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Sustainability Statement

30 – 32 Gray's Inn Road
London Borough of Camden

On behalf of
Holbud Investments Ltd

16/05/13
Job Ref: 5196

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Planning
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1.0 INTRODUCTION

1.0.1 This Sustainability Statement, which includes a BREEAM Domestic Refurbishment (BREEAM) Pre-Assessment and Code for Sustainable Homes (Code) Pre-Assessment, has been prepared by Metropolis Green to accompany the planning application submitted to the London Borough of Camden by Holbud Investments Ltd for the proposed development at 30 - 32 Gray's Inn Road.

1.0.2 This report addresses the applicable standards and issues contained within the BREEAM and Code environmental assessments.

1.0.3 Policy DP22 requires all new build housing developments achieve a Code Level 3 by 2010 and Code Level 4 by 2013 and to encourage Code Level 6 by 2016.

1.0.4 Additionally, Policy DP22 requires that all developments of at least 5 dwellings or 500sqm achieve an EcoHomes assessment rating of Very Good prior to 2013 and to encourage an Excellent rating from 2013. However, the BREEAM Domestic Refurbishment environmental assessment scheme was launched in June 2012 and has replaced EcoHomes as the method for assessing the environmental performance of domestic refurbishment projects. Therefore, a BREEAM Domestic Refurbishment rating of Very Good will be sought in order to comply with Policy DP22.

1.0.5 This report highlights where a sustainability standard can be met and how the principle will be achieved. This report assumes a basic understanding of the BREEAM and the Code assessment process. For further information please refer to the BREEAM Refurbishment Domestic Buildings Technical Manual and the Code for Sustainable Homes Technical Manual, available from BRE Global Ltd.

1.0.6 The BREEAM Pre-Assessment and Code for Sustainable Homes Pre-Assessment have been prepared by Metropolis Green and can be found in Appendix A and B. These pre assessments demonstrate that a rating of Very Good and Code Level 4 can be achieved for the proposed development with a score of 62.07% under BREEAM for the 13 converted dwellings and 69.37% for the new build apartment under Code.

1.0.7 This report should also be read alongside other supplemental reports prepared by the design team for the planning application, including the Energy Strategy prepared by Abbey Consultants (Southern) Ltd. and the Planning Statement prepared by Holbud Investments Ltd.

2.0 SITE AND PROPOSED DEVELOPMENT

2.1 Site and Surrounding Area

2.1.1 The site is located at 30 – 32 Gray's Inn Road, in a densely urbanised area near the Chancery Lane Underground Station and Gray's Inn Square and Gardens, providing good access to transport nodes, local amenities and open green space, within the London Borough of Camden.

2.2 Proposed Development

2.2.1 The proposed development consists of a change of use application to convert the existing office space to 13 dwellings, retaining the small office/retail space at ground floor and basement level and creating a new build residential unit extension on the 6th floor.

2.2.2 In order to comply with Policy DP22 the 13 converted dwellings will undergo a BREEAM assessment targeting a rating of Very Good, and the new build residential unit extension on the 6th floor will undergo a Code assessment for a rating of Code Level 4. However, due to the small scope and size of the office/retail space it is not appropriate to implement a BREEAM Non Domestic assessment for this space because it will inherently benefit from a reduction in the energy usage, CO_2 and water consumption of the building through the BREEAM Domestic Refurbishment and Code for Sustainable Homes assessments that will be implemented on the site.

2.2.3 The BREEAM 2008 environmental assessment scheme (for refurbishment) has not been applied to the commercial space on the basement and ground floors of the proposed refurbishment because the size of the units is not sufficient for the assessment to be applicable. The proposed improvements to the energy performance of the building and the achievement of a Code Level 4 and BREEAM Domestic Refurbishment rating of Very Good will ensure the sustainable design of the proposed refurbishment.

3.0 POLICY CONTEXT

3.0.1 Sustainable development is the core principle underpinning planning, and planning has a key role to play in the creation of sustainable communities. In order to ensure the implementation of sustainable development and to determine the targets and standards to be met by the proposed development, it is necessary to review the relevant national, regional and local planning policies with respect to sustainability and the site's location. A summary of the planning policy context for the site and proposed development is provided below.

3.1 National Policy

National Planning Policy Framework, March 2012

3.1.1 The National Planning Policy Framework (NPPF) was published in March 2012 and sets out the Government's planning policies for England, and how these policies are expected to be applied. The policies in the document, taken as a whole, constitute the Government's view of what sustainable development in England means in practice for the planning system.

3.1.2 Paragraph 14 of the NPPF states that:

> At the heart of the National Planning Policy Framework is a **presumption in favour of sustainable development**, which should be seen as a golden thread running through both plan-making and decision-taking.
>
> For **decision-taking** this means:
>
> - approving development proposals that accord with the development plan without delay

3.1.3 The NPPF outlines a set of core land-use planning principles that should underpin plan-making and decision-taking, three of which are particularly relevant to this report. Under paragraph 17, these principles are that planning should:

> - support the transition to a low carbon future in a changing climate, taking full account of flood risk and coastal change, and encourage the reuse of existing resources, including conversion of existing buildings, and encourage the use of renewable resources (for example, by the development of renewable energy);
> - contribute to conserving and enhancing the natural environment and reducing pollution. Allocations of land for

development should prefer land of lesser environmental value, where consistent with other policies in this Framework; and

- encourage the effective use of land by reusing land that has been previously developed (brownfield land), provided that it is not of high environmental value.

3.1.4 Design is addressed in section 7 of the NPPF, and paragraph 56 states:

> The Government attaches great importance to the design of the built environment. Good design is a key aspect of sustainable development, is indivisible from good planning, and should contribute positively to making places better for people.

3.1.5 Meeting the challenge of climate change is addressed in section 10 of the NPPF, and paragraph 93 notes that planning plays a key role in helping shape places to secure radical reductions in greenhouse gas emissions, minimising vulnerability and providing resilience to the impacts of climate change, and supporting the delivery of renewable and low carbon energy and associated infrastructure. This is central to the economic, social and environmental dimensions of sustainable development.

3.1.6 Further to the above, paragraphs 95 and 96 state:

> To support the move to a low carbon future, local planning authorities should:
>
> - plan for new development in locations and ways which reduce greenhouse gas emissions;
> - actively support energy efficiency improvements to existing buildings; and
> - when setting any local requirement for a building's sustainability, do so in a way consistent with the Government's zero carbon buildings policy and adopt nationally described standards.
>
> In determining planning applications, local planning authorities should expect new development to:
>
> - comply with adopted Local Plan policies on local requirements for decentralised energy supply unless it can be demonstrated by the applicant, having regard to the type of development involved and its design, that this is not feasible or viable; and
> - take account of landform, layout, building orientation, massing and landscaping to minimise energy consumption.

3.1.7 Conserving and enhancing the natural environment is addressed in section 11 of the NPPF, and excerpts from paragraph 109 state that the planning system should contribute to and enhance the natural and local environment by:

- minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures; and
- preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability.

3.1.8 Paragraph 118 notes that when determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by encouraging opportunities to incorporate biodiversity in and around developments.

3.1.9 Noise is addressed under paragraph 123 which notes that planning policies and decisions should aim to:

- avoid noise from giving rise to significant adverse impacts on health and quality of life as a result of new development; and
- mitigate and reduce to a minimum other adverse impacts on health and quality of life arising from noise from new development, including through the use of conditions.

3.1.10 Additionally, paragraph 125 notes that by encouraging good design, planning policies and decisions should limit the impact of light pollution from artificial light on local amenity.

3.2 Regional Policy

The London Plan: Spatial Development Strategy for Greater London, July 2011

3.2.1 The London Plan was published in July 2011 and is the overall strategic plan for London, setting out an integrated economic, environmental, transport and social framework for the development of London to 2031. The policies relevant to this report are found in Chapter 5 (and to a lesser extent in Chapter 7) of the London Plan.

Policy 5.2: Minimising Carbon Dioxide Emissions

3.2.2 Policy 5.2 addresses carbon dioxide emission reductions and energy assessment requirements. The policy states:

Planning decisions

A. Development proposals should make the fullest contribution to minimising carbon dioxide emissions in accordance with the following energy hierarchy:

   1. Be lean: use less energy
   2. Be clean: supply energy efficiently
   3. Be green: use renewable energy

B. The Mayor will work with boroughs and developers to ensure that major developments meet the following targets for carbon dioxide emissions reduction in buildings. These targets are expressed as minimum improvements over the Target Emission Rate (TER) outlined in the national Building Regulations leading to zero carbon residential buildings from 2016 and zero carbon non-domestic buildings from 2019.

   Residential buildings:

Year	Improvement on 2010 Building Regulations
2010-2013	25 per cent (Code for Sustainable Homes level 4)
2013-2016	40 per cent
2016-2031	Zero carbon

   Non-domestic buildings:

Year	Improvement on 2010 Building Regulations
2010-2013	25 per cent
2013-2016	40 per cent
2016-2019	As per building regulations requirements
2019-2031	Zero carbon

C. Major development proposals should include a detailed energy assessment to demonstrate how the targets for carbon dioxide emissions reduction outlined above are to be met within the framework of the energy hierarchy.

D. As a minimum, energy assessments should include the following details:

   a. calculation of the energy demand and carbon dioxide emissions covered by the Building Regulations and, separately, the energy demand and carbon dioxide emissions from any other part of the development, including plant or equipment, that are not covered by the Building Regulations at each stage of the energy hierarchy

   b. proposals to reduce carbon dioxide emissions through the energy efficient design of the site, buildings and services

   c. proposals to further reduce carbon dioxide emissions through the use of decentralised energy where feasible, such as district heating and cooling and combined heat and

power (CHP)

d. proposals to further reduce carbon dioxide emissions through the use of on-site renewable energy technologies.

E. The carbon dioxide reduction targets should be met on-site. Where it is clearly demonstrated that the specific targets cannot be fully achieved on-site, any shortfall may be provided off-site or through a cash in lieu contribution to the relevant borough to be ring fenced to secure delivery of carbon dioxide savings elsewhere.

Policy 5.3: Sustainable Design and Construction

3.2.3 Policy 5.3 is the main policy within the London Plan which addresses sustainable design and construction and states:

Strategic

A. The highest standards of sustainable design and construction should be achieved in London to improve the environmental performance of new developments and to adapt to the effects of climate change over their lifetime.

Planning decisions

B. 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.

C. 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:

a. minimising carbon dioxide emissions across the site, including the building and services (such as heating and cooling systems)

b. avoiding internal overheating and contributing to the urban heat island effect

c. efficient use of natural resources (including water), including making the most of natural systems both within and around buildings

d. minimising pollution (including noise, air and urban run-off)

e. minimising the generation of waste and maximising reuse or recycling

f. avoiding impacts from natural hazards (including flooding)

g. ensuring developments are comfortable and secure for users, including avoiding the creation of adverse local climatic conditions

h. securing sustainable procurement of materials, using local supplies where feasible, and

i. promoting and protecting biodiversity and green infrastructure.

3.2.4 The Mayor's supplementary planning guidance referred to in part C. of Policy 5.3 above is addressed further in sections 3.2.6 and 3.2.7 of this report below.

3.2.5 The London Plan contains a number of other policies relevant to this report, which are not outlined in full. These policies can be found in the list below, and reference should be made to the London Plan for further information:

- Policy 5.5: Decentralised Energy Networks
- 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 5.15: Water Use and Supplies

Sustainable Design and Construction: The London Plan Supplementary Planning Guidance, May 2006

3.2.6 The Mayor's Supplementary Planning Guidance (SPG) on Sustainable Design and Construction was published in May 2006 to provide additional information to support the implementation of the London Plan. Policy 5.3 of the current London Plan continues to refer to this SPG.

3.2.7 The SPG is based on eight broad sustainable design and construction measures (referred to in previous London Plan policy 4B.6) and contains both Essential Standards and Preferred Standards for development within each section. As encouraged in section 1.6 of the SPG, this Sustainability Statement is structured around the sections of the SPG and notes how the proposed development addresses the Essential and Preferred Standards.

3.3 Local Policy

Camden Core Strategy 2010-2025

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.

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.

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

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.

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.

CS13 – Tackling climate change through promoting higher environmental standards

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

Reducing the effects of and adapting to climate change

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:

   i. ensuring developments use less energy,

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

   iii. generating renewable energy on-site; and

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

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

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

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

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

j) taking measures to reduce its own carbon emissions;

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

l) raising awareness on mitigation and adaptation measures.

Camden Development Policies 2010-2025

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

3.3.5 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

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.

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.

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

> 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)

3.3.6 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.

3.3.7 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.

3.3.8 Section 9 covers sustainability assessment tools, with BREEAM Domestic Refurbishment (formerly EcoHomes) and Code for Sustainable Homes being of particular relevance to this development (see section 3.4 below). The key message of the document is that new build dwellings will have to be designed in line with the Code for Sustainable Homes and the creation of 5 or more dwellings from an existing building will need to be designed in line with EcoHomes.

3.3.9 Developers are strongly encouraged to meet the following standards in accordance with Development Policy DP22 - Promoting sustainable design and construction:

Time period	Minimum rating (EcoHomes/Code)	Minimum standard for categories - % of un-weighted credits – (EcoHomes/Code)
2010-2012	Very Good/Level 3	Energy -60%/50% Water – 60%/50% Materials – 40%/50%
2013-2015	Excellent/Level 4	
2016 +	Excellent/Level 6	

3.4 Environmental Assessment Methods: BREEAM Domestic Refurbishment and Code for Sustainable Homes

3.4.1 The BREEAM Domestic Refurbishment assessment scheme is an environmental performance standard against which domestic refurbishment projects in the UK can be assessed, rated and certified. It is not applicable to new build development, where the Code for Sustainable Homes would apply.

3.4.2 BREEAM Domestic Refurbishment covers seven categories of sustainability (plus an additional eighth category for Innovation) including: Management; Health and Wellbeing; Energy; Water; Materials; Pollution; and Waste.

3.4.3 Credits are awarded in the various categories according to performance. These credits are then added together to produce a single overall score on a scale of Pass, Good, Very Good, Excellent and Outstanding.

3.4.4 Each category consists of a number of issues and each issue addresses a specific building-related environmental impact and has a number of credits assigned to it. BREEAM credits are awarded where a building demonstrates that it meets the best practice performance levels defined for that issue, i.e. it has mitigated an impact or addressed a specific building occupant-related issue.

3.4.5 The number of credits available for an individual assessment issue will vary and generally the higher the number there are for a given issue, the more important that issue is in terms of mitigating its impact. In most cases, where there are multiple credits available, the number awarded is based on a sliding scale or benchmark, where

progressively higher standards of building performance are rewarded with a higher number of credits.

3.4.6 Most BREEAM Domestic Refurbishment issues are tradable, meaning that a design team or developer can choose the issues they wish to comply with, in order to build up their overall performance score. However, there are some minimum standards (also known as mandatory requirements) which need to be met in various issues in order to achieve the aspired BREEAM Domestic Refurbishment rating.

3.4.7 A scheme can be assessed at the Design Stage (DS), leading to an Interim BREEAM certified rating, and/or the Post Refurbishment Stage (PRS), leading to a Final BREEAM certified rating.

3.4.8 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. 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. 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.

3.4.9 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. The Code assessment is completed in two phases – the design stage and the post construction stage (PCS), leading to a design stage certified rating, and/or post construction certified rating.

3.4.10 The BREEAM Domestic Refurbishment and Code for Sustainable Homes Pre-Assessments are detailed in the following section of this report.

3.5 BREEAM 2008 or 2011 for Non Domestic Refurbishment

3.5.1 The BREEAM 2008 environmental assessment scheme (for refurbishment) has not been applied to the commercial space on the basement and ground floors of the proposed refurbishment because the size of the units is not sufficient for the assessment to be applicable. The proposed improvements to the energy performance of the building and the achievement of a Code Level 4 and BREEAM Domestic Refurbishment rating of Very Good will ensure the sustainable design of the proposed refurbishment.

4.0 BREEAM DOMESTIC REFURBISHMENT AND CODE FOR SUSTAINABLE HOMES PRE-ASSESSMENT SUMMARY

4.0.1 This section of the report describes how credits can be achieved in each of the BREEAM and Code categories. It is important to note that as the project progresses some of these scores may change; however, the design team will ensure that at all times the proposed development will remain above the threshold for a BREEAM rating of Very Good and a Code Level 4 rating.

4.1 Management

4.1.1 The Management category targets both the construction stage and the way dwellings are managed during occupation.

4.1.2 A Home User Guide will be produced which will include information regarding: energy efficiency; water use; sustainable improvement recommendations, local transport facilities; materials; waste; emergency information; and local amenities. This provision has been allocated 3 credits under issue Man 01 – Home Users Guide for both BREEAM and Code.

4.1.3 It is anticipated that the main contractor for the project will achieve beyond the best practice standards of the Considerate Constructors Scheme's Code of Considerate Practice and will obtain a score between 35 and 39. Accordingly, 2 credits have been allocated under issue Man 02 – Responsible Construction Practices for both BREEAM and Code.

4.1.4 Additionally, a commitment has been made to meeting the requirements of issue Man 03 – Construction Site Impacts for both BREEAM and Code. All site timber will be sourced in line with the UK Government's Timber Procurement Policy and Chain of Custody certificates will be obtained. The proposed development is classified as a Large Scale Project under this issue and, as such, 4 or more of the following actions will be undertaken, allowing for the allocation of 1 credit under Man 03 for BREEAM and 2 credits for Code:

a. monitor, report and set targets for CO_2 production of energy use arising from site activities;

b. monitor, report and set targets for water consumption arising from site activities;

c. a main contractor with an environmental materials policy;

d. a main contractor that operates an Environmental Management System; and/or

e. 80% of site timber is reclaimed, re-used or responsibly sourced

4.1.1 It is anticipated that the design layout of the sites' existing accessible doors and windows will preclude compliance with Secured by Design Section 2. As a result, credits have not been allocated under issue Man 04 – Security for both BREEAM and Code at this stage. However, the design team will implement and improve the security features to the greatest extent possible and will review this issue at the detailed design stage once planning approval has been obtained.

4.1.2 The development is located within an area of low ecological value and as such 1 credit is allocated by default for Man 05 – Protection and Enhancement of Ecological Features under BREEAM Domestic Refurbishment.

4.1.3 The project is expected to have a construction value of more than £100,000 and is therefore defined as a Large Scale Project under issue Man 06. Once planning approval is obtained the project manager will assign individual and shared responsibilities at the appropriate stages. Therefore, no credits have been allocated for issue Man 06 – Project Management under BREEAM at this stage, but this will be reviewed once these roles are established at the detailed design stage.

4.1.4 Overall 9 of the available 11 credits have been allocated in this category, which as a result of weighting, contributes 9.82% to the total score for BREEAM Domestic Refurbishment. For the Code assessment the full 9 credits available for this category have been allocated, which as a result of weighting, contributes 10% to the total score.

4.2 Health and Wellbeing

4.2.1 The Health and Wellbeing category covers factors that can contribute to the overall comfort and welfare of the occupants.

4.2.2 It is anticipated that the 13 converted dwellings will result in a neutral impact upon the daylighting levels of the existing dwelling. Additionally, it is anticipated that the new build apartment extension on the 6th floor will achieve a minimum daylight level of 1.5% for the study, dining and living room. Full daylighting calculations will be prepared at the detailed design stage to determine the average daylight factor and view of sky for the relevant rooms in order to allocate credits. Therefore, 1 credit has been allocated for Hea 01 – Daylighting at this stage for both BREEAM and Code.

4.2.3 The separating floors and wall of the 13 converted dwellings will meet Building Regulations Part E standards and the new build apartment on the 6th floor extension will meet Part E standards with a 5dB improvement in airborne sound insulation levels and a 5dB reduction

in impact sound insulation levels. As such 2 credits have been allocated Hea 02 – Sound Insulation for BREEAM and 3 credits have been allocated under Code.

4.2.4 At the detailed design stage, internal finishes and fittings with low emissions of volatile organic compounds (VOCs) will be specified for the 13 converted dwellings; however insufficient detail is available at this stage regarding the particular products to be used and credits have not currently been allocated under issue Hea 03 – Volatile Organic Compounds under BREEAM Domestic Refurbishment. However, this will be revisited at the detailed design stage.

4.2.5 The new build apartment on the 6th floor extension will have access to private space that will only be accessible to residents and will be provided with inclusive access and usability in line with Checklist IDP. Therefore, 1 credit has been allocated for Hea 03 – Private Space under Code.

4.2.6 All dwellings will be built to Lifetime Homes Standard and as such 2 credits have been allocated for under Hea 04 – Inclusive Design for BREEAM and 4 Credits have been allocated for Hea 04 – Lifetime Homes under the Code. Additionally 1 innovation credit can be awarded for exemplary performance under Hea 04 for BREEAM at a later stage.

4.2.7 A minimum level of background ventilation in line with Section 5 of the Building Regulations Part F is specified for all habitable rooms and as such 1 credit has been allocated under Hea 05 – Ventilation for BREEAM Domestic Refurbishment.

4.2.8 The design team will ensure that compliant fire and carbon monoxide (CO) detection and alarm systems are specified in line with the requirements of Hea 06 - Safety and 1 credit has been allocated for this issue under BREEAM Domestic Refurbishment.

4.2.9 Overall 7 of the available 12 credits have been allocated in this category, which as a result of weighting, contributes 9.92% to the total score for BREEAM domestic Refurbishment. For the Code, 9 of the available 12 credits have been allocated in this category, which as a result of weighting, contributes 10.50% to the total score.

4.3 Energy

4.3.1 The reduction of CO_2 emissions is assessed through BREEAM issues Ene 01-04 and Code issues, Ene 01-02 and 07. An Energy Demand Statement has been produced by Abbey Consultants (ref ES-GraysRD-02/R/2.0/MJF) which sets out the proposed energy efficiency, low and zero carbon technologies proposed for this site.

4.3.2 High standards of fabric energy efficiency will be achieved through high quality construction standards, high levels of insulation and air tightness and specification of energy efficient plant and equipment. High efficiency gas boilers will supply space and water heating for the dwellings. High efficiency air source heat pumps (ASHP) will provide space heating and cooling for the office spaces. Photovoltaic (PV) panels will be specified to supply zero carbon energy.

4.3.3 Results of calculations completed for the energy demand statement indicate that the 13 converted dwellings Energy Efficiency Rating (EER) will be improved in line with the BREEAM scheme requirements which will ensure that at least 2 credits can be allocated at this stage under issue Ene 01 – Improvement in Energy Efficiency Rating for BREEAM.

4.3.4 Additionally, for the new build apartment, calculations have determined that an 82% improvement of the Dwelling Emission Rate (DER) over the Target Emission Rate (TER) and at least 7 credits can be allocated under Ene 01 – Dwelling Emission Rate for Code.

4.3.5 Calculations confirm that the 13 converted dwellings can achieve an Energy Efficiency Rating above the minimum standard required for a BREEAM Very Good rating, and 2 credits have been allocated at this stage for issue Ene 02 – Energy Efficiency Rating Post Refurbishment under BREEAM.

4.3.6 SAP calculations will be performed to ensure that the 13 converted dwellings will achieve a low Primary Energy Demand, and 5 credits have been allocated at this stage for issue Ene 03 – Primary Energy Demand under BREEAM.

4.3.7 Solar PV panels have been specified and will supply the new build apartment. SAP calculations indicate that 2 Ene 07 – Low or Zero Carbon Technologies can be allocated under the Code.

4.3.8 At this stage credits have not been allocated for the provision of Solar PV for BREEAM issue Ene 04 – Renewable technologies as the PV will supply the new build apartment only.

4.3.9 Energy efficient white goods will be specified for the dwellings in accordance with the EU Energy Efficiency Labelling Scheme and as such 2 credits have been awarded under Ene 05 – Energy Labelled White Goods under BREEAM and Code.

4.3.10 An adequate and secure drying line for clothes will be provided; therefore 1 credit has been allocated under issue Ene 06 – Drying Space for BREEAM and 1 credit for Ene 04 – Drying Space for Code.

4.3.11 The existing external and internal lighting will be replaced with energy efficient lighting and new energy efficient lighting will be installed within the new build apartment on the 6th floor extension. Therefore, 2 credits have been allocated under Ene 07 – Lighting for Domestic Refurbishment and Ene 06 – External Lighting for Code.

4.3.12 Accessible energy display devices capable of displaying electricity and heating fuel usage will be specified for all dwellings, and as such 2 credits have been allocated under issue Ene 08 – Display Energy Devices for BREEAM and Ene 03 – Energy Display Devices for Code.

4.3.13 Secure cycle storage will be provided for the storage of 1 cycle per dwelling for the 13 converted dwellings and storage of 2 cycles for the new build apartment. Therefore, 1 credit has been allocated for Ene 09 – Cycle Storage under BREEAM and 2 credits have been allocated for Ene 08 – Cycle Storage under Code.

4.3.14 A study containing sufficient space and services for the provision of a compliant home office area will be provided, and one credit has been allocated accordingly for Ene 10 – Home Office under BREEAM and Ene 09 – Home Office under Code.

4.3.15 Overall 18 of the 29 available credits have been allocated in this category, which as a result of weighting, contributes 26.69% to the total score for BREEAM Domestic Refurbishment. For Code, 19 of the 31 credits available have been allocated in this category, which as a result of weighting, contributes 22.30% to the total score.

4.3.16 The BREEAM and Code Pre-Assessments indicate that there is potential for this site to achieve at least 62.06% of the credits in the Energy category under BREEAM and 61.29% in this category for Code. Therefore exceeding the requirements of Policy DP22 to achieve 60% of the available credits in this category under BREEAM and 50% under Code.

4.4 Water

4.4.1 The Water category targets the reduction of water consumption and ensures monitoring of water use in the development.

4.4.2 The design team will target a water consumption of 129 - 139 litres/person/day for the 13 converted dwellings in order to comply with the mandatory requirements for Very Good under BREEAM and a water consumption of less than 105 litres/person/day for the new build apartment in order to comply with the mandatory requirements for Code Level 4 under Code. At the time of the full assessment the design team will ensure that the dwelling achieves the required calculated water consumption and 1 credit has been allocated under issue Wat 01 – Internal Water Use under BREEAM and 3 credits have been allocated under Code.

4.4.3 The development will only contain balconies for the dwellings and no other external space, therefore, the 1 available credit for the issue Wat 02 – External Water Use is awarded by default under BREEAM and Code.

4.4.4 A compliant water meter on the mains supply will be specified and as such, 1 credit has been allocated under issue Wat 03 – Water Meter for BREEAM Domestic Refurbishment.

4.4.5 Overall 3 of the available 5 credits have been allocated in this category, which as a result of weighting, contributes 6.60% to the total score for BREEAM Domestic Refurbishment. For Code 4 of the 6 available have been allocated in this category, which as a result of weighting, contributes 6.00% to the overall score.

4.4.6 The BREEAM and Code Pre-Assessments indicate that there is potential for this site to achieve at least 60.00% of the credits in the Water category under BREEAM and 66.66% in this category for Code. Therefore exceeding the requirements of Policy DP22 to achieve 60% of the available credits in this category under BREEAM and 50% under Code.

4.5 Materials

4.5.1 BREEAM and Code awards credits on the basis of the specification and use of materials with lower environmental impacts (in accordance with the BRE Green Guide to Specification) over their lifecycle and the optimisation of thermal performance of key building elements.

4.5.2 The building elements to be assessed for the development include the roof, external walls, internal walls, upper and ground floors, and windows. Detailed information regarding the new materials to be specified in the building is required in order to complete the BREEAM

Mat 01 calculator tool, Code Mat 01 calculator tool and to determine the final credits that can be awarded. It should be noted that for BREEAM the use of existing materials is rewarded by the Green Guide. At this stage 15 credits have been allocated under BREEAM and 10 credits have been allocated under Code based on the information available to the assessor. This issue will be reviewed at the detailed design stage when more detailed information will be available.

4.5.3 Detailed information regarding the materials to be specified in the building is required in order to assess the responsible sourcing of materials. Based on the information that is available to the assessor 2 credits have been allocated for Mat 02 – Responsible Sourcing of Materials under BREEAM and 3 credits have been allocated for Mat 02 – Responsible Sourcing of Materials: Basic Building Elements under Code. Additionally, 2 credits have been allocated for Mat 03 – Responsible Sourcing of Materials: Finishing Elements for the new build apartment extension under Code. The credits for this issue under BREEAM and Code will be reviewed at the detailed design stage when more detailed information will be available.

4.5.4 The design team will specify insulation with low embodied environmental impact to the extent feasible. Detailed information regarding the insulation to be specified in the building is required in order to complete the BREEAM Mat 03 -Insulation calculator tool and to determine the final credits that can be awarded under issue Mat 03 - Insulation. Therefore, 4 credits have been allocated for this issue at this stage, but there is potential for the allocation of further credits in this area once the insulation products have been specified.

4.5.5 Overall 21 of the available 45 credits have been allocated in this category, which as a result of weighting, contributes 3.73% to the total score under BREEAM Domestic Refurbishment. For Code, 15 of the 24 available have been allocated in this category, which as a result of weighting, contributes 4.50% to the overall score.

4.5.6 The BREEAM and Code Pre-Assessments indicate that there is potential for this site to achieve at least 46.66% of the credits in the Materials category under BREEAM and 62.50% in this category for Code. Therefore exceeding the requirements of Policy DP22 to achieve 40% of the available credits in this category under BREEAM and 50% under Code.

4.6 Waste

4.6.1 The Waste category deals with waste and recycling issues for both the construction stage and the occupation stage of the development

4.6.2 The London Borough of Camden provides a recycling collection scheme compliant with BREEAM and Code requirements. The design team will ensure that adequate and sufficient internal recycling storage facilities are provided within the dwelling. Accordingly, the first credit under issue Was 01 – Household Waste has been allocated for BREEAM and 4 credits have been allocated for Was 1 – Storage of Non-recyclable Waste and Recyclable Household Waste under Code. Additionally, the second credit under the Was 01 issue for BREEAM has also been allocated and 1 credit has been allocated for Was 03 – Composting under Code, as the Local Authority operates a compliant composting facility and internal kitchen composting containers will be provided to the dwelling.

4.6.3 At the construction stage, a compliant Site Waste Management Plan (SWMP) will be prepared in line with the requirements to achieve 3 credits under issue Was 02 – Refurbishment Site Waste Management under BREEAM and 3 credits under issue Was 02 – Construction Site Waste Management for Code.

4.6.4 Overall, all of the available 5 credits have been allocated in this category, which as a result of weighting, contributes 3.00% to the total score for BREEAM Domestic Refurbishment. For Code, all of the available 8 credits have been allocated in this category, which as a result of weighting, contributes 6.40% to the total score.

4.7 Pollution

4.7.1 The Pollution category aims to reduce the amount of nitrogen oxide (NOx) that is released into the atmosphere through the heating plant and to reduce the impact of the development on surface water runoff from the site.

4.7.2 Space heating and hot water for the proposed dwelling will be provided by gas boilers, the boilers specified will have very low levels of NOx emissions and will achieve to achieve full credits for Pol 01 – NOx Emissions under BREEAM and Pol 02 - NOx Emissions under Code. Therefore.

4.7.3 All specified insulation materials for the new build apartment will have a Global Warming Potential of less than 5; therefore, 1 credit has been allocated for Pol 1 – Global Warming Potential (GWP) of Insulants under Code.

4.7.4 With respect to surface water runoff, the construction of the proposed development will take place within the existing envelope of the building and therefore, will not lead to an increase of impermeable surfaces and will have a neutral impact upon surface water runoff. Therefore, 1 credit has been allocated for Pol 01 – Surface Water Runoff under BREEAM Domestic Refurbishment.

4.7.5 A review of Environment Agency information for the site has determined that the development is located in a zone defined as having a low annual probability of flooding. A site-specific Flood Risk Assessment (FRA) will be completed at the appropriate stage and 2 credits have been allocated under issue Pol 03 – Flooding for BREEAM Domestic Refurbishment.

4.7.6 Overall 6 of the available 8 credits have been allocated in this category, which as a result of weighting, contributes 4.50% to the total score. For Code, 4 of the available 4 credits have been allocated in this category, which as a result of weighting, contributes 2.80% to the total score.

4.8 Surface Water Run Off (only applicable to Code for Sustainable Homes)

4.8.1 As stated under Pol 01 – Surface Water Run Off and Pol 03 – Flooding for BREEAM Domestic Refurbishment, the development will have a neutral impact upon Surface Water Run Off, the site is located within a low flood zone and a site-specific FRA will be completed at the appropriate stage. Therefore, the mandatory requirements for Sur 01 – Management of Surface Water Runoff from Developments will be met and 2 credits will be allocated for Sur 02 – Flood Risk.

4.8.2 Overall, 2 of the 4 available credits have been allocated in this category, which as a result of weighting, contributes 1.10% to the total score.

4.9 Ecology (only applicable to Code for Sustainable Homes)

4.9.1 As stated under Man 05 – Protection and Enhancement of Ecological Features for BREEAM Domestic Refurbishment, the site is located within an area of low ecological value and the development will have a neutral impact upon the ecological value of the site. Therefore, 1 credit has been allocated for Eco 01 – Ecological Value of site, 1 credit has been allocated by default for Eco 3 – Protection of Ecological Features and 2 credits have been allocated for Eco 04 – Change of Ecological Value of Site.

4.9.2 The development will have a floor area to footprint area ratio of greater than 4:1 and as such 2 credits have been awarded for Eco 5 – Building Footprint.

4.9.3 Overall, 6 of the 9 credits available have been allocated in this category, which as a result of weighting, contributes 8.00% to the total score.

5.0 CONCLUSIONS

5.0.1 This report demonstrates that the proposed development at 30 – 32 Gray's Inn Road in the London Borough of Camden can achieve the required rating of Very Good under the BREEAM and Code Level 4, implementing sustainability measures where appropriate and practical.

5.0.2 The sustainability strategy focuses on the implementation of sustainable systems for energy, water, waste management, pollution, and construction management. Much attention has been given to reducing the environmental impact throughout the lifetime of the building, during construction, refurbishment and occupation of the dwelling. Sustainability measures are proposed which go beyond the works necessary for the development.

5.0.3 Improvements in fabric energy efficiency, services efficiency and renewable technologies will be specified to ensure carbon emissions are minimised and mandatory standards are met for both the Code and BREEAM assessments, Energy Strategy calculations have been completed to set the performance standards for the dwellings and more detailed calculations will be performed at the detailed design stage in order to demonstrate this energy performance improvement.

5.0.4 Water consumption can be substantially reduced through the specification of water efficient fixtures and fittings, including low flow rate showers and taps and dual flush toilets, in order to achieve the minimum requirements under water for BREEAM Very Good and Code Level 4.

5.0.5 New environmentally friendly and responsibly sourced building and insulation materials will be specified to the greatest extent possible.

5.0.6 Waste and 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 and will monitor and report on construction site impacts.

5.0.7 The BREEAM Pre-Assessment and Code for Sustainable Homes Pre-Assessment attached as Appendix A and B demonstrate that a rating of Very Good and Code Level 4 can be achieved for the proposed development with a score of 62.07% under BREEAM for the 13 converted dwellings and 69.37% for the new build apartment under Code. These scores allow for flexibility within the various categories during the development of the detailed design for the proposal. It should be noted that the credits allocated in this pre assessment are subject to change at the detailed design stage and during the construction phase; however, the design team will ensure that the

dwellings are certified with BREEAM Very Good and Code Level 4 ratings as appropriate.

5.0.8 In conclusion, this report demonstrates that the proposed development has carefully considered the site's potential environmental impacts and details how those impacts will be managed and mitigated. It also demonstrates that the office/retail space will inherently benefit from a reduction in the energy usage, CO_2 and water consumption of the building through the BREEAM and Code for Sustainable Homes assessments that will be implemented on the site.

APPENDIX A: BREEAM DOMESTIC REFURBISHMENT PRE-ASSESSMENT

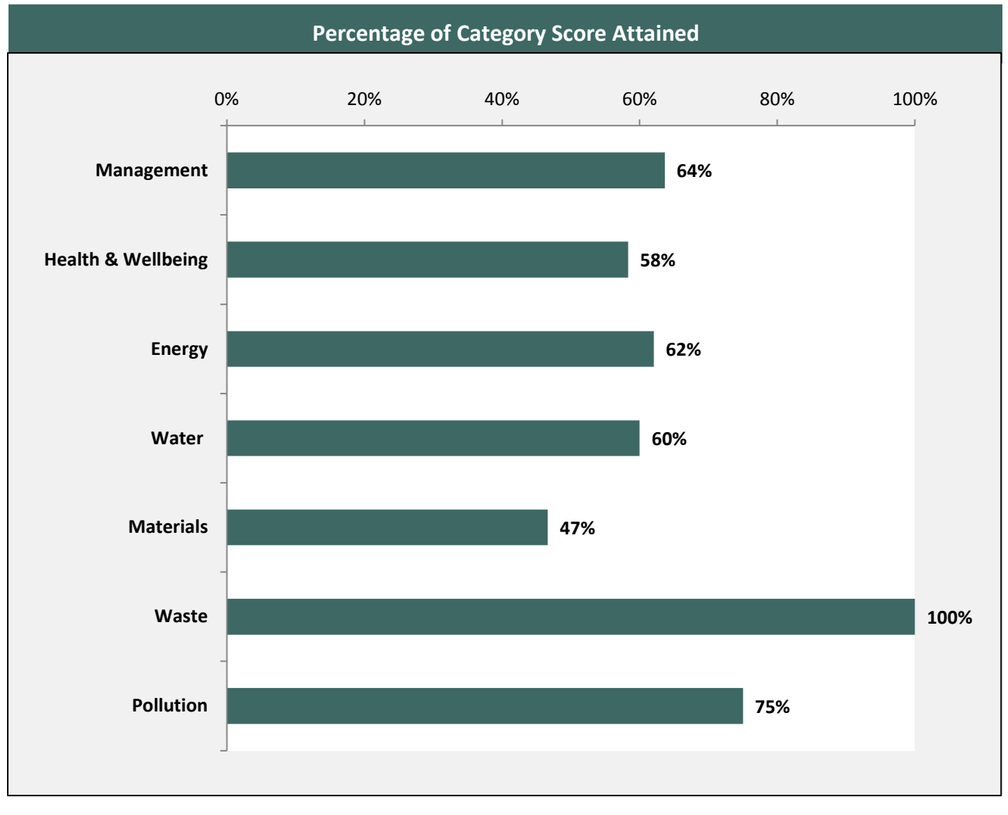
BREEAM Domestic Refurbishment 2012 Pre-Assessment Estimator v0.5: Results Summary

Building name	30 - 32 Gray's Inn Road
Indicative Building Score	62.07%
Indicative Building Rating	BREEAM Very Good

This assessment and indicative BREEAM rating is not a formal certified BREEAM assessment or rating and must not be communicated as such. The score presented is indicative of a dwelling's potential performance and is based on a simplified pre-formal BREEAM assessment and unverified commitments given at an early stage in the design process.

	Issue	Credits Available	Indicative Credits Achieved	Weighting	Section Score
Management	Man 01	3	3	12%	**7.64%**
	Man 02	2	2		
	Man 03	1	1		
	Man 04	2	0		
	Man 05	1	1		
	Man 06	2	0		
Health and Wellbeing	Hea 01	2	1	17%	**9.92%**
	Hea 02	4	2		
	Hea 03	1	0		
	Hea 04	2	2		
	Hea 05	2	1		
	Hea 06	1	1		
Energy	Ene 01	6	2	43%	**26.69%**
	Ene 02	4	2		
	Ene 03	7	5		
	Ene 04	2	0		
	Ene 05	2	2		
	Ene 06	1	1		
	Ene 07	2	2		
	Ene 08	2	2		
	Ene 09	2	1		
	Ene 10	1	1		
Water	Wat 01	3	1	11%	**6.60%**
	Wat 02	1	1		
	Wat 03	1	1		
Materials	Mat 01	25	15	8%	**3.73%**
	Mat 02	12	2		
	Mat 03	8	4		
Waste	Was 01	2	2	3%	**3.00%**
	Was 02	3	3		
Pollution	Pol 01	3	3	6%	**4.50%**
	Pol 02	3	1		
	Pol 02	2	2		
Innovation		10	0	N/A	**0.00%**

	Minimum Standards				
	Pass	Good	Very Good	Excellent	Outstanding
Ene 02	✓	✓	✓	✗	✗
Wat 01	✓	✓	✓	✗	✗
Hea 05	✓	✓	✓	✓	✓
Hea 06	✓	✓	✓	✓	✓
Pol 03	✓	✓	✓	✓	✓
Mat 02	✓	✓	✓	✓	✓



APPENDIX B: CODE FOR SUSTAINABLE HOMES PRE-ASSESSMENT

Results

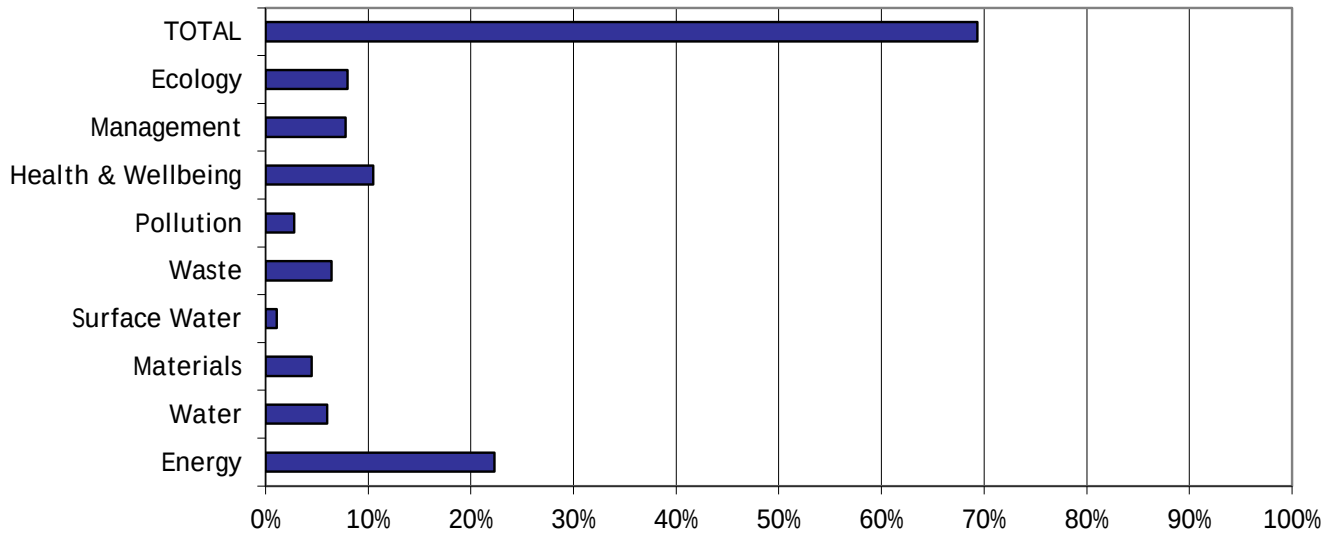
Development Name:	30 - 32 Gray's Inn Road
Dwelling Description:	1 New Penthouse
Name of Company:	Holbud
Code Assessor's Name:	Shaun Kelly
Company Address:	4 Underwood Row London N1 7LQ
Notes/Comments:	Initial Pre Assessment for Planning 07/05/13

PREDICTED RATING - CODE LEVEL: 4

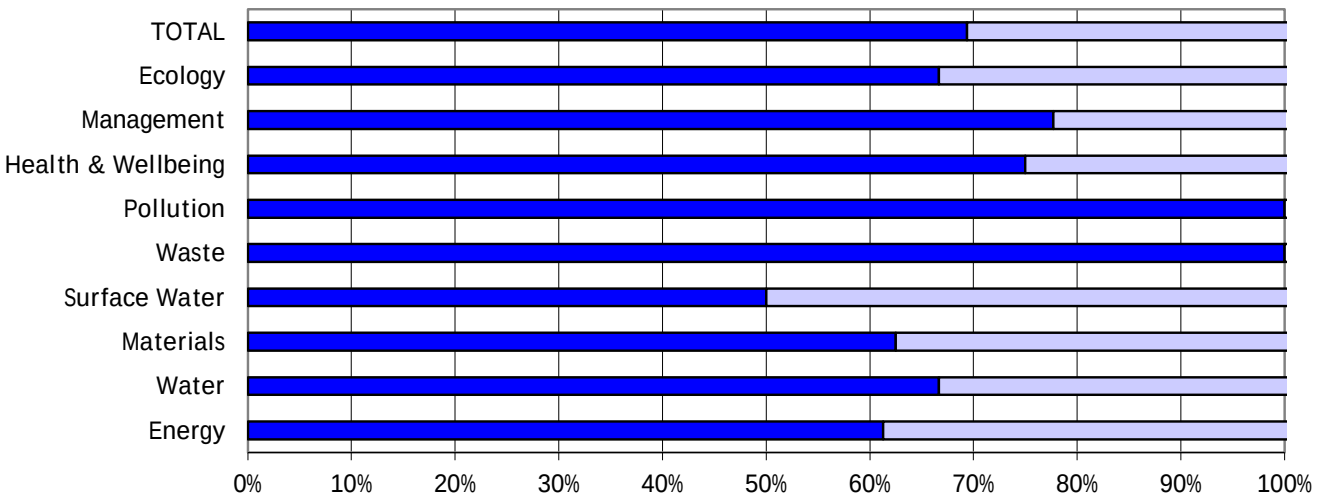
Mandatory Requirements: **All Levels**

% Points:	**69.37%**	**- Code Level: 4**
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: 4	Overall Score	69.37
% of Section Credits Predicted: 61.29		Credits	Level
Contribution to Overall % Score: 22.30 points		19.0 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? 7.0 OR Are zero net CO_2 emissions achieved? ☐	7.0 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 rated washing machine and dishwasher ☑ B rated tumble dryer or washer dryer ☐ EU Energy labelling information provided ☑	**2 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: 4	Overall Score	69.37
% 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: 4	Overall Score	69.37
% of Section Credits Predicted: 62.50		Credits	Level
Contribution to Overall Score: 4.50 points		15 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? 10	10 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? 3	3 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? 2	2 of 3 Credits	-

CATEGORY 4 SURFACE WATER RUN-OFF	Overall Level: 4	Overall Score	69.37
% 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: 4	Overall Score	69.37
% of Section Credits Predicted:	100.00%	Credits	Level
Contribution to Overall Score:	6.40 points	8 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) ☑

4 of 4 Credits — **All Levels**

Pre-collection sorting

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

External Storage, no Local Authority collection scheme

3 separate internal storage bins (capacity 30 litres) ☐

AND

Houses

External Storage(capacity 180 litres) ☐

0 of 4 Credits

Flats

Private recycling operator ☐

3 or greater types of waste collected ☐

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 ◉	**3 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	**1 of 1 Credit**	-

CATEGORY 6 POLLUTION	Overall Level: 4	Overall Score	69.37
% of Section Credits Predicted: 100.00%		Credits	Level
Contribution to Overall Score: 2.80 points		4 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 (○)	3 of 3 Credits	-

CATEGORY 7 HEALTH & WELLBEING	Overall Level: 4	Overall Score	69.37
% of Section Credits Predicted: 75.00%		Credits	Level
Contribution to Overall Score: 10.50 points		9 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%.	**1 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: 4	Overall Score	69.37
% of Section Credits Predicted: 77.00%		Credits	Level
Contribution to Overall Score: 7.77 points		7 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 ○ OR Significantly Beyond Best Practice ◉ 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 ○	**0 of 2 Credits**	-

CATEGORY 9 ECOLOGY	Overall Level: 4	Overall Score	69.37
% of Section Credits Predicted:	66.00%	Credits	Level
Contribution to Overall Score:	8.00 points	6 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.	**1 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? ☐	**0 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.	**1 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 ○	**2 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) ○	**2 of 2 Credits**	