise material waste and maximise the opportunity to recycle excess materials back into the construction process. The prefabrication process also provides superior quality control giving a level of precision difficult to achieve on site. It is the intention that the prefabricated structure will be a timber frame made up into super insulated panels before being delivered and installed on site.

3.12 Energy and water conservation

As part of the design process we have completed an energy analysis for the property. The energy demand of the house has been calculated using PHPP (Passivhaus Planning Package) which is an advanced and highly accurate energy measurement software for buildings. This has allowed us to determine how much heat energy the dwelling will require once complete.

Primary heat demand (energy required to heat the house)

For the new house the primary heat demand has been calculated to be 15kWh/(m^2a). The annual graph below shows that the heat demand for the proposed design never exceeds 5kWh/(m^2a) for any one month and shows that this very small heat input will only be required for 4 months of the year plus a tiny amount in March with no heating at all for the rest of the year. This tiny heat demand means that a traditional heating system can be totally omitted from the design. The very small amount of heat required can be supplied through the fresh air supply making significant carbon savings.



To put this in context the Primary Heat Demand for some other building types are noted below:

a traditional Victorian Townhouse	= approx. 200-300 kWh/(m^2a)
a typical new build project	= approx. 100kWh/(m^2a)
a good new build project	= approx. 50kWh/(m^2a)
a Passivhaus project	= ≤15kWh/(m^2a)

4. Access

Principal access to the site will be from Elm Grove Road. A secondary access will be from the lane adjacent to the site (behind Church Road).

4.1 Statement of Intent

We fully intend to comply with all current regulation and good practice. The project aims to provide accommodation for all sectors of society by being equally accessible in terms of age, disability, ethnicity and social grouping. In achieving this goal, our proposals have been designed to successfully comply with Part M regulations and where possible we will comply with all of the lifetime homes requirements.

4.2 Sources

We have referred to:

- Approved Document Part M
- www.lifetimehomes.org.uk
- National Planning Policy PPS1
- Local Planning Policy UDP and Core Strategy
- CLG (2006a). *Building a Greener Future: Towards Zero Carbon Development.* Available at: http://www.communities.gov.uk/documents/planningandbuilding/pdf/153125.pdf (Accessed: 13 January 2011).
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4.3 Specific Access Issues

Entrance:

There will be a ramp from the existing pavement level to the front door to provide level access while complying with the flood defence requirements.

Horizontal circulation:

The floors within the new house are level and the threshold between the building and front path are level, providing level access into the house.

All light switches will be positioned at 1200mm above floor level and door handles at 1000mm. Plug sockets will be located 450mm from the finished floor level

Vertical circulation:

Stairs will, where possible, comply with life time homes guidance.

Bike parking:

A bike store has been provided for two bikes at the rear of the house adjacent to the side access door to make it easily accessible for regular use.

Accepted Design Guidance

We do not foresee any deviation from the accepted design guidance.