Sustainable Design and Construction Statement

Kay Court
368-372 Finchley Road, Camden

Prepared by

metropolis green

On behalf of
Jewish Care

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on behalf of

Jewish Care

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EXECUTIVE SUMMARY

This Sustainable Design and Construction Statement (SDCS) follows the Mayor of London's Supplementary Planning Guidance ensuring that the proposed development at Kay Court is in compliance with London Plan policies on Sustainable Design and Construction.

The report details how the design team has considered the site's potential environmental impacts and how those impacts have been managed and mitigated in line with the prevailing spatial planning policies.

The proposed development has targeted sustainability throughout the lifetime of the proposals. In particular the energy efficiency measures will be integral to the building's design and specification. Passive design measures will also feature within the building to help prevent overheating and avoid excessive requirements for heating/cooling.

All of the proposed measures in this statement reduce the site's impact on the environment and contribute to its sustainability. The proposed scheme has satisfied the high standards of sustainability as prescribed by the relevant tiers of planning policy and has the potential to achieve Code for Sustainable Homes (Code) Level 3 with a score of 63.52.

CONTENTS

1.0 INTRODUCTION

1.1 This Sustainable Design and Construction Statement (SDCS) has been prepared by Metropolis Green to accompany the planning application submitted to the London Borough of Camden by Jewish Care for the redevelopment of the Kay Court site.

1.2 This SDCS addresses local and regional policies on sustainable buildings and also addresses issues that are covered by the Code for Sustainable Homes (Code) to assess the sustainability of the various elements of the development.

1.3 This SDCS highlights where a sustainability standard can be potentially met and how the principle will be achieved. This report assumes a basic understanding of the BRE Code assessment methodologies; however, for further information please refer to the Code Technical Guidance[1].

1.4 This SDCS should be read alongside the Energy Strategy produced by Metropolis Green, the Design and Access Statement produced by 21st Architecture Ltd and other supplemental reports, as referenced in this report.

1.5 This SDCS is laid out according to Section 1.6 in the Mayor's SPG Sustainable Design and Construction, as required by the Mayor's London Plan Policy 5.3, Sustainable Design and Construction.

1.6 Each section in this document demonstrates how the sustainability standards have been met and where a standard has not been met, justification is provided.

1 (http://www.communities.gov.uk/publications/planningandbuilding/codeguide)

2.0 SITE BACKGROUND AND PROPOSED DEVELOPMENT

2.1 The property is located at 368-372 Finchley Road, on the east side of Finchley Road close to its junction with Hendon Way.

2.2 The site is currently occupied by two separate 3 to 4 storey buildings along the Finchley Road frontage, including Kay Court which was previously used as a residential care home for the elderly (C2 use) by Jewish Care. The site also contains a single storey two-bedroom dwelling in the rear.

2.3 The site is surrounded to the north, south and east by existing 3 storey semi-detached housing, and to the west with a mix of 4-5 storey housing and commercial uses on Finchley Road. The wider surrounding area provides access to a variety of facilities, shops and convenience stores within close proximity.

2.4 The site is adjacent to Redington and Frognal Conservation area, which has predominantly early 20th century modest Arts and Crafts houses designed by the Architect Charles Quennell and developer George Hart. The existing buildings on the site are neither listed nor locally listed.

2.5 The proposal seeks to demolish the existing buildings and redevelop the site for residential accommodation (C3 use). The scheme proposes 6 affordable units (3 no. one-bedroom flats, 2 no. two-bedroom flats and 1 no. three-bedroom flat) and 18 private units (11 no. two-bedroom flats and 7 no. three-bedroom flats) in a new 4 storey building, with a basement car park (and storage and plant room) and a communal garden in the rear.

2.6 The scheme consists of two separate blocks, the south block being the larger of the two to accommodate the private residential units. The perimeter of the blocks follows the line of the existing footprint.

3.0 POLICY CONTEXT

3.0.1 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."

3.0.2 Planning has a key role to play in the creation of sustainable communities: communities that will stand the test of time, where people want to live, and which will enable people to meet their aspirations and potential.

3.1 National Policy

PPS1 Delivering Sustainable Development

3.1.1 PPS1 sets out the overarching planning policies on the delivery of sustainable development through the planning system.

3.1.2 A key principle of PPS1 is that sustainable development should be pursued in an integrated manner, in line with the principles for sustainable development set out in the UK strategy. Regional planning bodies and local planning authorities should ensure that development plans promote outcomes in which environmental, economic and social objectives are achieved together over time.

3.1.3 Sustainable Development can be achieved by ensuring:

- Social Cohesion and Inclusion
- Protection and Enhancement of the Environment
- Prudent use of Natural Resources
- Sustainable Economic Development
- Integration of Sustainable Development into Development Plans, Spatial Plans and Design
- Community Involvement

PPS1 Planning Policy Statement: Planning and Climate Change - Supplement to Planning Policy Statement 1

3.1.4 This PPS on climate change sets out how planning should contribute to reducing emissions and stabilising climate change.

3.1.5 Applicants for planning permission should consider how well their proposals for development contribute to the Government's ambition of a low-carbon economy and how well adapted they are for the expected effects of climate change.

3.1.6 The guidance requests planning authorities, developers and other partners in the provision of new development to engage constructively and imaginatively to encourage the delivery of sustainable buildings.

3.2 Regional Policy

London Plan 2011

Policy 5.3 Sustainable Design and Construction

3.2.1 Development proposals should demonstrate that sustainable design standards are integral to the proposal, including its construction and operation, and ensure that they are considered at the beginning of the design process.

3.2.2 Major development proposals should meet the minimum standards outlined in the Mayor's supplementary planning guidance and this should be clearly demonstrated within a design and access statement. The standards include measures to achieve other policies in this Plan and the following sustainable design principles:

- minimising carbon dioxide emissions across the site, including the building and services (such as heating and cooling systems)
- avoiding internal overheating and contributing to the urban heat island effect
- efficient use of natural resources (including water), including making the most of natural systems both within and around buildings
- minimising pollution (including noise, air and urban run-off)
- minimising the generation of waste and maximising reuse or recycling
- avoiding impacts from natural hazards (including flooding)

- ensuring developments are comfortable and secure for users, including avoiding the creation of adverse local climatic conditions
- securing sustainable procurement of materials, using local supplies where feasible, and
- promoting and protecting biodiversity and green infrastructure.

3.2.3 The subtext to policy 5.3 indicates that principles underlying sustainable design and construction reflect a number of policies in the London Plan.

3.2.4 The Mayor's approach to Sustainable Design and Construction is compatible with the Code for Sustainable Homes (Code). The Mayor also indicates his intention for the London Plan to be consistent with national standards for non-domestic buildings as they become adopted.

3.2.5 Please note that the Mayor's supplementary planning guidance on Sustainable Design and Construction (May 2006) pre-dates the current London Plan; therefore, the Essential and Preferred Standards listed in sections 4.0 to 11.0 of this report may contain policy section references to the former London Plan. This referencing does not affect the general content and intent of the Essential and Preferred Standards.

3.2.6 Further London Plan policies that are relevant to sustainable design and construction include:

- Policy 5.6 Decentralised energy in development proposals
- Policy 5.7 Renewable energy
- Policy 5.8 Innovative energy technologies
- Policy 5.9 Overheating and cooling
- Policy 5.10 Urban greening
- Policy 5.11 Green roofs and development site environs
- Policy 5.12 Flood risk management
- Policy 5.13 Sustainable drainage
- Policy 5.14 Water quality and wastewater infrastructure
- Policy 5.15 Water use and supplies
- Policy 5.16 Waste self-sufficiency
- Policy 5.17 Waste capacity

3.2.7 The above London Plan Policies cover issues that are largely consistent with the criteria that are required to be achieved in order to achieve Code Level 3.

3.3 Local Policy

3.3.1 The London Borough of Camden's Core Strategy sets out the key elements of the Council's planning vision and strategy for the borough. It is the central part of Local Development Framework (LDF) and was adopted in November 2010. The LDF is a group of documents setting out the borough's planning strategy and policies.

3.3.2 The Core Strategy contributes to achieving the vision and objectives of Camden's Community Strategy and helps the Council's partners and other organisations deliver relevant parts of their programmes. It covers the physical aspects of location and land use but also addresses other factors that make places attractive, sustainable and successful, such as social and economic matters. It plays a key part in shaping the kind of place Camden will be in the future, balancing the needs of residents, businesses and future generations.

3.3.3 Within the Core Strategy there are specific policies relating to sustainability.

3.3.4 The Core Strategy sets out the Council's approach to managing Camden's growth so that it is sustainable, meets our needs for homes, jobs and services, and protects and enhances quality of life and the borough's many valued and high quality places. Section 3 focuses on delivering the key elements of Camden's strategy relating to:

- making Camden more sustainable and tackling climate change, in particular improving the environmental performance of buildings, providing decentralised energy and heating networks, and reducing and managing our water use;
- promoting a more attractive local environment through securing high quality places, conserving our heritage, providing parks and open spaces, and encouraging biodiversity;
- improving health and well-being;
- making Camden a safer place while retaining its vibrancy; and
- dealing with our waste and increasing recycling.

3.3.5 The implications of our actions on the environment are increasingly clear and action is needed at global, national and local levels. The Core Strategy has an important role in reducing Camden's environmental impact and achieving sustainable development – meeting our social, environmental and economic needs in ways that protect the environment and do not harm our ability to meet our needs in the future. A Sustainable Camden that adapts to a growing population is one of the elements in the vision in Camden's Community Strategy.

3.3.6 The Core Strategy Policy CS13 sets out the approach that developers should take when considering energy and carbon reductions for developments.

CS13 – Tackling climate change through promoting higher environmental standards

Reducing the effects of and adapting to climate change

3.3.7 The Council will require all development to take measures to minimise the effects of, and adapt to, climate change and encourage all development to meet the highest feasible environmental standards that are financially viable during construction and occupation by:

a) ensuring patterns of land use that minimise the need to travel by car and help support local energy networks;

b) promoting the efficient use of land and buildings;

c) minimising carbon emissions from the redevelopment, construction and occupation of buildings by implementing, in order, all of the elements of the following energy hierarchy:

1. ensuring developments use less energy,

2. making use of energy from efficient sources, such as the King's Cross, Gower Street, Bloomsbury and proposed Euston Road decentralized energy networks;

3. generating renewable energy on-site; and

d) ensuring buildings and spaces are designed to cope with, and minimise the effects of, climate change.

3.3.8 The Council will have regard to the cost of installing measures to tackle climate change as well as the cumulative future costs of delaying reductions in carbon dioxide emissions.

Local energy generation

3.3.9 The Council will promote local energy generation and networks by:

e) working with our partners and developers to implement local energy networks in the parts of Camden most likely to support them,

f) protecting existing local energy networks where possible (e.g. at Gower Street and Bloomsbury) and safeguarding potential network routes (e.g. Euston Road).

Water and surface water flooding

3.3.10 We will make Camden a water efficient borough and minimise the potential for surface water flooding by:

g) protecting our existing drinking water and foul water infrastructure, including Barrow Hill Reservoir, Hampstead Heath Reservoir, Highgate Reservoir and Kidderpore Reservoir;

h) making sure development incorporates efficient water and foul water infrastructure;

i) requiring development to avoid harm to the water environment, water quality or drainage systems and prevents or mitigates local surface water and down-stream flooding, especially in areas up-hill from, and in, areas known to be at risk from surface water flooding such as South and West Hampstead, Gospel Oak and King's Cross.

Camden's carbon reduction measures

3.3.11 The Council will take a lead in tackling climate change by:

j) taking measures to reduce its own carbon emissions;

k) trialling new energy efficient technologies, where feasible; and

l) raising awareness on mitigation and adaptation measures.

3.3.12 The Core strategy has informed the Council's Development Polices. Section 3 of this document set out a number of policies to promote sustainability and tackle climate change.

3.3.13 The objectives of Section 3 are enforced through policy DP22 Promoting sustainable design and construction and DP23 Water.

Policy DP22 - Promoting sustainable design and construction

3.3.14 The Council will require development to incorporate sustainable design and construction measures. Schemes must:

a) demonstrate how sustainable development principles, including the relevant measures set out in paragraph 22.5, have been incorporated into the design and proposed implementation; and

b) incorporate green or brown roofs and green walls wherever suitable.

3.3.15 The Council will promote and measure sustainable design and construction by:

c) expecting new build housing to meet Code for Sustainable Homes Level 3 by 2010 and Code Level 4 by 2013 and encouraging Code Level 6 (zero carbon) by 2016.

3.3.16 The Council will require development to be resilient to climate change by ensuring schemes include appropriate climate change adaptation measures, such as:

f) summer shading and planting;

g) limiting run-off;

h) reducing water consumption;

i) reducing air pollution; and

j) not locating vulnerable uses in basements in flood-prone areas.

Policy DP23 - Water

3.3.17 The Council will require developments to reduce their water consumption, the pressure on the combined sewer network and the risk of flooding by:

a) incorporating water efficient features and equipment and capturing, retaining and re-using surface water and grey water on-site;

b) limiting the amount and rate of run-off and waste water entering the combined storm water and sewer network through the methods outlined in part a) and other sustainable urban drainage methods to reduce the risk of flooding;

c) reducing the pressure placed on the combined storm water and sewer network from foul water and surface water run-off and ensuring developments in the areas identified by the North London Strategic Flood Risk Assessment and shown on Map 2 as being at risk of surface water flooding are designed to cope with the potential flooding;

d) ensuring that developments are assessed for upstream and downstream groundwater flood risks in areas where historic underground streams are known to have been present; and

e) encouraging the provision of attractive and efficient water features.

Camden Planning Guidance Sustainability (CPG3)

3.3.18 The Core Strategy is supported by Supplementary Planning Documents (SPDs) which play an important role in planning decisions. SPDs

provide detailed guidance on how planning strategy and policies will be implemented for specific topics, areas and sites.

3.3.19 CPG3 contains advice and guidance for developers on ways to achieve carbon reductions and more sustainable developments. It also highlights the Council's requirements and guidelines which support the relevant Local LDF policies, including DP22 as noted above.

3.3.20 Section 9 covers sustainability assessment tools, with the Code being of particular relevance to this development. The key message of the document is that a new build dwelling will have to be designed in line with the Code for Sustainable Homes.

3.3.21 The Code for Sustainable Homes has a clear timetable for the delivery of sustainable buildings up to 2016 when new housing will be expected to be zero carbon. Developers are strongly encouraged to meet the following standards in accordance with Development Policy DP22 - Promoting sustainable design and construction:

Time period	**Minimum rating**	**Minimum standard for categories (% of un-weighted credits)**
2010-2012	Level 3	Energy 50%
2013-2015	Level 4	Water 50%
2016+	Level 6 'zero carbon'	Materials 50%

3.4 Environmental Assessment Method: Code for Sustainable Homes

3.4.1 The Code for Sustainable Homes (Code) is an environmental assessment for rating and certifying the performance of new dwellings. It is a national standard and was published by the Department for Communities and Local Government in December 2006. From April 2007, the Code replaced EcoHomes. The Building Research Establishment (BRE) are responsible for administering and monitoring the scheme and are also responsible for all certification and quality assurance of this national environmental standard for housing.

3.4.2 The Code measures the sustainability of a new home against 9 categories of sustainable design, rating the 'whole home' as a complete package. The Code uses a 1 to 6 star rating system to communicate the overall level of the environmental performance of the new home.

3.4.3 Each category consists of a number of issues, and each issue seeks to mitigate the impact of a new build element of the building against performance targets and assessment criteria.

3.4.4 The Code assessment is completed in two phases – the Design Stage and the Post Construction Stage (PCS). Only after the PCS assessment has been completed and all the evidence for achieving the target level has been submitted will the final certification for the dwelling be issued by BRE.

4.0 RE-USE OF LAND & BUILDINGS

4.1 Introduction

4.1.1 London has a large population and a comparatively small land area; therefore land is a precious, finite resource. The efficient use of land requires that developments optimise the carrying capacity of land, that previously developed land is re-used, and that green spaces within London are protected and opportunities for the provision of new open space are maximised.

4.2. Land

	Comments	**Complies**
Essential Standards *100% of development on previously developed land, unless very special circumstances can be demonstrated.*	The site comprises 0.22 ha and has been previously developed, containing 3 existing buildings. Therefore, the site is classed as previously developed land.	Yes
Development density should be maximised based on local context and (Policy 4B.7) design principles (Policy 4B.1), open space provision (Policy 3D.10) and public transport capacity (Policy 3C.10).	The development density has been appropriately maximised given the site's context and adjacency to the Redington and Frognal Conservation Area. The proposed building footprint is the same as the existing, with the bungalow removed. The proposed building to plot ratio is therefore the same as existing which is relatively consistent along this part of Finchley Road. The site is well served by the bus routes that pass along Finchley Road, Hendon Way and Cricklewood Lane. Cricklewood rail station is located approximately 1,300 m west of the site and West Hampstead rail station is located approximately 1,500 m from the site; both stations are served by local bus routes. The nearest underground station (16-20 minute walk) is Golders Green on the Edgware branch of the Northern line and is also served by local bus routes.	Yes

Additional Comments
The proposed development not only improves and enhances previously developed land, but also appropriately maximises the density of the site. It is clear that the density of the site has considered the local and immediate contexts and as such is considered to satisfy the Mayor's essential standards for land.

4.3 Buildings

	Comments	**Complies**
Essential Standard *Existing buildings are reused where practicable, where the density of development and residential amenity are optimised and where the building conforms to or has the potential to meet the standards for energy, materials, biodiversity and water conservation set out in this SPG.*	The design team have determined that it is not practicable to reuse the existing buildings. The proposed redevelopment of the site will appropriately optimise the density of the site and will meet the standards for energy, materials, biodiversity and water conservation set out in the SPG.	Yes
Preferred Standard *Existing roof space reused where practicable to create new outdoor spaces and enhance biodiversity alongside the integration of renewable energy (section 2.3.2)*	The design team have determined that it is not practicable to reuse the existing buildings; therefore roof space will not be reused. The proposed use of the new roof space maximises the roof's potential in terms of the integration of renewable energy (photovoltaics) and the introduction of a green roof. Although new accessible outdoor space is not created using the roofs, there are balconies/terraces, private gardens and significant communal garden areas created as part of this proposal.	Yes

5.0 MAXIMISE THE USE OF NATURAL SYSTEMS

5.1 Introduction

5.1.1 The overriding principle is that location, urban design, passive solar design and maximising the use of natural ventilation should be used to minimise resource use and maximise the comfort of users over the lifetime of the development. The main climatic influences on internal comfort include solar heat and air flow. Building facades are the interface between the external and internal climate. Buildings need to be designed to be able to adapt to the likely effects of climate change on London's climate over the next decades.

5.2 Location and Urban Design

	Comments	**Complies**
Essential Standard *All development to follow the principles of good design set out in London Plan policy 4B.1*	The proposed development is of high quality design and comprises dwellings that are accessible and in demand in the local area (including affordable units). The principles of London Plan policy have been clearly addressed in the Design and Access Statement prepared by 21st Architecture Ltd, this SDCS, and by demonstrating that the target of achieving Code Level 3 will be met. Achieving these standards will ensure that the Mayor's Essential Standards are satisfied.	Yes
Preferred Standard *Minimise need for and use of mechanical ventilation, heating and cooling systems*	There is no proposal to generally ventilate common circulation areas beyond the opening of windows and by natural air infiltration. However an AOV system will be provided to meet the requirements of the Fire Strategy. The basement carparking, plant room and refuse store areas will be naturally ventilated as detailed on the architect's drawings. The flats' ventilation will be designed to operate under Building Regulations Part F System 3, continuous mechanical extract, with fresh air inlets by trickle vents in the windows, and extract from all wet rooms by a Mechanical Extract Ventilation unit (MEV) in each flat. It is proposed that kitchens within the flats are	No

	provided with a recirculation cooker extractor hood. There is no proposal for air-conditioning systems within any of the flats.	

5.3 Adapting to Climate Change

	Comments	Complies
Essential Standards *Buildings provide for flexibility of uses during their projected operational lives*	The proposed new building on the site will keep internal load bearing walls to a minimum in order to offer future flexibility by allowing the building's use and layout to be easily converted in the future.	Where appropriate/ possible
Buildings adapted to and mitigate for the effects of the urban heat island and the expected increases in hot dry summers and wet mild winters.	The orientation and positioning of the new building have largely been determined by the design response to the local context. The proposed development has, however, been designed to maximise daylight and sunlight where possible and reduce the need for artificial lighting during the daytime hours. Wherever possible the internal layouts of the development will be arranged to maximise sunlight where beneficial in winter, but with solar shading to prevent overheating in summer. Low U-values will be achieved through effective wall, roof and floor insulation to ensure that 2010 Building Regulation standards are achieved. A high level of air tightness has been designed in the new building which will require excellent workmanship. Extensive soft landscaping will be introduced across the site and through the introduction of a green roof, improving the existing condition and further mitigating the Urban Heat Island effect associated with buildings surrounded by hard landscaping.	Where possible

Design in facilities for bicycles and electric vehicles	The development will provide 44 secure covered cycle spaces within the grounds of the development. To ensure that full credits under the Code are achieved for this issue, the cycle spaces will meet the requirements of the Code technical guidance. The level of cycle parking provided by the scheme is in accordance with London Borough of Camden and Transport for London (TfL) cycle parking standards. At the detailed design stage, the design team will consider the provision of electric charging points in accordance with regional and local policy.	Yes
Additional Comments		
With respect to the encouragement of non carbon based transport modes, as noted in section 2.2.3 of the London Plan, Kay Court is served by a number of public transport links within close proximity to the site. A range of bus routes pass along Finchley Road, Hendon Way and Cricklewood Lane, with connections to Cricklewood and West Hampstead rail stations and Golders Green underground station. The site has a Public Transport Accessibility Level (PTAL) of 4 (Good). The site's location and proximity to various amenities along Finchley Road will enable many trips made by residents to be made on foot or on local public transport, rather than by private car. The site layout has been designed in accordance with best practice to ensure safe and adequate pedestrian and cycle access to further support walking, the use of bicycles, and means of public transport.		

6.0 CONSERVE ENERGY, WATER & OTHER RESOURCES

6.1 Introduction

6.1.1 London is promoting the development of resource efficient buildings, from inception to demolition. This includes the efficient use of energy, materials and water. These issues have been addressed in part by the Mayor's renewables policy and by the Code and EcoHomes as detailed in the sections below.

6.2 Energy

	Comments	**Complies**
Essential Standards *Carry out energy demand assessment* *Maximise energy efficiency* *Major commercial and residential developments to demonstrate that consideration has been given to the following ranking method for heating and where necessary, cooling systems:* *passive design; solar water heating; then combined heat and power for heating and cooling (i.e. trigeneration), preferably fuelled by renewables; then community heating and cooling then heat pumps; and then gas condensing boilers.* *Wherever on site outdoor lighting is proposed as part of a development, it should be energy efficient, minimising light lost to sky.* *Carbon emissions from the total energy needs (heat, cooling and power) of the development should be reduced by at least 20% by the on-site generation of renewable energy.*	Following the energy hierarchy has enabled significant carbon reductions to be calculated for the proposed development at Kay Court. The total overall carbon reduction is predicted to be approximately 25.12% with renewables contributing 11.07%. These calculations demonstrate that the development will meet the mandatory Code Ene 1 requirements and that the development is on track to achieve certification at the required minimum level of Code Level 3. In accordance with the London Plan requirements and the energy hierarchy, 'whole energy' figures produced using SAP calculations have been used in this energy strategy, including: heating, hot-water, lighting, pumps and fans and un-regulated energy. The proposed development at Kay Court is calculated to have a 'whole energy' Notional Baseline of 132,820 kgCO_2/yr. In the first stage of the energy hierarchy (Be Lean), calculations to determine the Efficient Baseline predict an 11.62% carbon reduction through the proposed energy efficiency measures. This results in a reduction of 15,435 kgCO_2/yr from the	Yes

	Notional baseline to the Efficient Baseline. The risk of summer overheating in the dwellings on site has been addressed with a range of passive measures, and there will be no requirement for active cooling for this site. The second stage (Be Clean) calculations to determine the Low Carbon Baseline predict that specification of CHP can deliver a further carbon reduction of 5,581 kg/CO_2, which equates to a 4.75% reduction from the Efficient to Low Carbon Baseline, and can be expressed as a total 11.62% carbon emission reduction from the Notional Baseline. Finally, calculations to determine the Renewable Baseline have determined PV to be the most suitable renewable energy technology for to the site. The modelled PV panel array contributing a further carbon reduction of reduction of 12,349 kgCO_2/yr, which is an 11.07% reduction from the Low Carbon Baseline. These reductions are achieved utilising 188.16m^2 of 185Wp PV panels. The calculations show that the fabric efficiency measures, specification of CHP and PV can achieve an overall total 25.12% CO_2 reduction from the Notional Baseline. The scope for CO_2 reduction using renewables is limited by the available roof space. Nonetheless, the size and output of the PV array has been maximised using all available roof space on the existing and new buildings. The London Plan policy 5.7 and London Borough of Camden policy requirements are for a 20% reduction in CO_2 emissions due to the specification of renewables. Clearly this target has not been met with the 11.07% carbon reduction from on-site renewables. However, it should be noted that it is possible to achieve a total 'whole energy'	

	CO2 reduction from the Notional Baseline of 25.12%. Additionally in the context of the London Plan policy 5.2, the site achieves significant DER over TER improvements of 43.77% which exceeds the 25% improvement over the 2010 Building Regulations. This achievement contributes a significant number of credits to the Code Ene 1 issue. In accordance with Code issue Ene 6 and meeting the Mayor's Essential Standard, all external space lighting has been specified to accommodate only compact fluorescent lamps (CFL).	
Preferred Standards *All developments to demonstrate that consideration has been given to the following ranking method for heating and where necessary for cooling, systems and should incorporate the highest feasible of the following options:* *-solar water heating; then* *-combined heat and power/trigeneration, preferably fuelled by renewables; then* *-community heating.* *New developments should always be connected to existing community heating networks preferably fuelled by renewables where feasible.* *Wherever outdoor lighting or other electrically powered street furniture is proposed on site, it should be solar powered and minimise light lost to the sky.* *Lighting, heating and cooling controls should enable services to operate efficiently under*	See above and the Energy Strategy, prepared by Metropolis Green.	Where appropriate

different loadings and allow for localised control. *Major developments should be zero carbon emission developments (ZEDs).* *Major developments should make a contribution to London's hydrogen economy through the adoption of hydrogen and/or fuel cell technologies and infrastructure.*		
Additional Comments		
The proposed development meets the requirement of London Borough of Camden policy (through DP22 and CPG3) to achieve 50% of the credits in the Energy category of the Code. The Code Pre Assessment Estimator found in Appendix A has been prepared in line with the Energy Strategy prepared by Metropolis Green and shows 15.7 of 31 credits (50.65%) can be achieved.		

6.3 Materials

	Comments	**Complies**
Essential Standards *50% timber and timber products from Forest Stewardship Council (FSC) source and balance from a known temperate source.* *Insulation materials containing substances known to contribute to stratospheric ozone depletion or with the potential to contribute to global warming must not be used.* *Minimise use of new aggregates.*	The design team has committed to at least 80% FSC approved timber and 100% legally sourced timber for the development, thus going above and beyond the Mayor's Essential Standard. Another Essential Standard will be met through the specification of insulation materials with a Global Warming Potential (GWP) of less than 5 and a low embodied impact relative to their thermal properties, determined by the Green Guide Specification Ratings. This specification will also satisfy Code issue Pol 1. The design team has also committed to minimising the use of new aggregates thus complying with the Mayor's Essential Standards. Demolition waste from the refurbished building currently occupying the site will be	Yes

	reused where appropriate. In addition, the design team is aiming to reuse waste materials produced during construction work.	
Preferred Standards *No construction material nor specification with high embodied impact to be used (as defined by the summary ratings within the Green Guide to Specification) unless a compelling whole life energy or technical case for its use exists*	The Materials category in the Code promotes the sustainable procurement and use of materials, taking into account the environmental impacts of materials and the responsible sourcing of basic building and finishing elements, by using the BRE Green Guide to Specification. The design team has committed to achieving a high score under the Mat 1 issue and will not be specifying materials with high embodied impact.	Yes
Additional Comments		
There will be a requirement that the main contractor will have a policy for sustainable environmental sourcing of construction materials. This will be confirmed during the design stage environmental assessments. The source of the materials has not yet been specified; however local materials will be procured where it is viable to do so, thus attempting to achieve the Mayor's Preferred Standard. The proposed development meets the emerging requirement of London Borough of Camden policy (through DP22 and CPG3) to achieve 50% of the credits in the Materials category of the Code. The Code Pre Assessment Estimator found in Appendix A has been prepared in line with commitments from the design team and shows 17 of 24 credits (70.83%) can be achieved.		

6.4 Water

	Comments	**Complies**
Essential Standard *100% metering of all newly built property*	The dwellings will be individually metered for water.	Yes
Preferred Standards *Use of greywater for all non-*	Investigations into incorporating greywater recycling (GWR) and/or rainwater harvesting (RWH) have been undertaken.	Where appropriate

potable uses. *These standards are based on the principles of:* • *Incorporating water saving devices* • *Making use of alternative water sources* • *Designing low water use landscaping and gardens*	An RWH system has been specified for the proposed development, the details of which can be finalised at the detailed design stage. A GWR system has not been specified for the proposed development.	
Additional Comments		
The reduction of water consumption in the development has been targeted by the design team. As water consumption is potentially one of the highest impact areas of any building over its lifetime, the design team are targeting water consumption as a key area for improvement. This objective will satisfy the mandatory requirements of Code issue Wat 1. Water consumption across the development will be significantly reduced through the use of low flow fixtures and fittings, including taps, showers and dual flush toilets. Toilets will have guidance or symbols instructing the user on the appropriate operation of the flushing device. The proposed specification of low flow sanitary bathroom fitting and fixtures and appliances (where applicable) will help to achieve substantial savings in water consumption throughout the life cycle of the proposed development. This water strategy ensures that the all of the proposed units comply with Building Regulations Part G and the Code target of reducing water consumption to 105 litres per person per day in order to achieve a minimum of Code Level 3. The proposed development meets the emerging requirement of London Borough of Camden policy (through DP22 and CPG3) to achieve 50% of the credits in the Water category of the Code. The Code Pre Assessment Estimator found in Appendix A has been prepared in line with commitments from the design team and shows 4 of 6 credits (66.67%) can be achieved.		

7.0 NOISE, POLLUTION, FLOODING AND MICROCLIMATIC EFFECTS

7.1 Introduction

7.1.1 New development needs to take into account the adverse effects it may have on noise, pollution, flooding and micro-climatic effects. All new developments should minimise contributions to flooding and include appropriate mitigation for potential worst case situations.

7.2 Noise

	Comments	**Complies**
Essential Standards *Demonstrate that adverse impacts of noise have been minimised, using measures at source or between source and receptor (including choice and location of plant or method, layout, screening and sound absorption) in preference to sound insulation at the receptor, wherever practicable*	Airborne sound insulation values will be at least 5db higher, and impact sound insulation values will be 5db lower, than the performance standards set out in the Building Regulations Approved Document Part E. Compliance is expected to be shown via sound testing. These improvements will contribute to indoor comfort for the new residential units on the site as well as reduce the likeliness of nuisance due to noise transmission. This complies with the Mayor's Essential and Preferred Standards and is rewarded by the Code.	Yes

7.3 Air Pollution

	Comments	**Complies**
Essential Standards *All new gas boilers should produce low levels of NO_X* *Take measures to reduce and mitigate exposure to air pollution*	In compliance with issue Pol 2 of the Code, the proposed heating plant for the scheme is anticipated to achieve NOx emissions of less than 70mg/kWh.	Yes

Preferred Standard *Low emission developments that are designed to minimize the air quality impact of plant, vehicles and other sources over the lifetime of the development*	The development will provide 44 secure cycle spaces. These spaces will be designed to be compliant with the Code criteria for cycle parking to contribute to achieving credits. The high number of cycle spaces and the close proximity of local amenities will be an incentive for residents to walk, cycle and use public transport rather than use the private car; therefore reducing associated carbon emissions and pollutants.	Yes

7.4 Water Consumption, Water Pollution and Flooding

	Comments	**Complies**
Essential Standards *Use of Sustainable Drainage Systems (SUDS) measures, wherever practical* *Achieve 50% attenuation of the undeveloped site's surface water run-off at peak times*	The Environment Agency indentifies the site as being in within a zone of low annual probability of flooding. In terms of surface water runoff, the proposed development will increase the amount of permeable land on the site through the removal of the bungalow in the rear garden and the provision of a green roof. The green roof substantially increases the site's permeable coverage which will positively contribute to the site's ability to attenuate surface water run off compared with the existing situation. It will also contribute to achieving the mandatory Code Sur 1 credits in the Code. The precise amount of surface water run off attenuation will be determined at the detailed design stage of the green roof and other landscaping, and the design team is committed to maximising the potential incorporation of SUDS.	Yes

Preferred Standard *Achieve 100% attenuation of the undeveloped site's surface water run-off at peak times*	As above, the precise amount of surface water run off attenuation will be determined at the detailed design stage of the green roof and other landscaping, and the design team is committed to maximising the potential incorporation of SUDS.	Where possible

7.5 Microclimate

	Comments	**Complies**
Essential Standard *Mitigate any negative impact on the microclimate of existing surrounding public realm and buildings to meet the Lawson criteria for wind comfort and safety*	The footprint and massing of the proposed development is largely in line with the existing buildings on the site, and as such the local climate is not considered to be affected. If necessary, a Wind Environment Study can be prepared at the detailed design stage. Furthermore, the scheme is not near a large expanse of water and occurrences such as wind tunnelling are not deemed to be an issue for this site. Therefore the development meets the Essential Standard by avoiding the creation of adverse local climatic conditions.	Yes

8.0 ENSURE DEVELOPMENTS ARE COMFORTABLE AND SECURE

8.1 Introduction

8.1.1 Sustainable communities will only be sustainable if they have been designed with people, as well as the environment, in mind. Developments must be comfortable and safe to use for all sections of society and all cultures and religions. This includes internal and external comfort with regards to health, accessibility, secure design and safe transport links.

8.2 Indoor Comfort

	Comments	**Complies**
Essential Standards *Inert or low emission finishes, construction materials, carpets and furnishings should be used wherever practical.* *All plant and machinery should be accessible for easy maintenance*	The comfort of prospective occupants of the building is an extremely important aspect of the proposed scheme given the high expectations of the end users. As such, the comfort of the rooms will be carefully considered and quality fittings will be specified. Any refrigerants will be specified with a global warming potential (GWP) of less than 5. Any plant associated with the development will be located in the basement; therefore easily accessible and thus meeting the Mayor's Essential Standard.	Yes
Preferred Standard *Design buildings for indoor comfort of users*	The measures listed above ensure compliance with the Mayor's Preferred Standard to design buildings for the indoor comfort of users. In addition, excellent air quality is a key objective for the proposed scheme; therefore the team have sought to ensure that air intakes serving occupied areas will avoid major sources of external pollution and recirculation of exhaust air. The design team has taken steps to reduce the potential risk of airborne pollutants	Yes

	released from buildings thus complying with this Preferred Standard. Adverse health impacts can result from: • Volatile Organic Compounds (VOCs) - Released from many synthetic materials, furnishing and chemical products. Many VOCs are respiratory irritants. • Carbon Monoxide - Problems arise with poorly maintained equipment and when chimneys or flues are blocked, or if there is not sufficient ventilation to supply air to the appliance or where air intakes are located too close to roads or areas used for car parking. • Fine Particles - less than 10µm in diameter can cause irritation and respiratory problems. In order to address these potential issues, the design team is aware that specified materials should not contain or emit toxic chemicals, for example: natural materials and low solvent finishing products and furnishings. These products are rated highly in the Green Guide and will be rewarded by the Code Materials category. In addition, excellent ventilation is vital during construction, to aid the removal of chemicals. Designing for and managing internal air quality will benefit the health of building occupiers. High quality sound insulation between walls will also contribute to indoor comfort by reducing the likeliness of nuisance due to noise transmission. The installation will be in compliance with Code issue Hea 2.	

8.3 Designing Inclusive Environments

	Comments	Complies
Essential Standards *All developments should meet the principles of inclusive design, adopting the principles of SPG Accessible London: Achieving an Inclusive Environment.*	The development is accessible for people walking, cycling and travelling by public transport. Safe and convenient pedestrian and cycle access will be provided around the site. Level access will be provided to the private units. As a result of site topography, level access to the affordable units is not possible. 10% of the private units will be adaptable to wheelchair units. During all stages of the design process the following documents and legislation will be used to ensure that this building continues to achieve the requirements for a barrier free environment, where possible: • Approved Document Part M 2004 Edition of the Building Regulations. • BS. 8300: 2001 Design of Buildings and their approaches to meet the needs of disabled people – Code of Practice. • BS. 5588: Part 8 1999 Fire precautions in the design, construction and use of buildings Part 8: Code of practice for means of escape for disabled people. • BS9999 Code of practice for fire safety in the design, management and use of buildings. It is intended that the residential units within the proposed development will target Lifetime Homes criteria in accordance with Code issue Hea 4.	Where possible
Preferred Standard *Developments should be fully e-enabled*	The development will be e-enabled by the provision of accessible duct routes to facilitate the installation of IT systems, in accordance with the Mayor's Preferred Standard.	Yes

8.4 Secure Design

	Comments	Complies
Essential Standard *Developments should incorporate principles of "secured by design" (SBD).*	The proposed development has been designed with site security as a major consideration and it is the project team's intention to meet the principles of Secured by Design (SBD). The design team will engage an Architectural Liaison Officer (ALO) or Crime Prevention Design Advisor (CPDA), as appropriate. To comply with issue Ene 6 of the Code, intruder security lighting will be specified as 150 watts maximum and be fitted with PIR and day light sensor. Additional security lighting will utilise CFLs or fluorescent strips only and be fitted with dawn to dusk sensors/timers. The proposed development will meet the requirements of SBD satisfying both the Mayor's Essential Standard, and Code issue Man 4 for achieving the SBD credits. Compliance with these credits will not comprise achieving credits elsewhere in the assessment.	Yes

9.0 CONSERVE & ENHANCE THE NATURAL ENVIRONMENT & BIODIVERSITY

9.1 Introduction

9.1.1 Open and green spaces can contribute to the image and vitality of urban areas. As London becomes more compact and intensive in its built form, the value of these open spaces will increase. Open spaces will need to fulfil a multitude of functions, from educational to social and cultural to sport and recreation, as well as visual respite from the hard urban areas. In addition, open and green spaces support a diverse wildlife in London.

9.2 Open space

	Comments	**Complies**
Essential Standard *No net loss of publicly accessible open space*	The site does not currently contain publicly accessible open space. The proposed redevelopment will not result in the loss of any publicly accessible open space.	Yes
Preferred Standard *Create appropriate new open, green publicly accessible spaces where these can address identified areas of deficiency of public open space*	The proposed development will provide a communal garden. However, because public open space will not provided the Mayor's Preferred standard will not be met.	No
Additional Comments		
The proposed development includes the creation of communal gardens and seating areas for residents of both the affordable and private units.		

9.3 Natural Environment and Biodiversity

	Comments	**Complies**
Essential Standards *No net loss of biodiversity and access to nature on the development site.*	A Suitably Qualified Ecologist (SQE) has been commissioned to confirm that no net loss of biodiversity will result from the proposed development. Ecological protection measures will be implemented as per the Tree/Vegetation	Yes

Reduction in areas of deficiency of access to nature.	Removals and Protection Plan and landscaping will be implemented as per the Landscape Proposals plan, both prepared by Land Use Consultants.	
Preferred Standard *Net gain of biodiversity and access to nature on the development site*	The proposed development has the potential to increase biodiversity on the site through the proposed landscaping scheme. The proposal includes an increase in the garden/landscaped areas (including a green roof) when compared to the existing condition. The new garden/landscaped areas will have a positive impact upon biodiversity on the site. Whilst the proposal will likely meet both the Mayor's Essential and Preferred Standards, an SQE has been commissioned to confirm that there is a net gain in biodiversity and ecological value in order for the scheme to achieve credits under the Ecology category of the Code.	Yes

10.0 PROMOTING SUSTAINABLE WASTE BEHAVIOUR

10.1 Introduction

10.1.1 London produces about 17 million tonnes of solid waste every year. Of this, the councils collect 4.4 million tonnes of municipal waste which includes waste from households, and some commercial and industrial sources. The balance is made up of 6.4 million tonnes of commercial and industrial waste and 6.1 million tonnes of construction and demolition waste.

10.2 Waste

	Comments	**Complies**
Essential Standards *Minimise, reuse and recycle demolition waste* *Specify use of reused or recycled construction materials* *Recycling facilities should be as easy to access as waste facilities*	The Code Waste category has stringent assessment criteria for domestic and construction waste. The proposed development will incorporate internal waste/recycling bins and communal bin stores, to accommodate the building's waste streams. Refuse and recycling provision both within residential units and communal waste and recycling storage areas has been designed to be compliant with the Code requirements. During construction, a Site Waste Management Plan (SWMP) will be produced to ensure compliance with legislation, and will address any additional areas required by Code issue Was 2. The SWMP will be prepared by the appointed contractor for the works to develop a system of disposal of the waste generated by the redevelopment works, to determine suitable construction methodologies and employ suitable materials to minimise the quantity of waste product on site. A target of diverting 50% of waste generated from landfill has been set by the design team. The waste arising from construction will be managed in line with the waste hierarchy. A pre-construction audit will be completed to	Yes

	maximise the recovery of material. Wherever possible the waste will be used on site partly as recycled aggregates, which means that an Essential Standard will be met. This will also be rewarded under the Code Waste category. The main contractor will be required to segregate materials prior to transportation to recycling centres. The main contractor will be contractually required to produce a strategy demonstrating segregation of the following waste categories: • Concrete • Timber • Glass • Plasterboard • General waste Special waste such as oils or paint will be managed separately using appropriate Control of Substances Hazardous to Health (COSHH) bins. In line with the Code, targets will been set to divert a significant amount of non-hazardous construction waste generated by the project from landfill, which also results in a significant reduction of the amount of non-hazardous construction waste ($m^3/100m^2$ or tonnes per $100m^2$) and thus meets best practice levels. This commitment is rewarded by the Code.	
Preferred Standards *Use prefabricated and standardised modulation components to minimise waste. If this is not feasible use low waste fabrication techniques.* *Provide facilities to recycle 70% of commercial and industrial waste by 2020.*	Where possible, low waste fabrication techniques will be used. Renewable energy from a waste recovery facility such as pyrolysis is not a suitable technology for this development due to space constraints, and associated air quality issues; therefore this Preferred Standard will not be met.	No

Incorporation of or access to new waste recovery facilities (anaerobic digestion, pyrolysis/gasification) especially to provide a renewable source of energy eg methane or hydrogen		

11.0 SUSTAINABLE CONSTRUCTION

11.1 Introduction

11.1.1 Many aspects of the construction process can have a significant adverse impact on the quality of the site and its surroundings. Sustainable construction makes economic sense as it involves the prudent use of existing and new resources and the efficient management of the construction process. This section discusses the measures necessary to achieve the objectives of the sustainability principles set out in London Plan policy.

11.2 Construction Stage

	Comments	**Complies**
Essential Standards *Reduce waste during construction and demolition phases and sort waste stream on site where practical* *Reduce the risk of statutory nuisance to neighbouring properties as much as possible through site management* *All developers should consider and comply with the Mayor and ALG's London Best Practice Guide on the control of dust and emissions from demolition and construction* *All developers should sign up to the relevant Considerate Constructors Scheme (CCS) or in the City of London to the Considerate Contractor scheme.*	The scheme will be registered with the Considerate Constructors Scheme (CCS) which is a national initiative, set up by the construction industry to improve the image of construction. All of the Mayor's Essential and Preferred Standards will be met though the development's registration with CCS. Additionally, registration and certification with the CCS is rewarded under Code issue Man 2. The contractor will therefore ensure that neighbouring homes and businesses are able to continue their day-to-day activities without significant disruption. They will liaise with neighbouring businesses and the local residents to ensure that noisy works are carried out at appropriate times agreed by all parties. A contact telephone number will be established so that residents can raise any concerns. Construction waste has been discussed in the previous section; Waste. The design team are committed to the sustainable specification and procurement of materials and resources for this development as discussed in the Materials section. The main contractor will be required to	Yes

	provide an environmental materials policy, used for sourcing of construction materials and will have to operate an Environmental Management System.	
Preferred Standards *All contractors should be required by tender requirements to sign up to the Mayor and ALG's London Best Practice Guide on the control of dust and emissions from demolition and construction* *All contractors should be required by tender requirements to sign up to the relevant Considerate Constructors Scheme or in the City of London to the Considerate Contractor scheme*	The CCS is concerned with any area of construction activity that may have a direct or indirect impact on the image of the industry as a whole. The main areas of concern fall into three main categories: the environment, the workforce and the general public. All sites registered with the scheme are monitored by an experienced industry professional to assess their performance against the eight points of the Code of Considerate Practice. Dust management for the development site will be implemented according to BRE guidance, meeting best practice standards. Measures include damping down the site along with dust sheets and covering waste receptacles. Provision will be made to ensure that areas occupied by contractors are kept in a clean and tidy condition. The design team have also made the commitment to monitor, report, and set targets to reduce energy and water consumption from site activities and adopt best practice policies in respect of water pollution on site (ground and surface). These commitments are rewarded under Code issue Man 3.	Yes

12.0 CONCLUSION

12.1 This Sustainable Design and Construction Statement demonstrates that the proposed development has targeted very high standards of design and building quality whilst sensitively and sustainably incorporating a new building into the local community.

12.2 The sustainability strategy focuses on the implementation of sustainable systems for energy, water, waste management, recycling, and the use and choice of materials. Much attention has been given to reducing the environmental impact throughout the whole lifetime of the building, and not just during occupation.

12.3 Following the energy hierarchy has enabled significant carbon reductions to be calculated for the proposed development at Kay Court. The total overall carbon reduction is predicted to be approximately 25.12% with renewables contributing 11.07%. These calculations demonstrate that the development will meet the mandatory Code Ene 1 requirements for Level 3 certification.

12.4 Water consumption will be substantially reduced through the incorporation of low flow fixtures and fittings, including shower flow limiters and tap aerators in all bathrooms and toilets. Environmentally friendly and responsibly sourced materials will be specified where possible.

12.5 The scheme will incorporate best practice design principles with regards to noise pollution and the recommendations of appointed professionals will be adopted.

12.6 The site is located in an area with low risk from flooding. Garden areas, other soft landscaping and the proposed green roof will assist with surface water run off management and drainage from the site. It is considered that there will be no increase in flood risk to person or property as a result of this development.

12.7 Recycling facilities will be provided and the reuse and disposal of construction waste will be guided by a Site Waste Management Plan. In addition, the site will be registered with the Considerate Constructors Scheme which will ensure that the site's impacts on the environment, the workforce and the general public are minimised and the Code of Considerate Practice is implemented to best practice standards as far as possible.

12.8 The Code for Sustainable Homes Pre Assessment attached in Appendix A demonstrates that Code Level 3 can be achieved for the proposed development with a score of 63.52. This score allows for some flexibility within various categories during the design development. It should be noted that this pre assessment has been undertaken early in the design process and is therefore subject to change.

12.9 In conclusion, this report demonstrates that the proposed development has successfully met the majority of the Mayor's Essential and Preferred Standards referred to in the SPG Sustainable Design and Construction. Where a standard has not been met a justification has been provided. The design team has carefully considered the site's potential environmental impacts and this report details how those impacts will be managed and mitigated.

REFERENCES

1. Energy Strategy, prepared by Metropolis Green
2. Design and Access Statement, prepared by 21st Architecture Limited
3. Transport Statement, prepared by WSP
4. Tree/Vegetation Removals and Protection Plan, prepared by Land Use Consultants
5. Landscape Proposals, prepared by Land Use Consultants
6. Environmental Noise Survey and PPG24 Assessment Report, prepared by Hann Tucker Associates

APPENDIX A – CODE FOR SUSTAINABLE HOMES PRE ASSESSMENT SUMMARY

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Results

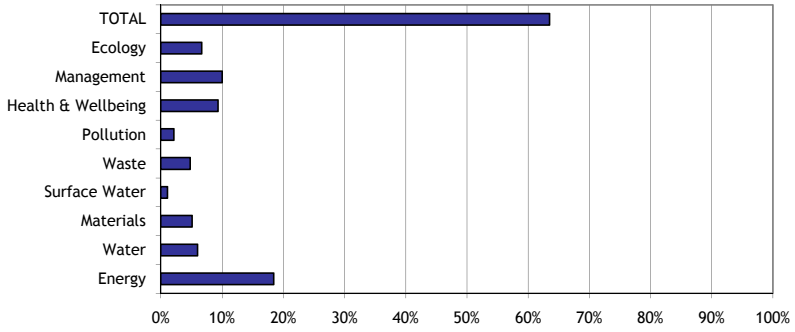
Development Name:	Kay Court
Dwelling Description:	New 4 storey building with 6 affordable units and 18 private units
Name of Company:	Jewish Care
Code Assessor's Name:	Miranda Pennington
Company Address:	Metropolis Green 30 Underwood Street N1 7JQ
Notes/Comments:	Pre Assessment Estimator for Sustainable Design and Construction Statement

PREDICTED RATING - CODE LEVEL: 3

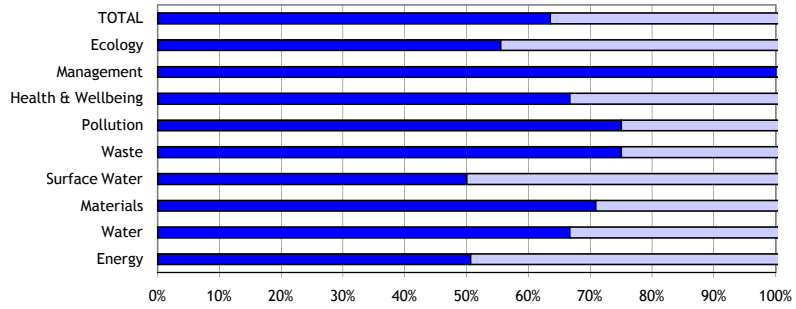
Mandatory Requirements: **All Levels**

% Points:	**63.52%**	**- Code Level: 3**
Breakdown:	**Energy**	**- Code Level: 4**
	Water	**- Code Level: 4**

Graph 1: Predicted contribution of individual sections to the total score and percentage of total achievable score



Graph 2: Predicted percentage of credits achievable: Total and by Category



NOTE: The rating obtained by using this Pre Assessment Estimator is for guidance only. Predicted ratings may differ from those obtained through a formal assessment, which must be carried out by a licensed Code assessor.

CATEGORY 1 ENERGY	Overall Level: 3	Overall Score	63.52
% of Section Credits Predicted: 50.64		Credits	Level
Contribution to Overall % Score: 18.43 points		15.7 of 31 Credits	Level 4
Ene 1 Dwelling Emission Rate	Credits are awarded based on the percentage improvement of the Dwelling Emission Rate (DER) over the Target Emission Rate (TER) as calculated using SAP 2009. Minimum standards for each Code level apply. The Code energy calculator can be used to calculate a predicted score. Enter the predicted score What is the predicted number of credits? 4.7 OR Are zero net CO_2 emissions achieved? ☐	4.7 of 10 Credits	Level 4
Ene 2 Fabric Energy Efficiency	Credits are awarded based on the Fabric Energy Efficiency (kWh/m^2/yr) of the dwelling. Minimum standards apply at Code levels 5 and 6. The Code energy calculator can be used to calculate a predicted score. Enter the predicted score Apartments, Mid-terrace ◉ OR End terrace, Semi and Detached ○ OR Staggered Mid terrace ○ What is the predicted number of credits? 0.0	0.0 of 9 Credits	-
Ene 3 Energy Display Devices	Credits are awarded where a correctly specified Energy Display Device is installed monitoring electricity and/or primary heating fuel consumption. Select whether the EDD monitors electricity and/or fuel None Specified ○ Primary Heating only ○ OR Electricity only ○ OR Electricity and primary heating fuel ◉	2 of 2 Credits	-

Issue		Credits	Level
Ene 4 Drying Space	One credit is awarded for the provision of either internal or external secure drying space with posts and footings or fixings capable of holding 4m+ of drying line for 1-2 bed dwellings and 6m+ for dwellings with 3 bedrooms or greater. Will drying space meeting the criteria be provided? Yes ◉ OR No ○	**1 of 1 Credits**	-
Ene 5 Energy Labelled White Goods	Credits are awarded where each dwelling is provided with either information about the EU Energy Labelling Scheme, White Goods with ratings ranging from A+ to B or a combination of the previous according to the technical guide. Select the appropriate option below EU Energy labelling information only ☑ A+ rated appliances ☐ A+, A and B rated appliances ☐ Combination of compliant rated white goods with EU Energy Labelling Scheme ☐	**1 of 2 Credits**	-
Ene 6 External Lighting	Credits are awarded based on the provision of space lighting* with dedicated energy efficient fittings and security lighting fittings with appropriate control gear.. Space Lighting None provided ○ OR Non Code compliant lighting ○ OR Code compliant lighting ◉ Security Lighting None provided ○ OR Non Code compliant lighting ○ OR Code compliant lighting and controls ◉ Dual lamp luminaires Compliant with both above criteria ☑ * Statutory safety lighting is not covered by this requirement	**2 of 2 Credits**	-

Issue		Credits	Level
Ene 7 Low or Zero Carbon Technologies	Credits are awarded where there is a 10% or 15% reduction in CO_2 emissions resulting from the use of low or zero carbon technologies. Select % contribution made by low or zero carbon technologies Less than 10% of demand ○ OR 10% of demand or greater ○ OR 15% of demand or greater ◉	**2 of 2 Credits**	-
Ene 8 Cycle Storage	Credits are awarded where adequate, safe, secure and weather proof cycle storage is provided according to the Code requirements. Fill in the development details below Number of bedrooms: 3 Number of cycles stored per dwelling* 2.0 * if you have storage for 1 cycle per two dwellings insert 0.5 in number of cycles stored per dwelling	**2 of 2 Credits**	-
Ene 9 Home Office	A credit is awarded for the provision of a home office. The location, space and services provided must meet the Code requirements. Will there be provision for a Home Office? Yes ◉ OR No ○	**1 of 1 Credits**	-

CATEGORY 2 WATER	Overall Level: 3	Overall Score	63.52
% of Section Credits Predicted: 66.66		Credits	Level
Contribution to Overall Score: 6.00 points		4 of 6 Credits	Level 4
Wat 1 Indoor Water Use	Credits are awarded based on the predicted average household water consumption, calculated using the Code Water Calculator Tool. Minimum standards for each code level apply. Select the predicted water use / Mandatory Requirement greater than 120 litres/ person/ day ○ OR ≤ less than 120 litres/ person/ day ○ OR ≤ less than 110 litres/ person/ day ○ OR ≤ less than 105 litres/ person/ day ◉ OR ≤ less than 90 litres/ person/ day ○ OR ≤ less than 80 litres/ person/ day ○	3 of 5 Credits	Level 3 AND Level 4
Wat 2 External Water Use	A credit is awarded where a compliant system is specified for collecting rainwater for external irrigation purposes. Where no outdoor space is provided the credit can be achieved by default. Select the scenario that applies No internal or communal outdoor space ○ OR Outdoor space with collection system ◉ OR Outdoor space without collection system ○	1 of 1 Credits	-

CATEGORY 3 MATERIALS	Overall Level: 3	Overall Score	63.52
% of Section Credits Predicted: 70.83		Credits	Level
Contribution to Overall Score: 5.10 points		17 of 24 Credits	All Levels
Mat 1 Environm-ental Impact of Materials	Mandatory Requirement: At least three of the five key building elements must achieve a Green Guide 2008 Rating of A+ to D. Tradable Credits: Points are awarded on a scale based on the Green Guide Rating of the specifications. The Code Materials Calculator can be used to predict a potential score. Mandatory Requirement Will the mandatory requirement be met? ☑ Enter the predicted score What is the predicted number of credits? 12	12 of 15 Credits	All Levels
Mat 2 Responsible Sourcing of Materials - Basic Building Elements	Credits are awarded where materials used in the basic building elements are responsibly sourced. The Code Materials Calculator can be used to predict a potential score. Enter the predicted Score What is the predicted number of credits? 4	4 of 6 Credits	-
Mat 3 Responsible Sourcing of Materials - Finishing Elements	Credits are awarded where materials used in the finishing elements are responsibly sourced. The Code Materials Calculator can be used to predict a potential score. Enter the predicted Score What is the predicted number of credits? 1	1 of 3 Credits	-

CATEGORY 4 SURFACE WATER RUN-OFF	Overall Level: 3	Overall Score	63.52
% of Section Credits Predicted: 50.00%		Credits	Level
Contribution to Overall Score: 1.10 points		2 of 4 Credits	All Levels

Sur 1 Management of Surface Water Run-off from developments

Mandatory Requirement: Peak rate of run-off into watercourses is no greater for the developed site than it was for the pre-development site and that the additional predicted volume of rainwater discharge caused by the new development is entirely reduced as far as possible in accordance with the assessment criteria. Desiging the drainage system to be able to cope with local drainage system failure. Tradable Credits: Where SUDS are used to improve water quality of the rainwater discharged or for protecting the quality of the receiving waters.

Mandatory Requirement

Will the mandatory requirement be met? ☑

Select the appropriate option

- No SUDS ☐
- No runoff into watercourses for the first 5 mm of rainfall ☐
- Runoff from hard surfaces will receive an appropriate level of treatment ☐

0 of 2 Credits | **All Levels**

Sur 2 Flood Risk

Credits are awarded where developments are located in areas of low flood risk or where in areas of medium or high flood risk appropriate measures are taken to prevent damage to the property and its contents in accordance with the Code criteria in the technical guide.

Select the annual probability of flooding (from PPS25*)

- Zone 1 - Low ◉
- OR Zone 2 - Medium ○
- OR Zone 3 - High ○

Select the apropriate option(s)

- Low risk of flooding from FRA** ☑
- All measures of protection are demonstrated in FRA ☐
- Ground floor level and access routes are 600 mm above design flood level ☐

2 of 2 Credits | -

* Planning Policy Statement 25 - Planning and Flood Risk

** FRA - Flood Risk Assessment

CATEGORY 5 WASTE	Overall Level: 3	Overall Score	63.52
% of Section Credits Predicted:	75.00%	Credits	Level
Contribution to Overall Score:	4.80 points	6 of 8 Credits	All Levels

Was 1 Storage of non-recyclable waste and recyclable household waste

Mandatory Requirement: The space provided for waste storage should be sized to hold the larger of either all external containers provided by the Local Authority or the min capacity calculated from BS 5906. Tradable Credits are awarded for adequate internal and/ or external recycling facilities.

Mandatory Requirement

Will the minimum space be provided and be accessible to disabled people? ☑

Internal Recyclable household waste storage

Where there is no external recyclable waste storage and no Local Authority collection scheme

Internal storage (capacity 60 litres) ☐

0 of 2 Credits

Local Authority collection Scheme

Post Collection sorting

Internal storage (capacity 30 litres) ☑

Pre-collection sorting

Internal storage (3 separate bins, capacity 30 litres) ☐

4 of 4 Credits — **All Levels**

External Storage, no Local Authority collection scheme

3 separate internal storage bins (capacity 30 litres) ☐

AND

Houses

External Storage(capacity 180 litres) ☐

Flats

Private recycling operator ☐

3 or greater types of waste collected ☐

0 of 4 Credits

Issue		Credits	Level
Was 2 Construction Site Waste Management	A credit is awarded where a compliant SWMP is provided with targets and procedures to minimise construction waste. Credits are available where the SWMP include procedures and commitments for diverting either 50% or 85% of waste generated from landfill. SWMP details Does the SWMP include: + No SWMP ○ + SWMP with targets and procedures to minimise waste? ○ + SWMP with procedures to divert 50% of waste ◉ + SWMP with procedures to divert 85% of waste ○	**2 of 3 Credits**	
Was 3 Composting	A credit is awarded where individual home composting facilities are provided, or where a community/ communal composting service, either run by the Local Authority or overseen by a management plan is in operation. Select the facilities available No composting facilities ◉ Individual composting facilities ○ OR Communal/ community composting*? ○ Local Authority ☐ OR Private with management plan ☐ * including if an automated waste collection system is in place	**0 of 1 Credit**	-

CATEGORY 6 POLLUTION	Overall Level: 3	Overall Score	63.52
% of Section Credits Predicted: 75.00%		Credits	Level
Contribution to Overall Score: 2.10 points		3 of 4 Credits	All Levels

Pol 1 Global Warming Potential (GWP) of Insulants	A credit is awarded where <u>all</u> insulating materials only use substances (in manufacture AND installation) that have a GWP of less than 5. Select the most appropriate option All insulants have a GWP less than 5 (●) OR Some insulants have a GWP of less than 5 (○) OR No insulants have a GWP of less than 5 (○)	1 of 1 Credits	-
Pol 2 NOx Emissions	Credits are awarded on the basis of NOx emissions arising from the operation of the space and water heating system within the dwelling. Select the most appropriate option Greater than 100 mg/kWh (○) OR Less than 100 mg/kWh (○) OR Less than 70 mg/kWh (●) OR Less than 40 mg/kWh (○) OR Class 4 boiler (○) OR Class 5 boiler (○) OR All space and hot water energy requirements are met by systems who do not produce NOx emissions (○)	2 of 3 Credits	-

CATEGORY 7 HEALTH & WELLBEING	Overall Level: 3	Overall Score	63.52
% of Section Credits Predicted: 66.00%		Credits	Level
Contribution to Overall Score: 9.33 points		8 of 12 Credits	No level

Hea 1 Daylighting	Credits are awarded for ensuring key rooms in the dwelling have high daylight factors (DF) and a view of the sky. Select the compliant areas Room Kitchen: Avg DF of at least 2% ☐ Living Room*: Avg DF of at least 1.5% ☐ Dining Room*: Avg DF of at least 1.5% ☐ Study*: Avg DF of at least 1.5% ☑ 80% of working plane in all above rooms receive direct light from the sky? ☐ Any room used for Ene 9 Home Office must also achieve a min DF of 1.5%.	0 of 3 Credits	-
Hea 2 Sound Insulation	Credits are awarded where performance standards exceed those required in Building Regulations Part E. This can be demonstrated by carrying out pre-completion testing or through the use of Robust Details Limited. Select a type of property Detached Property ○ Attached Properties: - Separating walls and floors only exist between non habitable spaces ○ - Separating walls and floors exist between habitable spaces ◉ Select a performance standard Performance standard not sought ○ Airborne: 3db higher; Impact: 3dB lower ○ OR Airborne: 5db higher; Impact: 5dB lower ◉ OR Airborne: 8db higher; Impact: 8dB lower ○	3 of 4 Credits	-

Issue		Credits	Level
Hea 3 Private Space	A credit is awarded for the provision of an outdoor space that is at least partially private. The space must allow easy access to all occupants. Will a private/ semi-private space be provided? Yes, private/semi-private space will be provided ◉ OR No private/semi-private space ○	1 of 1 Credits	-
Hea 4 Lifetime Homes	Mandatory Requirement: Lifetime Homes is mandatory when a dwelling is to achieve Code Level 6. Tradable credits: Credits are awarded where the developer has implemented all of the principles of the Lifetime Homes scheme. Mandatory Requirement Dwelling to achieve Code Level 6? ☐ Lifetime Homes Compliance All Lifetime Homes criteria will be met ◉ OR Exemption from LTH criteria 2/3 applied ○ Credit not sought ○	4 of 4 Credits	No level

CATEGORY 8 MANAGEMENT	Overall Level: 3	Overall Score	63.52
% of Section Credits Predicted: 100.00%		Credits	Level
Contribution to Overall Score: 10.00 points		9 of 9 Credits	All Levels

Man 1 Home User Guide	Credits are awarded where a simple guide is provided to each dwelling covering information relevant to the 'non-technical' home occupier, in accordance with the Code requirements. Tick the topics covered by the Home User Guide Operational Issues? ☑ Site and Surroundings? ☑ Is available in alternative formats? ☑	3 of 3 Credits	-
Man 2 Considerate Constructors Scheme	Credits are awarded where there is a commitment to comply with best practice site management principles using either the Considerate Constructors Scheme or an alternative locally/ nationally recognised scheme. Select the appropriate scheme and score No scheme used ○ Considerate Constructors OR Best Practice: Score between 24 and 31.5 ○ OR Best Practice+: Score between 32 and 40 ◉ Alternative Scheme* OR Mandatory + 50% optional requirements ○ OR Mandatory + 80% optional requirements ○ * In the first instance, contact a Code Service Provider if you are considering to use an alternative scheme.	2 of 2 Credits	-
Man 3 Construction Site Impacts	Credits are awarded where there is a commitment and strategy to operate site management procedures on site as following: Tick the impacts that will be addressed Monitor, report and set targets, where applicable, for: - CO_2/ energy use from site activities ☑ - CO_2/ energy use from site related transport ☐ - water consumption from site activities ☑ Adopt best practice policies in respect of: - air (dust) pollution from site activities ☑ - water (ground and surface) pollution on site ☑ 80% of site timber is reclaimed, re-used or responsibly sourced ☐	2 of 2 Credits	-

Issue		Credits	Level
Man 4 Security	Credits are awarded for complying with Section 2 - Physical Security from Secured by Design - New Homes. An Architectural Liaison Officer (ALO), or alternative, needs to be appointed early in the design process and their recommendations incorporated. Secured by Design Compliance Credit not sought ○ OR Secured by Design Section 2 Compliance ◉	**2 of 2 Credits**	-

CATEGORY 9 ECOLOGY	Overall Level: 3	Overall Score	63.52
% of Section Credits Predicted: 55.00%		Credits	Level
Contribution to Overall Score: 6.66 points		5 of 9 Credits	All Levels

Eco 1 Ecological Value of Site	One credit is awarded for developing land of inherently low value. Select the appropriate option Credit not sought ○ OR Land has ecological value ◉ OR Land has low/ insignificant ecological value* ○ * Low ecological value is determined either a) by using Checklist Eco 1 across the whole development site; or b) where an suitably qualified ecologist is appointed and can confirm or c) produces an independent ecological report of the site, that the construction zone is of low/ insignificant value; AND the rest of the development site will remain undisturbed by the works.	0 of 1 Credits	-
Eco 2 Ecological Enhancement	A credit is awarded where there is a commitment to enhance the ecological value of the development site. Tick the appropriate boxes Will a *Suitably Qualified Ecologist* be appointed to recommend appropriate ecological features? ☑ AND Will all key recommendations be adopted? ☑ AND 30% of other recommendations be adopted? ☑	1 of 1 Credits	-
Eco 3 Protection of Ecological Features	A credit is awarded where there is a commitment to maintain and adequately protect features of ecological value. Type and protection of existing features Site with features of ecological value? ◉ OR Site of low ecological value (as Eco 1)? ○ AND All* existing features potentially affected by site works are maintained and adequately protected? ☐ *If a suitably qualified ecologist has confirmed that a feature can be removed due to insignificant ecological value or poor health conditions, as long all the rest have been protected, then this box can be ticked.	0 of 1 Credits	-

Issue		Credits	Level
Eco 4 Change of Ecological Value of Site	Credits are awarded where the change in ecological value has been calculated in accordance with the Code requirements and is calculated to be: Change in Ecological Value Major negative change: fewer than -9 ○ Minor negative change: between -9 and -3 ○ OR Neutral: between -3 and +3 ○ Minor enhancement: between +3 and +9 ◉ Major enhancement: greater than 9 ○	**3 of 4 Credits**	-
Eco 5 Building Footprint	Credits are awarded where the ratio of combined floor area of all dwellings on the site to their footprint is: Ratio of Net Internal Floor Area: Net Internal Ground Floor Area Credit Not Sought ○ OR Houses: 2.5:1 OR Flats: 3:1 ◉ OR Houses: 3:1 OR Flats: 4:1 ○ OR Houses & Flats Weighted (2.5:1 & 3:1) ○ OR Houses & Flats Weighted (3:1 & 4:1) ○	**1 of 2 Credits**	