SUSTAINABILITY ASSESSMENT FOR MIXED USE DEVELOPMENT AT 10 – 10a BELMONT STREET

RISETALL LTD
SUBMISSION DOCUMENT

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SUSTAINABILITY ASSESSMENT FOR MIXED USED DEVELOPMENT AT 10 – 10a BELMONT STREET

Sustainability Assessment in support of the Planning Application for student accommodation and light industrial (B1) use at 10 – 10a Belmont Street, Camden.

This report has been undertaken by Michael Sturdy of Richard Hodkinson Consultancy.

Schedule of Issue

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EXECUTIVE SUMMARY

i. This Sustainability Assessment has been carried out by Richard Hodkinson Consultancy, a sustainability, innovation and energy specialist, and analyses the sustainability attributes relating to the redevelopment of the site at 10 – 10a Belmont Street, Camden. The work has been commissioned by Risetall Ltd.

ii. The re-development of this site into high quality student accommodation and office space (B1) creates a real and tangible opportunity for the site, providing employment, vitality and diversification to the area, whilst working within the planning framework.

iii. Throughout the whole design process, the applicant and design team members have given careful consideration to the sustainability issues relating to the site, and how these can be enhanced in a marketable and feasible manner. As a result, the analysis demonstrates that the development meets relevant sustainability criteria, and in a number of areas, exceeds them.

iv. Below is a list of the key sustainability findings of the proposals which ensure a sustainable development is created, and sets a benchmark by which future developments of a similar nature in the area can aspire to.

- **20% CO2 displaced through the use of renewable energy technologies (Policy 4A.7 (Renewable Energy) of the London Plan)**
- **BREEAM 'Very Good' rating achieved, with the targets set within the Camden Planning Guidance (December 2006) reached in respect to the Energy, Water and Materials sections**
- **Modern design enabling students to live in a self-contained high quality environment**
- **Extensive employment opportunities throughout with 23,284 sq ft**
- **Widespread use of living / green roofs enhancing the ecology and providing surface water attenuation in the form of a Sustainable Urban Drainage System**
- **High quality communal outdoor space in the form of a roof terrace and several Japanese Gardens**
- **High standards of environmental construction with compliance to the Considerate Constructors Scheme, a Site Waste Management Plan being drawn up, and sustainable management principles adhered to.**
- **Over 10% of the units to be wheelchair accessible, along with all communal areas within the development**
- **Large provision of cycle storage for both the students office employees to considerably promote to use of sustainable modes of transport**
- **Secure by Design to be achieved**

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1. INTRODUCTION

1.1. This report forms part of the planning application for the scheme and aims to set out the approach to be adopted to enable the creation of a vibrant, sustainable development that will bring vibrancy to the area and assist in creating a quality environment. The report is based upon a comprehensive review of the design proposals and produced in conjunction with Risetall Ltd and their design team.

Proposals

1.2. The proposals for the development include the incorporation of 163 student units which provide a fully integrated living environment within it, including areas for sleep and study as well as a bathroom and fully functional kitchen. Accompanying this accommodation, the following facilities will be provided; a cycle store, laundry and screen room on the lower basement level, together with a roof top terrace for the students to network and socialise.

1.3. Also included in the design is extensive commercial use (B1) covering some 2,164sq.m over 3 floors. This layout gives benefit through flexibility as each floor can be rented to separate tenants or taken as a whole. The offices will be stand alone form the student accommodation, with no facilities being shared. This creates a safer and more beneficial environment to both uses. The office users will profit from bicycles storage and facilities for cyclists to shower and change.

1.4. Several Japanese Gardens are also proposed providing two useful functions to the development; means for natural light and ventilation and convenient outdoor space for the office tenants.

1.5. A plant room on the lower basement floor will house the renewable energy plant; biomass boiler[1], together with its associated fuel store. Thermal stores will also be included in this room in addition.

1.6. The existing properties of 12 and 14[2] Belmont Street are to remain, forming a link with the new proposed development. These units contribute to the character of the area and the new proposals aim to blend these and create an architectural style in keeping with the local area.

Methodology

1.7. The structure of the report is based on the principles of Policy 4A.3 of the London Plan – Sustainable Design & Construction, and addresses a very broad range of sustainability issues relating to the site. The document aims to address the sustainability issues raised within the following relevant planning documents:

- ◊ The London Plan; Spatial Development Strategy for Greater London, February 2008

[1] Please refer to the Energy Statement submitted in support of this Planning Application, carried out by Richard Hodkinson Consultancy,
[2] Nos 12 & 14 Belmont Street is not included in this Application

- ◊ Camden Borough Council Replacement Unitary Development Plan, June 2006
- ◊ Camden Planning Guidance, December 2006
- ◊ Relevant national Planning Policy Statements (and Guidance)

1.8. The Assessment uses the following documents as appendices, following the requirements of the relevant planning documents:

- ◊ Tabulated 'Sustainable Design and Construction – London Plan Supplementary Planning Guidance' included as Appendix 1. This forms a checklist by which the development can be assessed against its 'Essential Standards' and the 'Mayors Preferred Standards'.
- ◊ BREEAM Multi Residential Pre-Assessment illustrating a route by which the Student Accommodation can achieve a Very Good rating. This is required as there are over 5 units, and in excess of 1,000sq.m as defined by the Camden Planning Guidance 2006. This is included in Appendix 2.
- ◊ BREEAM Office Pre-Assessment again illustrating a possible route by which the Office use can achieve a Very Good rating. This has been carried out as the total floor area is in excess of 1,000sq.m. This is included in Appendix 3[3].

Conclusion

1.9. Having undertaken a comprehensive review of the proposals and the relevant planning policies the redevelopment of 10 – 10a Belmont Street, adheres to the principles of sustainable development and sets high aspirational levels of sustainability that will help set standards for future development of this type of accommodation in the local area.

[3] Both Pre-Assessment route includes Camden Council's requirements for developments to achieve 60% of the credits (un-weighted) within the Water and Energy Sections, and 40% in the Materials Section – Para 44.23 (Sustainable Design and Construction) Camden Planning Guidance 2006.

2. RE-USE LAND & BUILDINGS

Brownfield

2.1. 10 – 10a Belmont Street is a ***brownfield site***, currently occupied by a piano factory. There will be a total of 163 units, over 7 floors with 2 basement levels, giving ***an efficient use of the land*** on which it sits, and the development of brownfield sites is in accordance with national planning policy, Planning Policy Statement (PPS) 3; Housing.

Recycled Material

2.2. It is the aim, where possible, to ***recycle and re-use the demolition materials arising on site*** as high grade aggregate in the sub-base of the new structure and hard landscaped areas. Any surplus demolition arising will be recycled for use in other developments in the surrounding area, or taken to a local recycling centre for distribution to other sites at a later date. These measures are to be explained in greater detail throughout the report and should be referred to.

Contamination & Remediation

2.3. Any remediation work needed to clear any contaminates from the site will be undertaken in accordance with appropriate guidance following a contamination survey[4], in line with the requirements of Policy SD10 B of the Camden's UDP, and 4A.33 of the London Plan.

3. CONSERVE ENERGY, MATERIALS, WATER & OTHER NATURAL RESOURCES

3.1. This section offers compliance with Camden Borough Council's Sustainable Development Policy – SD9 – Resource and Energy (A, B and C).

3.2. The efficient use of resources is an extremely important part of any development. Modern day developments of any form should aim to achieve the following points:

- ◊ **Conservation** - the use of resources should be reduced through the re-use, recycling and appropriate materials management streams and energy and water efficient measures
- ◊ **Responsible -** materials to be responsible sourced from sustainable sources
- ◊ **Renewable –** developments should, where possible, supply an element of its energy requirements through renewable sources
- ◊ **Education –** information on how to reduce the use of resources should be provided to ensure good practices principles are adhered to. Data collected in the past shows that this has the greatest effect on conserving the use of resources.

[4] This will be undertaken if this is deemed necessary.

Energy

3.3. The proposed Energy Strategy[5] submitted with this Planning Application provides a means to reduced energy consumption through the use of highly efficient heat sources coupled with high levels of insulation and energy efficient appliances and fittings. The Strategy also addresses how the development can achieve at least ***20% carbon dioxide saving through the use of renewables.*** It is proposed that this is achieved through the use of a biomass boiler, sized to heat the base hot water load.

3.4. The report follows the requirements as set in the London Plan (Policy 4A.4 and Policy 4A.7) to significantly reduce the energy load for the development. Outlined below are some of the principles that have been suggested in the report for the development to show compliance with the London Plan, and ensure energy use will be significantly reduced:

- ◊ Low energy lighting to be included throughout the development, in both internal and external areas. They will also be controlled by energy efficient means to ensure lights are not illuminated in unused areas.
- ◊ Natural ventilation
- ◊ Energy efficient appliances to be used within the units
- ◊ Building envelope improvements through the use of insulation improvements
- ◊ Provisions for naturally drying of clothes

3.5. As required by the Camden Planning Guidance at least 60% of the total number of credits[6] (unweighted) within the Energy Section of the BREEAM Assessment must be achieved. The Pre-Assessment, included in Appendix 2 (Multi-Residential – Student Accommodation) & 3 (Offices), shows that the proposed development ***achieves 78% for both uses and thus achieves this requirement.***

Water

3.6. Internal water consumption will be ***significantly reduced*** through the use of practical and hygienic water saving measures. An evaluation of the device to be used will be undertaken based on technical performance, cost and appeal. In the main, the following will be included throughout[7]:

- ◊ Water efficient taps (spray or pop up taps), showers (less than 9L/min) and low dual flush WCs (6/4L or below)
- ◊ Flow restrictors to manage water pressure
- ◊ Water efficient white goods

[5] This report should be referred to in full as it addresses the issues regarding energy efficiency measures to reduce the overall energy load of the building, together with a full assessment into the use of renewables on site. The report is outlined to address the issues of the London Plan relating to these specific issues.
[6] Credits within any BREEAM assessment have a weighted and an unweighted score. It is the weighted score that is accumulated to form the final score by which determines the rating of the scheme, ie/ 55 credits needed to achieve a Very Good.
[7] This will include the each student unit and the washroom facilities associated with the office use.

- ◊ Water meters will be included to detect leakages to ensure no excess wastage occurs. This requirement is driven through the BREEAM assessment framework.

3.7. It is estimated that the above measures will assist in reducing the internal water consumption to be ***no more than 105L/person/day[8].***

3.8. These measures outlined above illustrate compliance with Policy SD9 of the Camden Replacement UDP and 4A.16 of the London Plan – Water Supplies and Resources. Together with this, the incorporation of these measures has contributed to 71% of the credits being achieved in the BREEAM Pre-Assessment for both the student accommodation, and 66% for the offices, and thus ***satisfying the 60% required by the Camden Planning Guidance.***

Environmental impact of material

3.9. The materials used in the development will be ***carefully sourced by the design team*** to ensure that, where possible, environmentally friendly and low embodied energy materials are used. A+/A rated materials and element construction will be sourced to enable the development to be as environmental friendly as possible. These materials should be specified through the use of the Green Guide to Specification published by BRE[9].

3.10. The measures have also been outlined by the Applicant for the ***re-use and recycling of construction waste*** derived from the demolition of the existing structure in the proposed development.

3.11. ***Preference will be given to the use of local materials and suppliers*** where viable. This will be considered as part of the detailed design and construction process.

3.12. ***Timber used on the site will be sourced from sustainable sources*** where practical. This also includes timber used in the development phases, such as hoarding and site fencing.

3.13. Insulation materials will have a Global Warming Potential (GWP) of less than 5, and a zero Ozone Depleting Potential (ODP) where practical. This will ensure that the manufacture of these ***materials will have limited environmental damage***.

3.14. ***At least 40% of the credits have been secured under the Materials section*** the BREEAM Pre-Assessment, in accordance with the target within the Camden Planning Guidance.

[8] This is the prevailing standard within the Code for Sustainable Homes, which is the environmental assessment method for new build dwellings.
[9] This is now available as an online tool at http://www.thegreenguide.org.uk/

4. MAXIMISE USE OF NATURAL SYSTEMS BOTH WITHIN & AROUND THE BUILDING

4.1. The design approach follows ***best practice design principles*** as set out in national and local planning guidance.

Natural Systems

4.2. The development will ***utilise natural ventilation systems***[10] to ensure the free movement of clean air, which is extremely important in these premises which includes student and office accommodation to ensure work productivity is not hampered[11]. No means for cooling will be included by the developer.

4.3. Together with natural ventilation, high levels of insulation will be included throughout to ensure heat is not absorbed through the fabric of the building resulting in temperatures remaining relatively constant throughout the year, and avoid overheating in the summer months. This will ***significantly reduce the energy demand of the building***.

4.4. The developer has also specified the ***extensive use of living / green roofs*** in the design of the development, covering the entire roof area (excluding the roof terrace area) over some 400sq.m. These roofing systems can address many issues with regards to sustainability, and ***play a considerable role in delivering a sustainable development***. Their inclusion acts as a form of additional insulation to ensure heat loss is minimised through the roof in winter months, but also gives has a cooling effect in summer. Further benefits will be addressed in the relative sections throughout this report. The inclusion of green roofs satisfies Policy 4A.11 of the London Plan which calls for their incorporation on developments where feasible, and Camden Borough Council promotes their use in increasing the biodiversity of a development.

4.5. The above measures also address the issue of overheating – Policy 4A.10 of the London Plan – in addition to the surface area of the development being kept to a minimum where possible.

4.6. ***Sustainable Urban Drainage Systems (SUDS)*** (Policy 4A.14 of the London Plan) are to be included within the proposals in accordance with Policy 4A.11 of the London Plan. This will attenuate a large proportion of the surface water run-off associated with the roof, in the form of a green / living roof.

4.7. ***Renewable technologies*** have been included in the proposals for the development to both provide energy and use energy efficiently respectively. These have been included within the development in

[10] As promoted through the Camden Planning Guidance 2006 document; 44. Sustainable Design & Construction, para 44.13
[11] J.Jukes, A.Jenkins, & J.Laws, "The Impact of Improved Air Quality on Productivity and Health in the Workplace"

accordance with the London Plans' Policy 4A.4 – Energy Assessment, and Policy 4A.7 – Renewable Energy.

Cycle Storage

4.8. In accordance with Policy T3 of the Camden UDP a cycle store is to be provided within the building. It provides space for the ***secure and safe storage for both the students and office employees.*** This includes 86 bicycles for the student accommodation, and 24 spaces for the office users. These amounts satisfy the cycle space allowance within Appendix 6 of the UDP. Facilities are also to be provided for office staff in accordance the BREEAM requirements (TRA3), which include shower and changing facilities for both male and female cyclists.

4.9. This will be coupled with a ***car parking free development*** which will promote the use of sustainable modes of transport. Though the Policy T8 corresponds to housing in particular, this attribute does satisfy the requirements of this policy.

5. MITIGATE & ADAPT TO THE EFFECTS OF CLIMATE CHANGE

5.1. The ability of the proposed development to adapt to climate change is considered in the following list overleaf and is in accordance with Policy 4A.9 of the London Plan, as well as the relevant polices within Camden's UDP. These are the measures that have been incorporated in the design of the proposed development at 10 – 10a Belmont Street and will enable the development to respond to envisaged changes in climate over the next 100 years.

Flood Risk & Drainage

5.2. Environment Agency Flood Map denotes the site and surrounding area to be in a ***low flood risk zone***, meaning the probability of flooding is 0.1% (***1 in 1,000 years***). This means that development of this type, in this location is suitable and no mitigation measures are required outside of the regulatory framework.

5.3. The Applicant has however included ***extensive use of green roofs*** which will significantly reduce the surface water run-off from the development[12] and ***creates of a Sustainable Urban Drainage System.*** Its presence will minimise the strain on the traditional drainage network thus consequently ***reducing the risk of flooding*** in the local area and further afield.

[12] A green roof is estimated to attenuate at least 60% of the rainfall for that area

Site layout & landscape

5.4. The development sites entirely on the footprint of the existing property – piano factory – and thus makes use of the same east-west orientation. The new proposals also provide the same employment provisions as the existing, which currently contains B1 light industrial use.

5.5. The Applicant has made specific regard to ***maximising the use of natural light*** within the development to enhance the quality and liveability of the student and office accommodation. This will be achieved through the use of large windows to the student units, and extensive use of light wells to the office accommodation on the lower levels. The glazing will the windows will provide good insulation from the cold, yet will allow a level of passive solar gain to reduce the energy use and thus carbon emissions.

5.6. Provision of a ***high quality roof terrace*** providing amenity and provides a high quality place for the students to socialise and network.

5.7. Extensive use of green roofs will be incorporated providing a natural landscape for biodiversity.

Building structure, ventilation and cooling

5.8. ***Natural ventilation*** has been heavily promoted throughout the design stage to reduce the need for cooling in the summer months, and promote the free flow of air throughout the accommodation.

5.9. The designed storey heights will allow ***improved air flow and cooling*** throughout the building.

5.10. Materials used in the construction of the development will ***illustrate a low embodied energy[13] and low environmental impact*** where possible, as denoted by the Green Guide[14]. In addition the choice of materials will perform effectively throughout the lifetime of the development.

Energy & Water efficiency

5.11. ***Energy and water usage will be minimised*** through low water consumption of products, materials & building methods. Both these elements have been discussed in greater depth in Section 3 of this report – 'Conserve energy, materials, water and other resources'.

5.12. ***Recycling facilities*** will be incorporated within each student unit which will allow for the recycling up to 3 different recyclables. These bins will be provided in addition to the standard waste bin. The office use will also include recycling facilities, although at this stage the specifics are not known as they will be defined by the operator at the time. A large refuse store will also be provided which will enable the

[13] Measure of total energy used in its construction
[14] www.thegreenguide.org.uk

storage of refuse and recyclables prior to collection by the waste operators. These measures are in line with Policy 4A21 of the London Plan – Waste Strategic Policy & Targets.

6. REDUCE NOISE, POLLUTION, FLOODING & MICROCLIMATE EFFECTS

6.1. Addressing microclimate effects that may be attributed to a development can play a significant part in ensuring it operates as intended, and can promote a healthy and liveable environment. This is particularly prominent in an urban setting.

6.2. The ***heat island effect has been addressed*** in the proposals in one of the most effective means possible through the use of a Green (Living) Roof. This will greatly assist in a no increase in net temperature in the surrounding area.

6.3. Green roofs also play a ***key role in the site water attenuation strategy***, which will greatly reduce the risk of local flooding[15].

6.4. It is not expected, given the height, scale, and shape of the development that any wind tunnelling effect will be associated with it.

6.5. ***Insulation improvements will be made above both the Part L and Part E requirements***. This will ensure that the transfer of noise will be improved considerably over the Building Regulations requirements.

6.6. It is proposed, through the Energy Strategy, that the scheme is to achieve a 20% reduction in CO_2 through the use of a biomass boiler, in accordance with the relevant London Plan Policy. These systems provide heat through the process of burning a fuel (wood, chicken waste, or compressed straw) fed through a fully automated process. Every effort will be made at the detailed design stage to ***significantly reduce the emissions*** that can be associated with such systems[16]/[17]. The measures will include the following:

- ◊ Systems which offer the best efficiency rates will be sourced where ever possible, and be ***from the official Exempt List of appliances***. These have gone through rigorous emissions testing to meet UK Legislation.

[15] The site is not within an area at risk of flooding as denoted by the Environment Agency Flood Map
[16] Biomass boilers have an associated emission rate as with any fuel burning energy producing system. These are higher than Photovoltaic and solar thermal panel systems. However, the emissions are significantly lower than CHP, and can, in some cases, be comparable to gas fired combination boilers.
[17] Burning wood will emit little sulphur dioxide emission and roughly the same nitrogen oxide emission http://www.forestry.gov.uk/pdf/nwebiomassheatingplanners.pdf/$FILE/nwebiomassheatingplanners.pdf

- ◊ The design of the flue can also play a significant part in reducing emissions and particles in accordance with Policy 4A.19 of the London Plan – Improving Air Quality.
  - Filters and sensors
    - There are a range filters available to catch particles and reduce emissions of particulate matter, including cyclones, electrostatic precipitators and high efficiency fabric filters. These will be chosen on the
  - The incorporation of a Lambda oxygen sensor in the flue of many modern systems helps ensure optimum operating parameters.
  - Flue Gas Recirculation
    - This adds a regulated amount of flue gas to the combustion air which improves efficiency. This process can ***reduce NOx emissions*** by up to 20%[18].
- ◊ ***Careful decision on fuel*** also plays a significant part in reducing emissions and particle dispersion, often referred to fly or fuel ash. Any soil in the fuel as a result of poor storage or handling practice can lead to significant increases in the levels of ash. Fuels should also be chosen with a low nitrogen level, with a ***pellet system being the design for at this stage***. These offer ease of handling and loading, together with greater calorific value than other types of fuels, with fewer pollutants.

6.7. ***Fuels will also be locally sourced*** where ever possible to limit transport emissions. This needs to be carefully considered at the contract stage, with a number of factors taken into consideration, such as fuel quality, location of the supplier, commercial practicality and whether or not the source is sustainably managed.

7. ENSURE DEVELOPMENTS ARE COMFORTABLE & SECURE FOR USERS

7.1. The proposed development incorporates a number of key measures to ensure the comfort of the user and accessibility to all areas is enhanced for everyone, with a design which has been influenced by the need for a secure, high quality environment. These measures ensure the development complies with the guidelines within the London Plan, BREEAM Assessment and Camden Borough Council UDP.

Comfortable

7.2. In achieving these guidelines, particular attention has been focused on achieving high standards in respects to the following:

[18] This is also fuel dependant.

- ◊ Daylighting standards
- ◊ All communal areas to be accessible for wheelchair users.
- ◊ Over 10% of the units (45) will be adapted for wheelchair users (in line with Policy H7 of the Camden UDP)
- ◊ Provisions for a high quality data infrastructure to enable the students to work in their rooms
- ◊ Public outdoor space creating high quality amenity value giving a focal point to the students.
- ◊ Secure by Design standard to be sought through careful design. Consultation with the Architectural Liaison Officer has occurred and the advice incorporated into the design.
- ◊ Sound insulation measures to be included to limit the transfer of noise from room to room

7.3. In addition, a ***high quality internal environment*** is to be created within the units with the provision of services ***to enable the students to work effectively***. These services will include:

- ◊ Multiple power outlets
- ◊ Data points for the connection to the internet
- ◊ Telephone line
- ◊ Large windows to enhance the use of natural daylight
- ◊ Effective overhead lighting when required
- ◊ Suitable ventilation through natural means

Inclusive

7.4. It is very important that in a development such as this, office and student accommodation, that an ***inclusive development is created*** to ensure no-one from society's cross section is excluded. The scheme will also comply with the requirements of Approved Document Part M. This will ensure the highest standards of accessibility are achieved throughout the development and within individual buildings. Main entrances are already conveniently located for pedestrians, with levelled access via a stepped ramp. Lifts will be included throughout the development

Secure

7.5. The design of the scheme has been influenced by an Architectural Liaison Officer in order for the ***Secure by Design award to be achieved***. This will ensure the scheme provides a safe environment for the students to enjoy and helps to design-out-crime.

8. CONSERVE & ENHANCE THE NATURAL ENVIRONMENT & BIODIVERSITY

Existing

8.1. The site is currently brown field including light industrial use, and associated hard landscaping to the rear. There is no area of green landscaping within the existing site, and thus baron of any biodiversity supply.

Proposed

8.2. The proposals for the new development incorporates' a ***significant area of communal outdoor space*** for the students to enjoy.

8.3. In addition, there is extensive use of green roofs giving a ***large increase in biodiversity and habitat opportunities*** to the area around the development. It covers the entire roof area of 400sq.m. The measures adopted meet the requirements of Policy N5 of the Camden's UDP, as well as satisfying a number of London Plan policies, as outlined in the report beforehand.

8.4. A smaller lightwell garden is to be provided to the office units, and carefully designed to give a high quality, peaceful environment for the office users. This provides a small area of biodiversity increase, and also amenity value.

8.5. Provisions for both bat and bird boxes, where deemed necessary and appropriate, will be provided, as outlined by the Camden Planning Guidance 2006 – Biodiversity.

8.6. With these measures, it can be concluded that a ***considerable increase in ecological value*** will be achieved on the site as a result of the proposed scheme.

9. PROMOTE SUSTAINABLE WASTE BEHAVIOUR

9.1. Waste reduction, both in construction and occupation, is a key principle of sustainability, as there are a host of benefits not only to the environment, but also the occupier and the developer. Throughout the design process, Risetall Ltd have illustrated their intent to reduce waste going to landfill and have promoted key waste saving measures.

Construction Waste

9.2. The amount of waste materials on site can be reduced by introducing ***regular audits to monitor and control site activities*** more closely, for example reviewing materials ordering and site practices to prevent damage and cross contamination. Surveys have found that detailed attention to the quantity

of materials purchased and the way that these are off-loaded, labelled and stored, then subsequently handled on site, can significantly reduce the amount of materials wasted. Wherever possible, the use of packaging and non-returnable pallets should be avoided, recycled or re-used.

9.3. Construction waste is a key element to be considered in achieving a reduction in all waste – it is estimated that some 40% of all waste in the stream is construction related. It has also been shown on a number of construction sites that as soon as the issue of waste starts to be addressed, significantly improvements follow quickly.

9.4. Measure that will be implemented at Belmont Street include that will ensure compliance with Policy 4A.28 of the London Plan – Construction, excavation and demolition waste:

- ◊ An earthworks strategy to avoid removal of excavated material from site outside of any remediation work for possible contamination, if this is necessary
- ◊ Minimisation of the need to import fill to the site through the use of recycled material from the existing structure and hard landscaping
- ◊ Careful and appropriate materials storage on site
- ◊ Selection of materials and design styles that minimise waste
- ◊ Engagement of the supply chain and site team in waste and packaging issues
- ◊ Site training and information on waste issues
- ◊ Reducing waste at source, re-using or recycling material wherever practical
- ◊ Segregation of waste steams on site
- ◊ Waste monitoring and report performance against local or national benchmarks
- ◊ Site security measures to prevent loss through vandalism or theft

9.5. A number of these measures will be achieved by the site meeting ***best practice management principles under the Considerate Constructors Scheme.***

Re use / recycling of materials on site

9.6. Recycling of materials from the construction waste stream can produce valuable construction materials and relieves the existing pressures on landfill sites. By maximising the value extracted from these materials, and extending their life in this way, the demand for such materials from new sources is reduced and there is likely to be a long-term beneficial impact on conservation of mineral resources such as primary aggregate materials

9.7. A major benefit associated with recycling and reusing aggregate materials on site is a ***reduction in the off-site transportation*** which in turn reduces traffic pollution, fuel emissions, fuel consumption, traffic noise and wear and tear on the highways.

9.8. A ***comprehensive audit of the materials on site has been/will be carried out*** by Risetall Ltd to identify salvageable materials. Particular attention will be given to the recovery and treatment of brick, concrete and asphalt for reuse in the following:

- ◊ Engineered sub-base to the roads
- ◊ Drainage
- ◊ Landscaping
- ◊ Void filling
- ◊ General fill material
- ◊ Capping material

9.9. Where materials can be re-used in the construction of the scheme, they will be stored on site in order to reduce the transportation required and potential disturbances to local residents.

Appropriate Construction methods and management

9.10. Construction operations generate waste materials as a result of general handling losses and surpluses. These wastes can be reduced through appropriate selection of the construction method, good site management practices and spotting opportunities to avoid creating unnecessary waste. ***A Construction Strategy will be developed by Risetall Ltd***, once planning consent has been secured which will explore these issues, some of which are listed below:

- ◊ Proper handling and storage of all materials to avoid damage
- ◊ Efficient purchasing arrangements to minimise over ordering
- ◊ Segregation of construction waste to maximise potential for reuse/recycling
- ◊ Use of suppliers who collect and reuse/recycle packaging materials.

Occupational Waste

9.11. The Applicants are committed to achieving a ***high level of increase in the amount of waste being recycled*** to assist in delivering the government targets for recycling and landfill waste reduction. These measures include the following:

- ◊ Space will be provided for segregated recycling waste bins within the kitchen areas. This will involve the supply of a recycling bin, in addition to a non-recyclable bin, which waste can be segregated into the paper, cans, plastics and glass.
- ◊ Refuse storage is also to be provided where both recyclables and waste can be stored. This will also include a rubbish compactor, which will ensure space requirements are minimised.

9.12. Similarly to energy efficiency, much of the task in reducing waste is associated with educating users as well as providing facilities which make the process practical. Information on the subject should be provided to the students.

10. SUSTAINABLE CONSTRUCTION

10.1. Construction site impacts are to be address in a proactive approach by the applicant to ensure they are minimised to ***significantly reduce the effect on the surrounding area***. The following measures within this section are to be put in place to ensure this is achieved.

10.2. The scheme will be registered under the ***Considerate Constructors Scheme, where best practice principles are to be met.*** This will ensure the construction site is managed in an environmentally and socially considerate and accountable manner. The following fields are included within the scheme, and thus must be addressed:

- ◊ Considerate
- ◊ Environmentally Aware
- ◊ Clean
- ◊ A good neighbour
- ◊ Respectful
- ◊ Safe
- ◊ Responsible
- ◊ Accountable

10.3. During the construction processes, control procedures will be put in place to ***minimise noise and dust pollution whilst emissions will be monitored***, as required through national planning policy, and Policy SD8 of Camden's UDP. Roads will be kept clean. The management systems will generally comprise procedures and working methods that are approved by the development team together with commercial arrangements to ensure compliance.

10.4. As mentioned previously, ***construction waste is also to be monitored, sorted and recycled*** where possible to significantly reduce the amount of waste going into landfill leading to increased transport movements to and from the site[19].

10.5. Specific action will be taken to minimise and control any nuisance from construction traffic to surrounding neighbourhoods.

10.6. Site hoarding, and temporary timber used during construction is to be sourced where possible from sustainable sources.

[19] Where not enough space is available for this to occur on site, the recyclable waste will be taken off site to be used in further development projects in the nearby vicinity.

11. CONCLUSION

11.1. Having reviewed the proposals for the development at 10 – 10a Belmont Street, Camden, it is the opinion of this Sustainability Assessment that the development will incorporate a range of sustainability measures within an innovative design, bringing regeneration and vibrancy to the area, and providing a high quality environment for students and business to thrive.

11.2. The development has reached a number of above best practice principles in terms of sustainability. These are highlighted below:

- ◊ 20% CO_2 reduction from an improved baseline through renewables to meet the London Plan Renewables target
- ◊ Incorporation of a green roof giving a platform for the site to enhance ecology, provide biodiversity, enable a sustainable drainage technique, increase insulation in the roof and reducing a possible link with the site and the heat island effect.
- ◊ Provision of high quality employments space (B1) replacing the loss of the existing piano factory.
- ◊ High levels of natural daylight within the units reducing the need for artificial lighting, increasing energy demand
- ◊ A large provision of cycle storage to promote a sustainable mode of transport and one which promotes exercise.
- ◊ Wheel chair access to all communal areas with over 10% of the units are for wheelchair users.
- ◊ Secure by Design and Considerate Constructors to be achieved.

11.3. Together with these, many more issues have been addressed and a sustainable strategy has been implemented. This has resulted in the scheme satisfying planning policy requirements, and delivers the Councils' 3 Sustainable Development Strategic Policies mentioned within the UDP. Together with that, it achieves a Very Good rating under the BREEAM Pre-Assessment, whilst satisfying the targets within the Camden Planning Guidance document.

APPENDICES

1) Tabulated London Plan SPG Document forming a checklist

2) BREEAM Pre-Assessment to Very Good – Multi-Residential – for the Student Accommodation

3) BREEAM Pre-Assessment to Very Good – Offices – for the commercial units.

Sustainable Design & Construction - The London Plan Supplementary Planning Guidance - Tabulated Checklist for 10 - 10a Belmont Street, Camden, London.

Student and Office Accommodation

■ Please note that the following is based on information provided at the time, and assumed correct at the time
■ The below only aimas to provide a very brief checklist approach to the issues. For greater explanations of the issues, please refer to the Energy Strategy and the Sustainability Statement, both carried out by Richard Hodkinson Consultancy, in support of this application.

The blue font sections include the new standards in the revised London Plan (February 2008). The SPG has yet to be updated.

SPG SECTION	ESSENTIAL STANDARD	MAYOR'S PREFERRED STANDARD	HOW THE SCHEME ACHIEVES THE STANDARD
SECTION 2.1 RE-USE LAND AND BUILDINGS			
LAND 2.1.2	100% of development on previously developed land, unless very special circumstances can be demonstrated		The site is 100% brownfield - replacing an existing factory with high grade student accommodation and office space.
	Development density should be maximised based on local context (Policy 4B.7) design principles (Policy 4B.1) open space provision (Policy 3d.10) and public transport capacity (Policy 3c.10). Residential development will be assessed on the Matrix of Sustainable Residential Density in the London Plan (table 4B.1).		Development consists of 163 units on the site, giving significant density to site and effective use of the land. The principles of Policy 4B.1 are fully and sensitively addressed, and incorporates the principles of sustainable urban design - security, accessibility, enhanced public realm, inclusive design, mitigate climate change effects, maximise sites' potential.
BUILDINGS 2.1.3	Reuse existing building where practicable, where the density of the development and the residential amenity are optimised and where the building conforms or has the potential to meet the standards for energy, materials, biodiversity and water conservation set out in this SPG	Existing roof space reused where practicable to create new outdoo spaces and enhance biodiversity alongside the integration of renewable energy (Section 2.3.2.)	■ Proposals incorporate 3 existing houses - 10, 12 and 14 Belmont Street ■ Very old nineteenth piano factory which will not meet todays energy standards ■ Extensive green/living roof to be incorporated ■ Roof terrace to be included for the students enjoyment
	Encourage major developments to incorporate living roofs and walls where feasible		A green roof will be incorporated into the scheme, and covers approximately 400 sqmThis will be a sedum based, and will enhance the ecology of the site. It also has the ability to include bird and bat boxes.
SECTION 2.2 MAXIMISE USE OF NATURAL SYSTEMS			
LOCATION AND URBAN DESIGN 2.2.2	All development to follow the principles of good design set out in London Plan policy 4B.1		These principles have all been considered in the design process and have been addressed accordingly. They are dealt with in details in the Sustainability Report. Sensitive issues such as security, accessible, mitigating climate change effects, mix of uses and practicality, have all been addressed by the design team.
	Minimise need for and use of mechanical ventilation, heating and cooling systems		Essential heating requirements will be included to ensure the comfort of the residents. Solar gain will be maximised through large glazed areas associated with the windows.
	Avoid internal overheating and excessive heat generation. Developers should demonstrate how development could be made heat resilient in design, construction and operation.		■ Plant room will be insulated to avoid heat transfer ■ Windows will be tinted to provide shading ■ External cladding will also provide shading ■ High levels of insulation included
	Avoid creation of adverse local climatic conditions		■ No wind tunnel effect associated with the development ■ Heat island effect will be reduced through the use a green roof ■ Surface water run-off will be reduced through water attenuation measures and the green roof ■ Noise issues will be addressed
ADAPTING TO CLIMATE CHANGE 2.2.3	Buildings provide for flexibility of uses during their projected operational lives		Principles of Lifetime Homes should be consulted and included in parts to maximise the accessibility and availability of the accommodation to the wider population
	Buildings adapt to and mitigate for the effects of the urban heat island and the expected increases in hot dr summers and wet mild winters		■ Green spaces are to be included to ensure the heat island effect is minimised. ■ Green roofs to be incorporated which will significantly reduce this effect for the development.
	Design in facilities for bicycles and electric cars		■ A large cycle store is to be included within the development, in excess of the local planning context, with approximately 300 student spaces and 48 extra (this may well change before the application stage) ■ No parking in the scheme

SPG SECTION	ESSENTIAL STANDARD	MAYOR'S PREFERRED STANDARD	HOW THE SCHEME ACHIEVES THE STANDARD
	Developments must make the fullest contribution to the mitigation of and adaption to climate change and to minimise emissions of carbon dioxide. The following hierarchy will be used to assess applications: using less energy, in particular by adopting sustainable design and construction measures; supplying energy efficiently, in particular by prioritising decentralised energy generation; and using renewable energy.		This is explained in the Energy Strategy and should be referred to. This will be undertaken, with the incorporation of energy efficient measures and renewables.
SECTION 2.3 CONSERVE ENERGY, MATERIALS AND WATER RESOURCES			
ENERGY 2.3.2	Carry out energy demand assessment		This is included with the Planning Application for the scheme, and addresses how Policy 4A.7 of the London Plan is achieved through renewables and energy efficiency improvements.
	Maximise Energy Efficiency and incorporate decentralised energy systems and use renewable energy where feasible. Minimise energy use, including by passive solar design, natural ventilation and vegetation on buildings		■ Energy efficient measures will be included within the development to significantly reduce the energy load and CO2 emissions associated with the development. The process outlined in the London Plan - Be lean, be clean, be green will be adhered to where possible. ■ BREEAM Multi-residential assessment on the development will be undertaken, and a Pre-Assessment is included with the Sustainability Report for this Planning Application.
	Major commercial and residential developments to demonstrate that consideration has been given to the following ranking method for heating and cooling systems: ■ Passive design ■ Solar water heating; then ■ Combined heat and power (if possible Trigeneration), preferably fuelled by renewables; then ■ Community heating; then ■ Heat pumps; then ■ Gas condensing boilers; and then ■ Gas central heating	All developments to demonstrate that consideration has been given to the following ranking method for heating systems: and should incorporate the highest feasible of the following options: ■ solar water heating; then possible ■ CHP/trigeneration, preferably fuelled by renewables; then ■ community heating. New developments should always be connected to existing community heating networks where feasible	■ The Energy Strategy aims to explain how the development addresses these issues in particular, and forms a strategy by which the 20% CO2 target is achieved through renewable energy. ■ The feasibility of the Essential and Preferred Options have also been taken into full consideration in developing the Energy Strategy, and has assisted in forming the proposed route. ■ The principles of passive design will be consulted and adopted where appropriate for such a development to reduce the energy usage of the development ■ Renewable energy will be incorporated to deliver the London Plan CO2 target.
	Wherever outdoor lighting is proposed it should be energy efficient, minimising light lost to sky	Wherever outdoor lighting or other electrically powered street furniture is proposed, it should be powered by renewables and achieve zero light lost to the sky.	■ External lighting with in the development will incorporate a number of energy efficient measures. This will be assessed under the BREEAM Multi-Residential assessment, and will include PIR sensors and daylight cut-off devices. ■ Light deflectors will be incorporated to street lighting to minimise light loses to the sky ■ PV powered lighting will be incorporated where feasible and viable
		Lighting and heating controls should enable services to operate efficiently under different loadings and allow for localised control	■ Heating will be on an individual basis, with variable thermostats and programmers. ■ Internal lighting will be controllable and low energy.
	Carbon emissions from the total energy needs (heat and power) of the development should be reduced by at least 10% by the on-site generation of renewable energy.	Major developments should be zero carbon emission developments (ZEDs).	■ The figure is now 20% CO2 to be met/saved through renewables. This will be achieved, as explained in the Energy Strategy. ■ The route to an ZED being created at Belmont Street has been examined in the Energy Strategy. It concludes that given the nature of the development and the surrounding infrastructure this will no be viable.
		Major developments should make a contribution to London's hydrogen economy through the adoption of hydrogen and/or fuel cell technologies and infrastructure	Hydrogen fuel cell technologies are exceedingly expensive to date, and have not been considered viable for this scheme.
	Support the Mayor's Energy Strategy and its objectives of improving energy efficiency and increasing the proportion of energy used generated from renewable sources. Carry out an assessment of energy demand and carbon dioxide emissions in line with policy 4A.4		This is to be achieved, and the Energy Strategy with this application should be referred to.
	All development should contribute to improving the integration of land use and transport policy and reducing the need to travel, especially by car.		■ There is no parking associated with the development ■ A large cycle store will be provided for students and employees promoting sustainable modes of transport ■ Transport Assessment to be included with the application

SPG SECTION	ESSENTIAL STANDARD	MAYOR'S PREFERRED STANDARD	HOW THE SCHEME ACHIEVES THE STANDARD
	Achieve a reduction in carbon dioxide emissions of 20% from on site renewable energy generation (which can include sources of decentralised renewable energy) unless it can be demonstrated that such provision is not feasible; and give consideration to the impact of new development on existing renewable energy schemes.		20% CO2 reduction over an improved baseline to be sought through the use of a biomass boiler
	Heating, cooling and power systems to be selected to minimise carbon dioxide emissions. Need for active cooling systems to be reduced as far as possible through passive design. Infrastructure should be designed to allow the use of decentralised energy and for it to be maximised in the future. Developments should evaluate combining CCHP and CHP and examine opportunities to extend beyond the site boundary to adjacent areas. Proposed heating and cooling systems must have been selected in accordance with the following order of preference: connection to existing CCHP/CHP distribution networks; site-wide CCHP/CHP powered by renewable energy; gas-fired CCHP/CHP or hydrogen fuel cells, both accompanied by renewables; communal heating and cooling fuelled by renewable sources of energy; gas fired communal heating and cooling.		■ Cooling measures are not proposed ■ CHP has been considered for the site, but it has not been included. The Energy Strategy supports this in greater detail, and should be referred to.
MATERIALS 2.3.3		No construction nor specification of material with high embodied energy to be used instead of a material of low embodied energy (as defined by the Green Housing Guide Supplement to the Eco-Homes Environmental Rating Method) unless a compelling whole life energy or technical case for its use exists.	Materials will be sourced where possible which will have a low embodied energy, ie/ A-C rated within the Green Guide.
	50% timber products from Forest Stewardship Council (FSC) source and balance from a temperate source	90% structural timber products from FSC source and balance from a temperate source	Only a limited amount of timber is to be used in the development, yet the timber that is will be sustainable sourced where ever possible.
		No peat or natural weathered limestone used in buildings or landscaping	No such raw materials will be used within the development
	Insulation materials containing substances known to contribute to stratospheric ozone depletion or with the potential to contribute to global warming must not be used		■ Insulation improvements made to increase the environmental performance of the units will be have no ODP and have GWP of less than 5.
		Before demolition, appraisal of maximising recycling of materials by use of ICE's Demolition Protocol	Waste streams for recycling and resource efficiency must be exercised during the demolition of the existing structure. DRI (Demolition Recovery Index) and NBRI (New Build Recovery Index) should be used to determine this. Prefabricated structures will have
		50% of construction materials by mass used in the development to be sourced from factory/plant, quarry, wharf, railhead or recycling centre within 35 miles of site wherever feasible	The external fabric/covering, should aim to satisfy this, where possible.
	Minimize use of new aggregates		New aggregates needed will be to a minimum given the nature of the development, and where possible should be used from the demolition of the existing structure.
		10% total value of materials used to be derived from recycled and re-used content in products and materials selected.	Where possible recycled and re-used materials will be used, especially in the sub-surface of the external surfacing and the green roof.
WATER 2.3.4	100% inclusion of water saving devices		All units will have water saving devices in the form of low flow showers, pop up/spray/restricted flow/ taps, and dual flush toilets.
		Use of greywater for non potable uses	Greywater is not included in the proposals as the technology is unproven, with hygiene issues associated with it.
	Residential developments to achieve average water use in new buildings of less than 40m3 per bedspace per year (approx 110L/head/day)	Residential developments to achieve average water use in new dwellings of less than 25m^3 per bedspace per year (approx 70L/head/day)	Internal water use will not be above 105L/head/day with the means mentioned above.
SECTION 2.4 REDUCE THE IMPACTS OF NOISE, POLLUTION, FLOODING AND MICROCLIMATIC EFFECTS			

SPG SECTION	ESSENTIAL STANDARD	MAYOR'S PREFERRED STANDARD	HOW THE SCHEME ACHIEVES THE STANDARD
NOISE 2.4.2	Demonstrate that any adverse impacts noise have been minimised, using measures at source or between source and receptor (including choice and location of plant method, layout, screening and sound absorption) in preference to sound insulation at the receptor, wherever practicable. Reduce noise by: minimising existing and potential adverse impacts of noise on, from, within, or in the vicinity of, development proposals; separate new noise sensitive development from major noise sources wherever practicable; support new technologies and improved practices to reduce noise at source, esp in road, rail and air transport; reduce traffic noise through highway management and transport policies; contain noise from late night entertainment and other 24 hour activities; identify, protect and enhance areas of relative tranquillity.		Sound insulation measures will be undertaken to ensure the comfort of the residents is maintained and noise transmission limited. Testing will be carried to ensure desired standards are met.
		For residential development achieve BS 8233:1999 (Table 5) 'good' standards for external to internal noise and improve on Building Regulations (2003) Part E for internal sound transmission standards by 5dB (See EcoHomes)	This may be aimed for, yet at this stage it is unclear on the level of sound proofing/insulation is to be done.
AIR POLLUTION 2.4.3	All new gas boilers should produce low levels of NOx	All new buildings should use boilers with a NOx 5 rating	Individual gas boilers will not be used, ayet all practical measures to reduce the Nox emissions of the biomass will be adopted.
	Take measures to reduce and mitigate exposure to air pollution		■ Energy efficient measures will reduce emissions ■ No industrial premises associated with the development which may raise air pollution locally ■ All practical measures to reduce the harmful emissions and particulates from the biomass boiler will be included, and these are proposed in both the Energy Strategy and the Sustainability Statement.
	Implement the Mayor's Air Quality Strategy and achieve reductions in pollutant emissions and public exposure to pollution by: improving integration of land use and transport policy reducing the need to travel; promoting sustainable design and construction; reduce emissions from demolition and construction of buildings; ensuring that air quality is taken into account along with other material consideration, at the planning application stage; cleaner transport fuels; integrated approach to air quality management and to achieve emissions reductions through improved energy efficiency and energy use.		■ Sustainable construction methods to be used to reduce transport movements ■ Measures to be used to reduce air pollution in the surrounding area during construction ■ No car parking associated with the scheme ■ Large cycle store to promote cycling
WATER POLLUTION AND FLOODING 2.4.4	Make surface water run off patterns more sustainable by use of Sustainable Urban Drainage (SUDS) measures, wherever practical. Ensure that surface water run off is managed as close to its source as possible in line with the following drainage hierarchy: store rainwater for later use; use infiltration techniques, such as porous surfaces in non-clay areas; attenuate rainwater in ponds or open water features for gradual release to a water course; discharge rainwater direct to a watercourse; discharge rainwater to a surface water drain; discharge rainwater to the combined sewer. Developers should aim to achieve greenfield run off from their site through incorporating rainwater harvesting and sustainable drainage. Boroughs should encourage the retention of soft landscaping in front gardens and other means of reducing, or at least not increasing, the amount of hard standing associated with existing homes.		■ Green Roofs be used but measures to reduce the surface water run-off from the roof ■ Attenuation tank in the garden will be used for storage of surface water run-off and used to irrigate the plants in the garden. Overflow will lead to drains. ■ Green external areas will assist in reducing the surface water runoff for the site
	Within areas at risk from flooding the assessment of flood risk for development proposals should be carried out in line with PPS25.		The site is not in an area of flood risk
	Protect and improve water quality by ensuring that adequate sewerage infrastructure capacity is available.		This will be provided
	Achieve 50% attenuation of the undeveloped site's surface water run off at peak times	Achieve 100% attenuation of the undeveloped site's surface water run off at peak times	■ Green areas, green roof and attenuation tank to assist in the attenuation of water, and subsequent testing to be carried out to assess the exact level of attenuation. ■ It is unlikely that this will be achieved. However, some sources do estimate that 100% of surface water run-off from roofs with green roofs is attenuated. This figure is more like 65% for the year.

SPG SECTION	ESSENTIAL STANDARD	MAYOR'S PREFERRED STANDARD	HOW THE SCHEME ACHIEVES THE STANDARD
MICROCLIMATE 2.4.5	Mitigate any negative impact on the microclimate of existing surrounding public realm and buildings to meet the Lawson criteria for wind comfort and safety		■ Development will mitigate microclimate effects by incorporating green spaces and green roof, and will not add wind speeds by creating a wind tunnel effect ■ Renewable energy to be incorporated to reduce affect on the climate
SECTION 2.5 ENSURE DEVELOPMENTS ARE COMFORTABLE AND SECURE			
INDOOR COMFORT 2.5.2	Inert or low emission finishes, construction materials, carpets and furnishings should be used wherever practical.		Environmentally friendly products to be used wherever possible
		Design buildings for indoor comfort of users	Buildings will have a high degree of sound insulation, natural daylighting, with adequate heating controls
	All plant and machinery should be accessible for easy maintenance and kept regularly maintained.		This has been incorporated into the design of the development
INCLUSIVE ENVIRONMENTS 2.5.3	All developments should meet the principles of inclusive design, adopting the principles of SPG "Accessible London: Achieving an Inclusive Environment".		■ The principles of the SPG will be included in to the development. ■ Wheel chair access will be provided to all communal parts and 10% of the rooms will be for wheelchair access.
	All residential development should meet Lifetime Home standards and 10% should meet wheelchair accessibility standards (London Plan Policy 3A.4)	All residential development should be designed to meet wheelchair accessibility standards, or be easily adaptable to meet wheelchair standards	■ All areas will be wheelchair accessible to ensure the accommodation is available to all, and the principles of Lifetime Homes should be consulted and elements adapted where necessary. ■ 10% of the units to be wheelchair accessible
		Developments should be fully e-enabled.	Wireless internet to be provided
SECURE DESIGN 2.5.4	Developments should incorporate principles of "Secured by design".		Secure by Design to be achieved
SECTION 2.6 CONSERVE AND ENHANCE THE NATURAL ENVIRONMENT AND BIODIVERSITY			
OPEN SPACE 2.6.2	No net loss of publicly accessible open space and enable easy access to open spaces		No net loss of public open space, and a gain from the original development will be achieved
		Net gain of publicly accessible open space	Net gain will be achieved
	Create appropriate new open, green, publicly accessible spaces where these can redress identified areas of deficiency of public open space		Open areas are included in the design for the enjoyment of the students
BIODIVERSITY 2.6.3	Ensure no net loss of biodiversity and access to nature on the development site.	Net gain of biodiversity and access to nature on the development site	Net gain associated with the development, through the provision of gardens and a green roof.
	Reduction in areas of deficiency in access to nature		Green roof will provide an partially inaccessible area for humans to disturb nature, which will significantly promote natural habitats.
SECTION 2.7 PROMOTING SUSTAINABLE WASTE BEHAVIOUR			
WASTE 2.7.2	Minimise, reuse and recycle demolition waste on site where practical		SWMP to be used, along with Considerate Contractors / Constructors, to be used to ensure waste is minimised and recycling maximised
		Use prefabricated and standardised modulation components to minimise waste. If this is not feasible use low waste fabrication techniques.	Prefabricated modules is the very nature of the development which will minimise construction wast significantly
	Specify use of reused or recycled construction materials		Where possible materials will be re-used in the development from the demolition of the existing
	Provide facilities to recycle or compost 35% (by 2010) of household waste by means of separated dedicated storage space. By 2015 this should rise to 45%.		Recycling facilities will be incorporated in the development and specific recycling bins will be provided to the units.

SPG SECTION	ESSENTIAL STANDARD	MAYOR'S PREFERRED STANDARD	HOW THE SCHEME ACHIEVES THE STANDARD
DESIGNING FOR WASTE 2.7.3		Provide facilities to recycle or compost at least 35% of household waste. By 2015 this should rise to 60%.	Recycling facilities will be incorporated in the development and specific recycling bins will be provided to the units.
		Provide facilities to recycle 70% commercial and industrial waste by 2020	The non-residential aspect of the development - café, will also incorporate strict recycling policies t minimise the amount of waste to landfill.
		Incorporation of or access to new waste recovery facilities (anaerobic, digestive, pyrolysis/gasification) especially to provide a renewable source of energy eg. Methane from anaerobic digestion	At this stage in the development it is not possible to include such means.
	Recycling facilities should be as easy to access as waste facilities		This will be the case to promote recycling, and will be included in the units
SECTION 3 SUSTAINABLE CONSTRUCTION			
WASTE AND MATERIALS 3.2	Reduce waste during construction and demolition phases and sort waste streams on site		SWMP to be used, along with Considerate Contractors / Constructors, to be used to ensure waste is minimised and recycling maximised
	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.		Air and water pollution will be carefully monitored and controlled during construction, through dust sheets, damping down during hot and windy weather, as well as complying with the requirements o PPS1, PPG5 & PPG6. The scheme will also be registered under the Considerate Constructors / Contractors will also assist significantly reduce the local pollutants during construction.
		All contractors should be required by tender requirements to sign up to the Mayor and AGL's London Best Practice Guide on the control of dust and emissions from demolition and construction.	This will be carefully considered given the nature of the development and the proximity to neighbouring buildings
	Reduce the risk of statutory nuisance to neighbouring properties as much as possible through site management		Considerate Constructors / Contractors will ensure construction site impacts will be reduced
		All contractors should be required by tender requirements to sign up to the Considerate Constructors / Considerate Contractors scheme	This will be achieved
	All developers should sign up to the relevant Considerate Constructors Scheme , or in the City of London the Considerate Contractors scheme.		This will be achieved.

Appendix 2

BREEAM Multi-Residential Pre-Assessment illustrating a route for the Student Accommodation to achieve a 'Very Good' rating.

Indicative Overall BREEAM Score

60.66%

BREEAM Rating Benchmarks

PASS	≥30
GOOD	≥45
VERY GOOD	≥55
EXCELLENT	≥70
OUTSTANDING*	≥85

BREEAM Multi-residential 2008 Pre-Assessment Estimator

Minimum BREEAM Standards

Pass	Good	Very Good	Excellent	Outstanding
YES	YES	YES	YES	NO

Ref	BREEAM Issue Title	BREEAM Multi-residential Criteria	Number of BREEAM credits available	Total predicted BREEAM credits achieved	Minimum required credits by BREEAM issue and rating					Notes
Management										
Man 1	Commissioning	One credit where evidence provided demonstrates that an appropriate project team member has been appointed to monitor commissioning on behalf of the client to ensure commissioning will be carried out in line with current best practice. Two credits where, in addition to the above, evidence provided demonstrates that seasonal commissioning will be carried out during the first year of occupation, post construction (or post fit out).	2	1	1	1	1	1	2	**A member of the project team will be appointed to monitor commissioning on the behalf of the client. It is anticipated that they will be from the appointed M&E consultants.**
Man 2	Considerate Constructors	One credit where evidence provided demonstrates that there is a commitment to comply with best practice site management principles. Two credits where evidence provided demonstrates that there is a commitment to go beyond best practice site management principles.	2	1	-	-	-	1	2	There is a commitment to achieve best practice principles
Man 3	Construction Site Impacts	One credit where evidence provided demonstrates that 2 or more of items a-g (listed below) are achieved. Two credits where evidence provided demonstrates that 4 or more of items a-g (listed below) are achieved. Three credits where evidence provided demonstrates that 6 or more of items a-g are achieved: a. Monitor, report and set targets for CO2 or energy arising from site activities b. Monitor, report and set targets for CO2 or energy arising from transport to and from site c. Monitor, report and set targets for water consumption arising from site activities d. Implement best practice policies in respect of air (dust) pollution arising from the site e. Implement best practice policies in respect of water (ground and surface) pollution occurring on the site f. Main contractor has an environmental materials policy, used for sourcing of construction materials to be utilised on site g. Main contractor operates an Environmental Management System. One additional credit where evidence provided demonstrates that at least 80% of site timber is responsibly sourced and 100% is legally sourced.	4	3	-	-	-	-	-	**Construction waste will be monitored** **Construction waste will be recycled using specialist recycling company** **Best practices will be adopted for keeping dust levels down** **Best practices will be adopted to ensure water course are not polluted** **80% of the site hoarding will be responsibly sourced**
Man 4	Building user guide	One credit where evidence provided demonstrates the provision of a simple guide that covers information relevant to the tenant/occupants and non-technical building manager on the operation and environmental performance of the building.	1	1	-	-	-	1	1	**A simple guide will be provided to all tenants and building users**
Man 6	Consultation	One credit where, evidence provided demonstrates that consultation has been, or is being, undertaken and feedback given to the local community and building users. In addition, advice should also have been sought from any relevant national and local history, archaeological bodies or military history groups regarding the heritage value of the building/site/surroundings. Two credits where, in addition to the above, evidence provided demonstrates that changes to the design and/or action has been taken as a result of the above consultation process. This should include the protection of any parts of the building (or site) having historic or heritage value in accordance with independent advice from the relevant body.	2	0	-	-	-	-	-	
Man 8	Security	One credit where evidence provided demonstrates that an Architectural Liaison Officer (ALO) or Crime Prevention Design Advisor (CPDA) from the local police force has been consulted at the design stage and their recommendations incorporated into the design of the building and its parking facilities (if relevant).	1	1	-	-	-	-	-	**This will be achieved, and consultation with the ALO has already influenced the design at the planning stage**

Indicative Management (weighted) Section Score **7.00%**

Health & Wellbeing

Completed by:
HODKINSON

Hea 1	Daylighting	One credit where evidence provided demonstrates that at least 80% of floor area in each occupied space is adequately daylit.	1	1	-	-	-	-	-	It is anticipated that adequate daylight provisio will be provided to secure these credits
Hea 2	View Out	One credit where evidence provided demonstrates that all relevant building areas have an adequate view out.	1	1	-	-	-	-	-	The study area has adequate daylighting as do the designated study areas in each self contained flat.
Hea 3	Glare Control	One credit where evidence provided demonstrates that an occupant-controlled shading system (e.g. internal or external blinds) is fitted in relevant building areas.	1	1	-	-	-	-	-	Internal blinds will be specified to reduce glare
Hea 4	High frequency lighting	One credit where evidence provided demonstrates that high frequency ballasts are installed on all fluorescent and compact fluorescent lamps.	1	1	1	1	1	1	1	All fluorescent luminaires are specified to have high frequency ballasts
Hea 5	Internal and external lighting levels	One credit where evidence provided demonstrates that all internal and external lighting, where relevant, is specified in accordance with the appropriate maintained illuminance levels (in lux) recommended by CIBSE.	1	1	-	-	-	-	-	All internal/external light fittings will be to CIBSE recommendations
Hea 7	Potential for natural ventilation	One credit where evidence provided demonstrates that fresh air is capable of being delivered to the occupied spaces of the building via a natural ventilation strategy, and there is sufficient user-control of the supply of fresh air.	1	1	-	-	-	-	-	Development uses natural ventilation throughout with no cooling
Hea 8	Indoor air quality	One credit where air intakes serving occupied areas avoid major sources of external pollution and recirculation of exhaust air.	1	0	-	-	-	-	-	This is very onerous as no windows can be within 20m of an external pollutant (car park or road)
Hea 9	Volatile Organic Compounds	One credit where evidence provided demonstrates that the emissions of VOCs and other substances from key internal finishes and fittings comply with best practice levels.	1	0	-	-	-	-	-	At this stage it is difficult to determine so the worse case scenario has been given.
Hea 10	Thermal comfort	One credit where evidence provided demonstrates that thermal comfort levels in occupied spaces of the building are assessed at the design stage to evaluate appropriate servicing options, ensuring appropriate thermal comfort levels are achieved.	1	1	-	-	-	-	-	This is to be achieved in accordance with CIBSE AM11
Hea 11	Thermal zoning	One credit where evidence provided demonstrates that local occupant control is available for temperature adjustment in each occupied space to reflect differing user demands.	1	1	-	-	-	-	-	TRV'S will be included
Hea 12	Microbial contamination	One credit where evidence provided demonstrates that the risk of waterborne and airborne legionella contamination has been minimised.	1	1	1	1	1	1	1	This is Mandatory and therefore will be achieved0
Hea 15	Outdoor Space	One credit where evidence demonstrates the provision of an adequate outdoor amenity space accessible for use by the building's occupants	1	0	-	-	-	-	-	2/m2 room will not be met
Hea20	Home Office	One credit for the provision of a space and services which allows the occupants to set up a home office in a quiet room	1	1	-	-	-	-	-	All provision will be provided

Hea21	Sound Insulation	One credit where evidence demonstrates that: - airborne sound insulation values are at least 3dB higher - impact sound insulation values are at least 3dB lower OR Three credits where evidence demonstrates that - airborne sound insulation values are at least 5dB higher - impact sound insulation values are at least 5dB lower OR Four credits where evidence demonstrates that - airborne sound insulation values are at least 8dB higher - impact sound insulation values are at least 8dB lower than the performances standards set out in the Building Regulations for England and Wales, AD E (2003 edition, with ammendments on 2004) Default cases four credits for detached dwellings three credits for attached dwellings where separating walls or floors only occur between non-habitable rooms	**4**	**1**	-	-	-	-	-	**This should be aimed for to reduce noise transmission which can be quite prominent in student accommodation**
		Indicative Health & Wellbeing (weighted) Section Score	**9.71%**							
Energy										
Ene 1	Reduction of CO2 Emissions	Up to fifteen credits where evidence provided demonstrates an improvement in the energy efficiency of the building's fabric and services and therefore achieves lower building operational related CO2 emissions.	**15**	**12**	-	-	-	6	10	**This is substaniated through the Energy Strategy, and the use of a biomass boiler**
Ene 2	Sub-metering of Substantial Energy Uses	One credit where evidence provided demonstrates the provision of direct sub metering of energy uses within the building.	**1**	**1**	-	-	1	1	1	**This should be included**
Ene 4	External Lighting	One credit where energy-efficient external lighting is specified and all light fittings are controlled for the presence of daylight.	**1**	**1**	-	-	-	-	-	**Energy efficient controls to be included in communal areas**
Ene 5	Low zero carbon technologies	One credit where evidence provided demonstrates that a feasibility study considering local (on-site and/or near site) low or zero carbon (LZC) technologies has been carried out and the results implemented. Two credits where evidence provided demonstrates that the first credit has been achieved and there is a 10% reduction in the building's CO2 emissions as a result of the installation of a feasible local LZC technology. Three credits where evidence provided demonstrates that the first credit has been achieved and there is a 15% reduction in the building's CO2 emissions as a result of the installation of a feasible local LZC technology. Or alternatively: A maximum of one credit where evidence provided demonstrates that a contract with an energy supplier is in place to provide sufficient electricity use within the assessed building/development to meet the above criteria from a 100% renewable energy source. (Note: a standard Green Tariff will not comply)	**3**	**2**	-	-	-	1	1	**Substaniated through the Energy Strategy submitted through with this Application. It is proposed that this will be achieved through the use of a biomass boiler**
Ene 15	Provision of Energy Efficient Equipment	Up to two credits are available: one credits where evidence provided demonstrates that all domestic scale fridges, freezes and fridge/freezers have an A+ rating under hte EU Energy Efficiency Labelling Scheme one additional credits available where evidence provided that: - domestic washing machines and dishwashers have an A rating AND - domestic washer dryers and tumble dryers have an B rating under the EU Energy Efficiency Labelling Scheme AND commercial scale laundry facilities within the development will maximise opportunities for energy efficient operation alternatively a maximum of one credit available where no (or not all) white goods are provided but ifnormation on the EU Energy Labelling Scheme of Efficient White Goods is provided to residential aspects of the building	**2**	**1**	-	-	-	-	-	**EU Labelling to be provided**

Ene 18	Drying space	one credits where evidence provided demonstrates that: self contained dwellings: space with posts and footings, or fixings capable of holding: - 1-2 bedrooms: 4m+ of drying line - 3+ bedrooms: 6m of drying line AND/OR Space with posts and footings, or fixings capable of holding: - 2m+ of drying line per bedroom	1	0	-	-	-	-	-	**Baths are not proposed in the units, so it is not thought at this stage there will be enough space in the bathrooms.** **A communal laundry is provided.**
		Indicative Energy (weighted) Section Score	**14.04%**							

Transport

Tra 1	Provision of public transport	Up to three credits are awarded on a sliding scale based on the assessed buildings' accessibility to the public transport network.	3	1	-	-	-	-	-	**1 credit is assumed at this stage. There is significant transport networks in the area**
Tra 2	Proximity to amenities	one credits where evidence provided demonstrates that the building is located within 500m of key accessible local amenities appropriate to the building type and its users one additional credits where evidence provided demonstrates that the building is located within 1000m of at least 5 additional accessible local amenities appropriate to the building type and its users	2	2	-	-	-	-	-	**A number of facilities are close proximity.**
Tra 3	Cyclist Facilities	One credit where evidence is provided to demonstrate that there is adequate provision of: a. covered, secure and well lit cycle racks for staff and residents b. secure storage for wheelchairs and electric buggies	1	1	-	-	-	-	-	**Provision are to be included for both.**
Tra 4	Pedestrian and cycle safety	One credit where evidence provided demonstrates that the site layout has been designed in accordance with best practice to ensure safe and adequate pedestrian and cycle access.	1	0	-	-	-	-	-	**It is unlikely that at this stage this credit can be awarded**
Tra 6	Maximum car parking capacity	For **Sheltered Housing and Care Homes** : One credit where evidence provided demonstrates no more than one parking space is provided for every**four** building users Two credits where evidence provided demonstrates no more than one parking space is provided for every**five** building users. For **all other uses**: One credit where evidence provided demonstrates no more than one parking space is provided for every**three** building users Two credits where evidence provided demonstrates no more than one parking space is provided for every**four** building users.	2	2	-	-	-	-	-	**Car free development.**
		Indicative Transport (weighted) Section Score	**5.33%**							

Water

Wat 1	Water Consumption	Up to five credits are available: Four credits where evidence provided demonstrates that the specification includes taps, urinals, WCs and showers that consume less potable water in use than standard specifications for the same type of fittings One additional credit where evidence provided demonstrates that the specification of systems that collect, store and, where necessary treat, rainwater or greywater for WC and urinal flushing purposes.	5	3	-	1	1	1	2	**Low flow WC's, low flow showers (less than 9L/min), spray/pop up taps to be specified** **Greywater systems are not specified**
Wat 2	Water meter	One credit where evidence provided demonstrates that a water meter with a pulsed output will be installed on the mains supply to each building/unit.	1	1	-	1	1	1	1	**Pulsed water meter to be specified, and linked into BMS**
Wat 3	Major leak detection	One credit where evidence provided demonstrates that a leak detection system is specified or installed on the building's water supply.	1	1	-	-	-	-	-	**Water meter to be installed that satisfy this issues criteria to limit water wastage.**
		Indicative Water (weighted) Section Score	**4.29%**							

Materials

Mat 1	Materials Specification (major building elements)	Up to six credits are available, determined by the Green Guide to Specificatio ratings for the following major building/finishing elements: 1. External Walls 2. Windows 3. Roof 4. Upper Floor Slabs 5. Internal Walls 6. Floor Finishes / Coverings	**6**	**4**	-	-	-	-	-	**The actual make-up of the main elements has yet to be determined, but it is assumed that the external and internal walls will score highly, as will the windows. Floors are very hard to achieve high ratings due to the presence of concrete**
Mat 2	Hard landscaping and boundary protection	One credit where evidence provided demonstrates that at least 80% of the combined area of external hard landscaping and boundary protection specifications achieve an A or A+ rating, as defined by the Green Guide to Specification.	**1**	**0**	-	-	-	-	-	**It is not predicted this wil be achieved.**
Mat 3	Re-use of building façade	One credit is awarded where evidence provided demonstrates that at least 50% of the total façade (by area) is reused and at least 80% of the reused façade (by mass) comprises in-situ reused material.	**1**	**0**	-	-	-	-	-	**Old building will be replaced**
Mat 4	Re-use of building structure	One credit is awarded where evidence provided demonstrates that a design reuses at least 80% of an existing primary structure and for part refurbishmen and part new build, the volume of the reused structure comprises at least 50% of the final structure's volume.	**1**	**0**	-	-	-	-	-	**Old building will be replaced**
Mat 5	Responsible sourcing of materials	Up to 3 credits are available where evidence provided demonstrates that 80% of the assessed materials in the following building elements are responsibly sourced: a. Structural Frame b. Ground floor c. Upper floors (including separating floors) d. Roof e. External walls f. Internal walls g. Foundation/substructure h. Staircase Additionally 100% of any timber must be legally sourced.	**3**	**1**	-	-	-	-	-	**1 credit is assumed here due to the difficulties in achieving this credit and the limited number of suppliers having appropriate documentation in place.**
Mat 6	Insulation	One credit where evidence provided demonstrates that thermal insulation products used in the building have a low embodied impact relative to their thermal properties, determined by the Green Guide to Specification ratings. One credit where evidence provided demonstrates that thermal insulation products used in the building have been responsibly sourced.	**2**	**1**	-	-	-	-	-	**Insulation to have low embodied energy**
Mat 7	Designing For Robustness	One credit where protection is given to vulnerable parts of the building such as areas exposed to high pedestrian traffic, vehicular and trolley movements.	**1**	**1**	-	-	-	-	-	**This is to be achieved to prolong the longevity of the building**
Mat 8	Responsible sourcing of materials - finishing elements	Up to 2 credits are available where evidence provided demonstrates 80% of the assessed materials in the following finishing elements are responsibly sourced: a. Stairs b. Windows c. External and internal doors d. Skirting e. Panelling f. Furniture g. Fascias h. Any other significant use Additionally 100% of any timber must be legally sourced.	**2**	**0**	-	-	-	-	-	**No credits are assumed here due to the difficulties in achieving this credit and the limited number of suppliers having appropriate documentation in place.**
		Indicative Materials (weighted) Section Score	**5.15%**							

Waste

Wst 1	Construction Site Waste Management	Up to three credits are available where evidence provided demonstrates that the amount of non-hazardous construction waste (m3/100m2 or tonnes100m2) generated on site by the development is the same as or better than good or best practice levels. One credit where evidence provided demonstrates that a significant majority of non-hazardous construction waste generated by the development will be diverted from landfill and reused or recycled.	**4**	**1**	-	-	-	-	-	**Approximately 8% of the sites' generated waste is the same or above best practice levels.**
Wst 2	Recycled aggregates	One credit where evidence provided demonstrates the significant use of recycled or secondary aggregates in 'high-grade' building aggregate uses.	**1**	**0**	-	-	-	-	-	**This will not be achieved given the nature of the development**

Wst 3	Recyclable waste storage	Up to two credits are available: one credits where storage space is provided for recyclable household waste in the self contained dwellings/bedsits or shared communal areas one additional credit where a central, dedicated space is provided for the storage of the building's recyclable waste streams	**2**	**1**	-	-	-	1	1	**Recyling facilities provided in individual units**
Wst 5	Composting	One credit where evidence provided demonstrates there is a vessel on site fo composting food waste, and adequate storage for such waste generated by the building's users and operation. OR Where space or access is limited, there is a dedicated space for compostable food waste to be stored prior to removal and composting at an alternative site	**1**	**0**	-	-	-	-	-	**This wont be achieved**
		Indicative Waste (weighted) Section Score	**1.88%**							
Land Use & Ecology										
LE1	Re-use of land	One credit where evidence provided demonstrates that the majority of the footprint of the proposed development falls within the boundary of previously developed land.	**1**	**1**	-	-	-	-	-	**Site has no ecological value**
LE2	Contaminated land	One credit is awarded where evidence provided demonstrates that the land used for the new development has, prior to development, been defined as contaminated and where adequate remedial steps have been taken to decontaminate the site prior to construction.	**1**	**0**	-	-	-	-	-	**The site has not been assessed at this stage, yet it is not thought any contaminates exist.**
LE3	Ecological value of site AND Protection of ecological features	One credit is awarded where evidence provided demonstrates that the construction zone is defined as land of low ecological value and all existing features of ecological value will be fully protected from damage during site preparation and construction works.	**1**	**1**	-	-	-	-	-	**The site is of low ecological value, with no features present.**
LE4	Mitigating Ecological impact	One credit where evidence provided demonstrates that the change in the site's existing ecological value, as a result of development, is minimal. Two credits where evidence provided demonstrates that there is no negative change in the site's existing ecological value as a result of development.	**2**	**2**	-	-	1	1	1	**Presence of green roofs shall increase the site ecological value significantly**
LE5	Enhancing Site Ecology	One credit where the design team (or client) has appointed a suitably qualifie ecologist to advise and report on enhancing and protecting the ecological value of the site; and implemented the professional's recommendations for general enhancement and protection of site ecology. Two credits where, in addition to the above, there is a positive increase in the ecological value of the site of up to (but not including) 6 species. Three credits where, in addition to the above, evidence is provided to demonstrate a positive increase in the ecological value of the site of 6 specie or greater.	**3**	**2**	-	-	-	-	-	**Presence of green roofs shall increase the site ecological value significantly. This should be qualified through an appropriate person at the time of assessment**
LE6	Long term impact on biodiversity	One credit where the client has committed to achieving the mandatory requirements listed below and at least two of the additional requirements. Two credits where the client has committed to achieving the mandatory requirements listed below and at least four of the additional requirements.	**2**	**0**	-	-	-	-	-	**This is not to be achieved at this stage**
		Indicative Land Use & Ecology (weighted) Section Score	**6.00%**							
Pollution										
Pol 1	Refrigerant GWP - Building services	One credit where evidence provided demonstrates the use of refrigerants with a global warming potential (GWP) of less than 5 or where there are no refrigerants specified for use in building services.	**1**	**1**	-	-	-	-	-	**No refridgants are to be included**
Pol 2	Preventing refrigerant leaks	One credit where evidence provided demonstrates that refrigerant leaks can be detected or where there are no refrigerants specified for the development. One credit where evidence provided demonstrates that the provision of automatic refrigerant pump down is made to a heat exchanger (or dedicated storage tanks) with isolation valves. Or where there are no refrigerants specified for the development.	**2**	**2**	-	-	-	-	-	**No refridgants are to be included**

Pol 4	NOx emissions from heating source	One credit where evidence provided demonstrates that the dry NOx emissions from delivered space heating energy are≤100 mg/kWh (at 0% excess O2). Two credits where evidence provided demonstrates that the dry NOx emissions from delivered space heating energy are≤70 mg/kWh (at 0% excess O2). Three credits where evidence provided demonstrates that the dry NOx emissions from delivered space heating energy are≤40 mg/kWh (at 0% excess O2).	**3**	**1**	-	-	-	-	-	**A biomass boiler is proposed with this planning application. Some boiler can deliver very low Nox emissions and these will be sought where ever possible**
Pol 5	Flood risk	Two credits where evidence provided demonstrates that the assessed development is located in a zone defined as having a low annual probability o flooding. One credit where evidence provided demonstrates that the assessed development is located in a zone defined as having a medium or high annual probability of flooding AND the ground level of the building, car parking and access is above the design flood level for the site's location. One further credit where evidence provided demonstrates that surface water run-off attenuation measures are specified to minimise the risk of localised flooding, resulting from a loss of flood storage on site due to development.	**3**	**3**	-	-	-	-	-	**Site is outside the risk of flooding, and SUDS (Green Roofs) have been specified to attenuate the surface water run-off**
Pol 6	Minimising watercourse pollution	One credit where evidence provided demonstrates that effective on site treatment such as Sustainable Drainage Systems (SUDs) or oil separators have been specified in areas that are or could be a source of watercourse pollution.	**1**	**1**	-	-	-	-	-	**SUDS (Green Roofs) are specified**
Pol 7	Reduction of Night Time Light Pollution	One credit where evidence provided demonstrates that the external lighting design is in compliance with the guidance in the Institution of Lighting Engineers (ILE) Guidance notes for the reduction of obtrusive light, 2005.	**1**	**0**	-	-	-	-	-	**It is not thought at this stage this will be achieved.**
		Indicative Pollution (weighted) Section Score	**7.27%**							

Appendix 3

BREEAM Office Pre-Assessment illustrating a route for the Office use to achieve a 'Very Good' rating

Indicative Overall BREEAM Score
61.90%

BREEAM Rating Benchmarks	
PASS	≥30
GOOD	≥45
VERY GOOD	≥55
EXCELLENT	≥70
OUTSTANDING*	≥85

BREEAM Offices 2008 Pre-Assessment Estimator

Ref	BREEAM Issue Title	BREEAM Offices - Issue Criteria	Number of BREEAM credits available	Total predicted BREEAM credits achieved	Minimum BREEAM Standards: Pass	Good	Very Good	Excellent	Outstanding	Notes
					YES	YES	YES	NO	NO	
					Minimum required credits by BREEAM issue and rating					
Management										
Man 1	Commissioning	One credit where evidence provided demonstrates that an appropriate project team member has been appointed to monitor commissioning on behalf of the client to ensure commissioning will be carried out in line with current best practice. Two credits where, in addition to the above, evidence provided demonstrates th seasonal commissioning will be carried out during the first year of occupation, post construction (or post fit out).	2	1	1	1	1	1	2	A member of the project team will be appointed to monitor commissioning on the behalf of the client. It is anticipated that they will be from the appointed M&E consultants.
Man 2	Considerate Constructors	One credit where evidence provided demonstrates that there is a commitment t comply with best practice site management principles. Two credits where evidence provided demonstrates that there is a commitment go beyond best practice site management principles.	2	1	-	-	-	1	2	There is a commitment to achieve best practice principles
Man 3	Construction Site Impacts	One credit where evidence provided demonstrates that 2 or more of items a-g (listed below) are achieved. Two credits where evidence provided demonstrates that 4 or more of items a-g (listed below) are achieved. Three credits where evidence provided demonstrates that 6 or more of items a-g are achieved: a. Monitor, report and set targets for CO2 or energy arising from site activities b. Monitor, report and set targets for CO2 or energy arising from transport to an from site c. Monitor, report and set targets for water consumption arising from site activitie d. Implement best practice policies in respect of air (dust) pollution arising from the site e. Implement best practice policies in respect of water (ground and surface) pollution occurring on the site f. Main contractor has an environmental materials policy, used for sourcing of construction materials to be utilised on site g. Main contractor operates an Environmental Management System. One additional credit where evidence provided demonstrates that at least 80% o site timber is responsibly sourced and 100% is legally sourced.	4	3	-	-	-	-	-	Construction waste will be monitored Construction waste will be recycled using specialist recycling company Best practices will be adopted for keeping dust levels down Best practices will be adopted to ensure water course are not polluted 80% of the site hoarding will be responsibly sourced
Man 4	Building user guide	One credit where evidence provided demonstrates the provision of a simple gui that covers information relevant to the tenant/occupants and non-technical building manager on the operation and environmental performance of the building.	1		-	-	-	1	1	A simple guide will be provided to all tenants and building users
Man 8	Security	One credit where evidence provided demonstrates that an Architectural Liaison Officer (ALO) or Crime Prevention Design Advisor (CPDA) from the local police force has been consulted at the design stage and their recommendations incorporated into the design of the building and its parking facilities (if relevant).	1	1	-	-	-	-	-	This will be achieved, and consultation with the ALO has already influenced the design at the planning stage
		Indicative Management (weighted) Section Score	**7.20%**							
Health & Wellbeing										
Hea 1	Daylighting	One credit where evidence provided demonstrates that at least 80% of floor area in each occupied space is adequately daylit.	1 1	0	-	-	-	-	-	Given the offices are located in the basement levels this credit may not be achieved, but this is not the detailed information present at this stage to fully assess.
Hea 2	View Out	One credit where evidence provided demonstrates that all relevant building area have an adequate view out.	1	0	-	-	-	-	-	Given the offices are located in the basement levels this credit will not be achieved.
Hea 3	Glare Control	One credit where evidence provided demonstrates that an occupant-controlled shading system (e.g. internal or external blinds) is fitted in relevant building area	1	0	-	-	-	-	-	Given the offices are located in the basement levels this credit will not be achieved.

Hea 4	High frequency lighting	One credit where evidence provided demonstrates that high frequency ballasts are installed on all fluorescent and compact fluorescent lamps.	**1**	**1**	1	1	1	1	1	**All fluorescent luminaires are specified to have high frequency ballasts**
Hea 5	Internal and external lighting levels	One credit where evidence provided demonstrates that all internal and external lighting, where relevant, is specified in accordance with the appropriate maintained illuminance levels (in lux) recommended by CIBSE.	**1**	**1**	-	-	-	-	-	**All internal/external light fittings will be to CIBSE recommendations**
Hea 6	Lighting zones & controls	One credit where evidence provided demonstrates that, in all relevant building areas, lighting is appropriately zoned and occupant controllable.	**1**	**1**	-	-	-	-	-	**Internal lighting to allow for separate user controls in certain areas.**
Hea 7	Potential for natural ventilation	One credit where evidence provided demonstrates that fresh air is capable of being delivered to the occupied spaces of the building via a natural ventilation strategy, and there is sufficient user-control of the supply of fresh air.	**1**	**1**	-	-	-	-	-	**Development uses natural ventilation throughout with no cooling**
Hea 8	Indoor air quality	One credit where air intakes serving occupied areas avoid major sources of external pollution and recirculation of exhaust air.	**1**	**0**	-	-	-	-	-	**This is very onerous as no windows can be within 20m of an external pollutant (car park or road)**
Hea 9	Volatile Organic Compounds	One credit where evidence provided demonstrates that the emissions of VOCs and other substances from key internal finishes and fittings comply with best practice levels.	**1**	**0**	-	-	-	-	-	**At this stage it is difficult to determine so the worse case scenario has been given.**
Hea 10	Thermal comfort	One credit where evidence provided demonstrates that thermal comfort levels in occupied spaces of the building are assessed at the design stage to evaluate appropriate servicing options, ensuring appropriate thermal comfort levels are achieved.	**1**	**1**	-	-	-	-	-	**This is to be achieved in accordance with CIBSE AM11**
Hea 11	Thermal zoning	One credit where evidence provided demonstrates that local occupant control is available for temperature adjustment in each occupied space to reflect differing user demands.	**1**	**1**	-	-	-	-	-	**TRV'S will be included**
Hea 12	Microbial contamination	One credit where evidence provided demonstrates that the risk of waterborne a airborne legionella contamination has been minimised.	**1**	**1**	1	1	1	1	1	**This is Mandatory and therefore will be achieved**
Hea 13	Acoustic Performance	One credit where evidence provided demonstrates that the building achieves appropriate indoor ambient noise levels in offices areas. In addition, for fully fitted buildings onlyAppropriate airborne sound insulation levels are achieved between acoustically sensitive spaces and occupied spaces sufficient to ensure adequate privacy.	**1**	**1**	-	-	-	-	-	**This should be achieved to ensure the quality of the workspace.**
Hea20	Home Office	N/A	**0**	**0**	-	-	-	-	-	
Hea21	Sound Insulation	N/A	**0**	**0**	-	-	-	-	-	
		Indicative Health & Wellbeing (weighted) Section Score	**8.57%**							

Energy

Ene 1	Reduction of CO2 Emissions	Up to fifteen credits where evidence provided demonstrates an improvement in the energy efficiency of the building's fabric and services and therefore achieves lower building operational related CO2 emissions (refer to the BREEAM manual for benchmarks)	**15**	**12**	-	-	-	6	10	**This is substaniated through the Energy Strategy, and the use of a biomass boiler**

Ene 2	Sub-metering of Substantial Energy Uses	One credit where evidence provided demonstrates the provision of direct sub-metering of energy uses within the building.	1	1	-	-	1	1	1	This should be included
Ene 3	Sub-metering of high energy load Areas and Tenancy	One credit where evidence provided demonstrates sub-metering of energy consumption by tenancy/building function area is installed within the building.	1	1	-	-	-	-	-	This should be included
Ene 4	External Lighting	One credit where energy-efficient external lighting is specified and all light fitting are controlled for the presence of daylight.	1	1	-	-	-	-	-	Energy efficient controls to be included in communal areas
Ene 5	Low zero carbon technologies	One credit where evidence provided demonstrates that a feasibility study considering local (on-site and/or near site) low or zero carbon (LZC) technologies has been carried out and the results implemented. Two credits where evidence provided demonstrates that the first credit has been achieved and there is a 10% reduction in the building's CO2 emissions as a result of the installation of a feasible local LZC technology. Three credits where evidence provided demonstrates that the first credit has been achieved and there is a 15% reduction in the building's CO2 emissions as a result of the installation of a feasible local LZC technology. Or alternatively: A maximum of one credit where evidence provided demonstrates that a contract with an energy supplier is in place to provide sufficient electricity used within the assessed building/development to meet the above criteria from a 100% renewable energy source. (Note: a standard Green Tariff will not comply)	3	2	-	-	-	1	1	Substaniated through the Energy Strategy submitted through with this Application. It is proposed that this will be achieved through the use of a biomass boiler
Ene 8	Lifts	Up to two credits are available where evidence provided demonstrates the installation of energy-efficient lift(s).	2	0	-	-	-	-	-	This will be looked at in greater detail by the design team at the detailed design stage.
Ene 18	Drying space		0		-	-	-	-	-	
		Indicative Energy (weighted) Section Score	**14.04%**							

Transport

Tra 1	Provision of public transport	Up to three credits are awarded on a sliding scale based on the assessed buildings' accessibility to the public transport network.	3	1	-	-	-	-	-	1 credit is assumed at this stage. There is significant transport networks in the area
Tra 2	Proximity to amenities	One credit where evidence provided demonstrates that the building is located within 500m of accessible local amenities appropriate to the building type and its users.	1	1	-	-	-	-	-	A number of facilities are close proximity.
Tra 3	Cyclist Facilities	One credit where evidence provided demonstrates that covered, secure and well lit cycle storage facilities are provided for all building users. Two credits where, in addition to the above, adequate changing facilities are provided for staff use.	2	2	-	-	-	-	-	Provision are to be included for both.
Tra 4	Pedestrian and cycle safety	One credit where evidence provided demonstrates that the site layout has been designed in accordance with best practice to ensure safe and adequate pedestrian and cycle access.	1	0	-	-	-	-	-	It is unlikely that at this stage this credit can be awarded
Tra 5	Travel plan	One credit where evidence is provided to demonstrate that a travel plan has been developed and tailored to the specific needs of the building users.	1	1	-	-	-	-	-	This is to be achieved, and wil be submitted with this Planning Application.

Tra 6	Maximum car parking capacity	One credit where evidence provided demonstrates no more than one parking space is provided for every three building users. Two credits where evidence provided demonstrates no more than one parking space is provided for every four building users.	**2**	**2**	-	-	-	-	-	**Car free development**
		Indicative Transport (weighted) Section Score	**5.60%**							
Water										
Wat 1	Water Consumption	Up to three credits where evidence provided demonstrates that the specification includes taps, urinals, WCs and showers that consume less potable water in use than standard specifications for the same type of fittings.	**3**	**2**	-	1	1	1	2	**Low flow WC's, low flow showers (less than 9L/min), low flow urinalsspray/pop up taps to be specified Greywater systems are not specified**
Wat 2	Water meter	One credit where evidence provided demonstrates that a water meter with a pulsed output will be installed on the mains supply to each building/unit.	**1**	**1**	-	1	1	1	1	**Pulsed water meter to be specified, and linked into BMS**
Wat 3	Major leak detection	One credit where evidence provided demonstrates that a leak detection system is specified or installed on the building's water supply.	**1**	**1**	-	-	-	-	-	**Water meter to be installed that satisfy this issues criteria to limit water wastage.**
Wat 4	Sanitary supply shut off	One credit where evidence provided demonstrates that proximity detection shut off is provided to the water supply to all toilet areas.	**1**	**0**	-	-	-	-	-	**It is unclear at this stage if this is to be achieved.**
		Indicative Water (weighted) Section Score	**4.00%**							
Materials										
Mat 1	Materials Specification (major building elements)	Up to four credits are available, determined by the Green Guide to Specification ratings for the following major building/finishing elements: 1. External Walls 2. Windows 3. Roof 4. Upper Floor Slabs	**4**	**3**	-	-	-	-	-	**The actual make-up of the main elements has yet to be determined, but it is assumed that the external and internal walls will score highly, as will the windows. Floors are very hard to achieve high ratings due to the presence of concrete**
Mat 2	Hard landscaping and boundary protection	One credit where evidence provided demonstrates that at least 80% of the combined area of external hard landscaping and boundary protection specifications achieve an A or A+ rating, as defined by the Green Guide to Specification.	**1**	**0**	-	-	-	-	-	**This will not be achieved**
Mat 3	Re-use of building façade	One credit is awarded where evidence provided demonstrates that at least 50% of the total façade (by area) is reused and at least 80% of the reused façade (by mass) comprises in-situ reused material.	**1**	**0**	-	-	-	-	-	**This will be be achieved**
Mat 4	Re-use of building structure	One credit is awarded where evidence provided demonstrates that a design reuses at least 80% of an existing primary structure and for part refurbishment and part new build, the volume of the reused structure comprises at least 50% of the final structure's volume.	**1**	**0**	-	-	-	-	-	**This will not be achieved**
Mat 5	Responsible sourcing of materials	Up to 3 credits are available where evidence provided demonstrates that 80% of the assessed materials in the following building elements are responsibly sourced: a. Structural Frame b. Ground floor c. Upper floors (including separating floors) d. Roof e. External walls f. Internal walls g. Foundation/substructure h. Staircase Additionally 100% of any timber must be legally sourced.	**3**	**1**	-	-	-	-	-	**1 credit is assumed here due to the difficulties in achieving this credit and the limited number of suppliers having appropriate documentation in place.**
Mat 6	Insulation	One credit where evidence provided demonstrates that thermal insulation products used in the building have a low embodied impact relative to their thermal properties, determined by the Green Guide to Specification ratings. One credit where evidence provided demonstrates that thermal insulation products used in the building have been responsibly sourced.	**2**	**1**	-	-	-	-	-	**Insulation to have low embodied energy**

Mat 7	Designing For Robustness	One credit where protection is given to vulnerable parts of the building such as areas exposed to high pedestrian traffic, vehicular and trolley movements.	1	1	-	-	-	-	-	This is to be achieved to prolong the longevity of the building
Mat 8	Responsible sourcing of materials - finishing elements		0		-	-	-	-	-	
		Indicative Materials (weighted) Section Score	**5.77%**							
Waste										
Wst 1	Construction Site Waste Management	Up to three credits are available where evidence provided demonstrates that the amount of non-hazardous construction waste (m3/100m2 or tonnes100m2) generated on site by the development is the same as or better than good or best practice levels. One credit where evidence provided demonstrates that a significant majority of non-hazardous construction waste generated by the development will be diverted from landfill and reused or recycled.	4	1	-	-	-	-	-	Approximately 8% of the sites' generated waste is the same or above best practice levels.
Wst 2	Recycled aggregates	One credit where evidence provided demonstrates the significant use of recycled or secondary aggregates in 'high-grade' building aggregate uses.	1	0	-	-	-	-	-	This will not be achieved given the nature of the development
Wst 3	Recyclable waste storage	One credit where a central, dedicated space is provided for the storage of the building's recyclable waste streams.	1	1	-	-	-	1	1	Recyling facilities provided to the offices and in a communal storage facility
Wst 6	Floor Finishes	One credit where carpets and other floor finishes are specified by the future occupant or, in tenanted areas of speculative buildings, where carpets or floor finishes are installed in a limited show area only.	1	1	-	-	-	-	-	This should be achieved
		Indicative Waste (weighted) Section Score	**3.21%**							
Land Use & Ecology										
LE1	Re-use of land	One credit where evidence provided demonstrates that the majority of the footprint of the proposed development falls within the boundary of previously developed land.	1	1	-	-	-	-	-	Site has no ecological value
LE2	Contaminated land	One credit is awarded where evidence provided demonstrates that the land used for the new development has, prior to development, been defined as contaminated and where adequate remedial steps have been taken to decontaminate the site prior to construction.	1	0	-	-	-	-	-	The site has not been assessed at this stage, yet it is not thought any contaminates exist.
LE3	Ecological value of site AND Protection of ecological features	One credit is awarded where evidence provided demonstrates that the construction zone is defined as land of low ecological value and all existing features of ecological value will be fully protected from damage during site preparation and construction works.	1	1	-	-	-	-	-	The site is of low ecological value, with no features present.
LE4	Mitigating Ecological impact	One credit where evidence provided demonstrates that the change in the site's existing ecological value, as a result of development, is minimal. Two credits where evidence provided demonstrates that there is no negative change in the site's existing ecological value as a result of development.	2	2	-	-	1	1	1	Presence of green roofs shall increase the site ecological value significantly
LE5	Enhancing Site Ecology	One credit where the design team (or client) has appointed a suitably qualified ecologist to advise and report on enhancing and protecting the ecological value of the site; and implemented the professional's recommendations for general enhancement and protection of site ecology. Two credits where, in addition to the above, there is a positive increase in the ecological value of the site of up to (but not including) 6 species. Three credits where, in addition to the above, evidence is provided to demonstrate a positive increase in the ecological value of the site of 6 species or greater.	3	2	-	-	-	-	-	Presence of green roofs shall increase the site ecological value significantly. This should be qualified through an appropriate person at the time of assessment

LE6	Long term impact on biodiversity	One credit where the client has committed to achieving the mandatory requirements listed below and at least two of the additional requirements. Two credits where the client has committed to achieving the mandatory requirements listed below and at least four of the additional requirements.	**2**	**0**	-	-	-	-	-	**This is not to be achieved at this stage**
		Indicative Land Use & Ecology (weighted) Section Score	**6.00%**							

Pollution

Pol 1	Refrigerant GWP - Building services	One credit where evidence provided demonstrates the use of refrigerants with a global warming potential (GWP) of less than 5 or where there are no refrigerants specified for use in building services.	**1**	**1**	-	-	-	-	-	**No refridgants are to be included**
Pol 2	Preventing refrigerant leaks	One credit where evidence provided demonstrates that refrigerant leaks can be detected or where there are no refrigerants specified for the development. One credit where evidence provided demonstrates that the provision of automati refrigerant pump down is made to a heat exchanger (or dedicated storage tanks with isolation valves. Or where there are no refrigerants specified for the development.	**2**	**2**	-	-	-	-	-	**No refridgants are to be included**
Pol 4	NOx emissions from heating source	One credit where evidence provided demonstrates that the maximum dry NOx emissions from delivered space heating energy are ≤100 mg/kWh (at 0% excess O2). Twp credits where evidence provided demonstrates that the maximum dry NOx emissions from delivered space heating energy are ≤70 mg/kWh (at 0% excess O2). Three credits where evidence provided demonstrates that the maximum dry NO emissions from delivered space heating energy are ≤40 mg/kWh (at 0% excess O2).	**3**	**1**	-	-	-	-	-	**A biomass boiler is proposed with this planning application. Some boiler can deliver very low Nox emissions and these will be sought where ever possible**
Pol 5	Flood risk	Two credits where evidence provided demonstrates that the assessed development is located in a zone defined as having a low annual probability of flooding. One credit where evidence provided demonstrates that the assessed development is located in a zone defined as having a medium or high annual probability of flooding AND the ground level of the building, car parking and access is above the design flood level for the site's location. One further credit where evidence provided demonstrates that surface water run off attenuation measures are specified to minimise the risk of localised flooding, resulting from a loss of flood storage on site due to development.	**3**	**3**	-	-	-	-	-	**Site is outside the risk of flooding, and SUDS (Green Roofs) have been specified to attenuate the surface water run-off**
Pol 6	Minimising watercourse pollution	One credit here evidence provided demonstrates that effective on site treatmen such as Sustainable Drainage Systems (SUDs) or oil separators have been specified in areas that are or could be a source of watercourse pollution.	**1**	**1**	-	-	-	-	-	**SUDS (Green Roofs) are specified**
Pol 7	Reduction of Night Time Light Pollution	One credit where evidence provided demonstrates that the external lighting design is in compliance with the guidance in the Institution of Lighting Engineers (ILE) Guidance notes for the reduction of obtrusive light, 2005.	**1**	**0**	-	-	-	-	-	**It is not thought at this stage this will be achieved.**
Pol 8	Noise Attenuation	One credit where evidence provided demonstrates that new sources of noise from the development do not give rise to the likelihood of complaints from existi noise-sensitive premises and amenity or wildlife areas that are within the locality of the site.	**1**	**1**	-	-	-	-	-	**This should be achieved, although a more detailed assessment at the design stage should be achieved.**
		Indicative Pollution (weighted) Section Score	**7.50%**							