NORCUTT ROAD, TWICKENHAM

Sustainability Statement

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Sustainability Statement
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EXECUTIVE SUMMARY

RPS Consulting Services Ltd. (RPS) was commissioned by *Leek Real Estate (No.1) Ltd.* to produce a Sustainability Statement for the proposed development at 75 Norcutt Road, Twickenham, London, TW2 6SR. The scheme consists of the development of a five-storey building to provide residential accommodation.

This sustainability statement supports the full planning application for the London Borough of Richmond Upon Thames. The purpose of this report is to demonstrate that sustainable development principles have been considered during the design of the development and how these would be further embedded throughout the lifecycle of the development, in accordance with relevant national, regional, and local planning policies and guidance. The report is based on information received to date, detailed within the main body of the report.

As set out in this report, the proposed development has been designed to take account of a number of fundamental design concepts to create a sustainable development. As a result, the following key sustainability aspects have been incorporated into the design:

- A commitment that the main contractor on site will sign up to the Considerate Constructor's scheme (or equivalent) and that the score achieved will be recognised as being above best practice;
- The maximisation of daylight to reduce the demand on artificial lighting and create a healthy internal environment for the occupants;
- Provision of adequate cycle storage facilities and car parking spaces on site to promote the use of sustainable transport modes;
- The sourcing of the major building elements and materials from responsible local sources where practical;
- Specification of materials rated as A or above under the Green Guide and use of responsibly sourced timber;
- Minimisation of construction waste stream quantities and targets for diversion of non-hazardous construction waste from landfill;
- Implementation of a Site Waste Management Plan on site;
- Minimisation of the generation of construction waste and of the waste that is generated, ensuring a high percentage is diverted from landfill;
- Reduction of water use on site through the specification of water saving sanitary items;
- Effective surface water management;
- Reduction of CO_2 emissions, through the incorporation of high insulation standards, very efficient building services and photovoltaic panels.
- Incorporation of energy efficient internal and external lighting.

Overall, the principles of good sustainable design have been incorporated in the development and good sustainable practices would be followed during the construction phase.

Contents

1. INTRODUCTION

1.1.1 RPS Consulting Services Ltd. (RPS) was commissioned by *Leek Real Estate (No.1) Ltd* to produce a Sustainability Statement for the proposed development at 75 Norcutt Road, Twickenham, London, TW2 6SR.

1.2 Scheme Overview

1.2.1 The scheme consists of the demolition of the commercial building and the replacement with a residential development comprising of 15 dwellings.

Figure 1: South elevation of the proposed development

1.2.2 This sustainability statement supports the full planning application for the London Borough of Richmond Upon Thames.

1.3 Purpose of the Sustainability Statement

1.3.1 According to the Brundtland Commission, of the United Nations, a sustainable development is *"the development that meets the needs of the present without compromising the ability of future generations to meet their own needs."* This requires the reconciliation of environmental, social equity and economic demands - the "three pillars" of sustainability.

Figure 2: The 'three pillars' of Sustainability

1.3.2 The purpose of this report is to demonstrate that sustainable development principles have been considered during the design of the development and how these would be further embedded throughout the lifecycle of the development, in accordance with relevant national, regional, and local planning policies and guidance.

1.3.3 The statement provides an account of how the design team have considered and integrated sustainability during the design process. Based on this planning policy review, this sustainability statement has been structured to address the following aspects of sustainability:

- Sustainable Economic Development.
- Sustainable Healthy Communities.
- Conserving and Enhancing the Natural and Historic Environment.
- Low Carbon Future and Climate Change.
- Sustainable Transport.
- Use of Natural Resources and Minimising Waste.
- Management

1.3.4 These aspects are then drawn together in the concluding Chapter 10, summarising the sustainable design and construction principles incorporated in the development.

2. SUSTAINABLE POLICIES AND OBJECTIVES

2.1.1 Various national, regional and local planning and dedicated sustainability policy documents promote the themes of sustainable development which are summarised below. This section details the relevant policies applicable to the proposed site and which form the basis of our sustainability statement.

2.2 National Level Policies

National Sustainability Policy

2.2.1 The National Planning Policy Framework (NPPF) was published in February 2019, and replaced the first NPPF published in March 2012 and a first revision published in July 2018. The NPPF set out the Government's planning policies for England and how these are expected to be applied. The NPPF is designed to make the planning system less complex and more accessible; to protect the environment and promote sustainable growth. It provides a framework within which local people and their respective councils can produce their own distinctive local and neighbourhood plans, which reflect the needs and priorities of their communities.

2.2.2 At the heart of the NPPF is a presumption in favour of sustainable development (paragraph 11). The three dimensions of sustainable development can be defined as the economic, social and environmental.

2.2.3 Plans should provide a framework for addressing housing needs and other economic, social and environmental priorities; and a platform for local people to shape their surroundings. Strategic policies should set out an overall strategy for the pattern, scale and quality of development, and make sufficient provision for:

- housing (including affordable housing), employment, retail, leisure and other commercial development;
- infrastructure for transport, telecommunications, security, waste management, water supply, wastewater, flood risk and coastal change management, and the provision of minerals and energy (including heat);
- community facilities (such as health, education and cultural infrastructure); and
- conservation and enhancement of the natural, built and historic environment, including landscapes and green infrastructure, and planning measures to address climate change mitigation and adaptation.

2.2.4 The NPPF aims to strengthen local decision making, with the use of decision-taking in a positive way, as a means of fostering the delivery of sustainable development.

2.2.5 Finally, the NPPF (paragraph 16) also highlights that plans should be prepared with the objective of contributing to the achievement of sustainable development and in a way that is aspirational but deliverable.

2.3 Regional Level Policies

Regional Sustainability Policy

The Greater London Authority - London Plan 2016

2.3.1 The London Plan consolidated with changes since 2011 (March 2016), sets out the overall strategic plan for London, and it sets out a fully integrated economic, environmental, transport and social framework for the development of the capital to 2036. It forms part of the development plan for Greater London. London boroughs' local plans need to be in general conformity with the London Plan, and its policies guide decisions on planning applications by councils and the Mayor. It contains a number of policies directly related to energy and sustainability. In particular, relation to sustainability:

Policy 2.13 Opportunity Area and Intensification Areas

2.3.2 Development proposals within opportunity areas and intensification areas should support the strategic policy by:

- Optimising residential and non-residential output and densities provide the necessary social and other infrastructure to sustain growth and where appropriate contain a mix of uses.
- Contributing towards meeting the minimum guidelines for housing and/or indicative estimates for employment capacity as set out in Annex 1 of the London Plan.

Policy 3.2 Improving Health and Addressing Health Inequalities

2.3.3 New developments should be designed, constructed and managed in ways that improve health and promote healthy lifestyles to help to reduce health inequalities.

Policy 5.2 Minimising Carbon Dioxide Emissions

2.3.4 Development proposals should make the fullest contribution to minimising carbon dioxide emissions. All new development will have to achieve zero carbon for residential development and a 35% improvement over 2013 Part L Building Regulations for commercial developments.

2.3.5 Zero carbon homes are homes forming part of major development applications where the residential element of the application achieves at least a 35 per cent reduction in regulated carbon dioxide emissions (beyond Part L 2013) on-site. The remaining regulated carbon dioxide emissions, to 100 per cent, are to be off-set through a cash in lieu contribution to the relevant borough to be ring fenced to secure delivery of carbon dioxide savings elsewhere.

2.3.6 All carbon dioxide emissions savings should be achieved in accordance with the following energy hierarchy:

- Be lean: use less energy.
- Be clean: supply energy efficiently.
- Be green: use renewable energy.

2.3.7 Major development proposals should include a detailed energy assessment to demonstrate how the targets for carbon dioxide emission reductions are to be met within the framework of the energy hierarchy. The calculation within the energy assessment should include the energy demand and carbon dioxide emissions covered by the Building Regulations; and, separately, the energy demand and carbon dioxide emissions from any other part of the development. This includes plant, equipment, cooking or appliances that are not covered by the Building Regulations at each stage of the energy hierarchy.

Policy 5.3 Sustainable Design and Construction

2.3.8 The highest standards of sustainable design and construction should be achieved in London to improve the environmental performance of new developments and to adapt to the effects of climate change over their lifetime. Development proposals should meet the minimum standards outlined in the Major's supplementary planning guidance and this should be clearly demonstrated within a design and access statement.

Policy 5.6 Decentralised Energy in Development Proposals

2.3.9 Development proposals should evaluate the feasibility of connection to a Decentralised Energy heating system and Combined Heat and Power (CHP) systems. In cases where a new CHP system is appropriate, development proposals should also examine opportunities to extend the system beyond the site boundary to adjacent sites.

2.3.10 Major development proposals should select energy systems in accordance with the following hierarchy:

- Connection to existing heating or cooling networks.
- Site wide CHP network.
- Communal heating and cooling.

Policy 5.7 Renewable Energy

2.3.11 The Mayor seeks to increase the proportion of energy generated from renewable sources, and expects that the projections for installed renewable energy capacity outlined in the Climate Change Mitigation and Energy Strategy and in supplementary planning guidance, will be achieved in London. Within the framework of the energy hierarchy (see Policy 5.2), there is a presumption that all major development proposals will seek to reduce carbon dioxide emissions by at least 20% through the use of on-site renewable energy generation wherever feasible.

2.3.12 Development proposals should seek to utilise renewable energy technologies such as: biomass heating; cooling and electricity; renewable energy from waste; photovoltaics; solar water heating; wind and heat pumps. All renewable energy systems should be located and designed to minimise any potential adverse impacts on biodiversity, the natural environment and historical assets, and to avoid any adverse impacts on air quality.

Policy 5.9 Overheating and Cooling

2.3.13 Major development proposals should reduce potential overheating and reliance on air conditioning systems through consideration of principles of the following cooling hierarchy:

- Minimise internal heat generation through energy efficient design.
- Reduce the amount of heat entering a building during summer months through orientation, shading, albedo, fenestration, insulation and green roofs and walls.
- Manage the heat within the building through exposed internal thermal mass and high ceilings.
- Use passive ventilation.
- Use mechanical ventilation.
- Use active cooling systems (ensuring they are the lowest carbon options).

2.3.14 Major development proposals should demonstrate how the design, materials, construction and operation of the development would minimise overheating and also meet its cooling needs. New development in London should also be designed to avoid the need for energy intensive air conditioning systems as much as possible.

Policy 5.10 Urban Greening

2.3.15 Development proposals should integrate green infrastructure from the beginning of the design process to contribute to urban greening, including the public realm. Elements that can contribute to this include tree planting, green roofs and walls, and soft landscaping. Major development proposals within the Central Activities Zone should demonstrate how green infrastructure has been incorporated.

Policy 5.13 Sustainable Drainage

2.3.16 Development proposals should utilise sustainable urban drainage systems (SUDs) unless there are practical reasons for not doing so, and should aim to achieve greenfield run-off rates and ensure that surface water run-off is managed as close to its source as possible. Drainage should be designed and implemented in ways that deliver other policy objectives, including water use efficiency and quality, biodiversity, amenity and recreation.

Policy 6.3 Assessing effects of development on transport capacity

2.3.17 Development proposals should ensure that impacts on transport capacity and the transport network, at both a corridor and local level, are fully assessed. Development should not adversely affect safety on the transport network. Transport assessment will be required in accordance with TfL's Transport Assessment Best Practice Guidance for major planning application.

Policy 6.9 Cycling

2.3.18 Developments should provide secure, integrated, convenient and accessible cycle parking facilities in line with the minimum standards set out in Table 6.3 of the London Plan and the guidance set out in the London Cycle Design Standards. This should include the provision of links to existing and planned cycle infrastructure projects.

Policy 6.10 Walking

2.3.19 Development proposals should ensure high quality pedestrian environments and emphasise the quality of the pedestrian and street space by referring to Transport for London's Pedestrian Design Guidance.

Policy 6.13 Parking

2.3.20 The Mayor wishes to see an appropriate balance being struck between promoting new development and preventing excessive car parking provision that can undermine cycling, walking and public transport use.

2.4 Local Level Policies – Richmond Council

Local Sustainability Policy

London Borough of Richmond Upon Thames – Local Plan

2.4.1 The Council's Local Plan sets out policies and guidance for the development of the borough over the next 15 years. It looks ahead to 2033 and identifies where the main developments will take place, and how places within the borough will change, or be protected from change, over that period.

2.4.2 The Local Plan which was previously known as the Local Development Framework was adopted in July 2018 and replaces the previous policies within the Core Strategy and Development Management Plan.

Policy LP1 – Local Character and Design Quality

2.4.3 The Council requires all development to be of high architectural and urban design quality. The high quality character and heritage of the borough and its villages will need to be maintained and enhanced where opportunities arise. Development proposals will have to demonstrate a thorough understanding of the site and how it relates to its existing context, including character and appearance, and take opportunities to improve the quality and character of buildings, spaces and the local area.

Policy LP8 – Amenity and Living Conditions

2.4.4 All development will be required to protect the amenity and living conditions for occupants of new, existing, adjoining and neighbouring properties. The Council will:

- ensure the design and layout of buildings enables good standards of daylight and sunlight to be achieved in new development and in existing properties affected by new development; where existing daylight and sunlight conditions are already substandard, they should be improved where possible;
- ensure balconies do not raise unacceptable overlooking or noise or disturbance to nearby occupiers; height, massing or siting, including through creating a sense of enclosure;
- ensure that proposals are not visually intrusive or have an overbearing impact as a result of their height, massing or siting, including through creating a sense of enclosure;
- ensure there is no harm to the reasonable enjoyment of the use of buildings, gardens and other spaces due to increases in traffic, servicing, parking, noise, light, disturbance, air pollution, odours or vibration or local micro-climatic effects.

Policy LP10 – Local Environmental Impacts, Pollution and Land Contamination

2.4.5 The Council will seek to ensure that local environmental impacts of all development proposals do not lead to detrimental effects on the health, safety and the amenity of existing and new users or occupiers of the development site, or the surrounding land. These potential impacts can include, but are not limited to, air pollution, noise and vibration, light pollution, odours and fumes, solar glare and solar dazzle as well as land contamination.

Policy LP15 – Biodiversity

2.4.6 The Council will protect and enhance the borough's biodiversity, in particular, but not exclusively, the sites designated for their biodiversity and nature conservation value, including the connectivity between habitats. This will be achieved by:

- protecting biodiversity in, and adjacent to, the borough's designated sites for biodiversity and nature conservation importance (including buffer zones), as well as other existing habitats and features of biodiversity value;
- supporting enhancements to biodiversity;
- incorporating and creating new habitats or biodiversity features, including trees, into development sites and into the design of buildings themselves where appropriate; major developments are required to deliver net gain for biodiversity, through incorporation of ecological enhancements, wherever possible;
- ensuring new biodiversity features or habitats connect to the wider ecological and green infrastructure networks and complement surrounding habitats;
- enhancing wildlife corridors for the movement of species, including river corridors, where opportunities arise; and
- maximising the provision of soft landscaping, including trees, shrubs and other vegetation that support the borough-wide Biodiversity Action Plan.

Policy LP16 – Trees, Woodlands and Landscape

2.4.7 The Council will require the protection of existing trees and the provision of new trees, shrubs and other vegetation of landscape significance that complement existing, or create new, high quality green areas, which deliver amenity and biodiversity benefits.

Policy LP20 – Climate Change Adaptation

2.4.8 The Council will promote and encourage development to be fully resilient to the future impacts of climate change in order to minimise vulnerability of people and property.

2.4.9 New development, in their layout, design, construction, materials, landscaping and operation, should minimise the effects of overheating as well as minimise energy consumption in accordance with the cooling hierarchy.

Policy LP21 – Flood Risk and Sustainable Drainage

2.4.10 All developments should avoid, or minimise, contributing to all sources of flooding, including fluvial, tidal, surface water, groundwater and flooding from sewers, taking account of climate change and without increasing flood risk elsewhere.

Policy LP22 - Sustainable Design and Construction

2.4.11 Developments will be required to achieve the highest standards of sustainable design and construction in order to mitigate against climate change. Applicants will be required to comply with the following:

- Development of 1 dwelling unit or more, will be required to comply with the Sustainable Construction Checklist SPD.
- Development that results in a new residential dwelling, including conversions, change of use, and extensions that result in a new dwelling unit, will be required to incorporate water conservation measures to achieve maximum water consumption of 110 litres per person per day for homes (including an allowance of 5 litres or less per person per day for external water consumption).

2.4.12 Developers are required to incorporate measures to improve energy conservation and efficiency as well as contributions to renewable and low carbon energy generation. Proposed developments are required to meet the following minimum reductions in carbon dioxide emissions:

- All new major residential developments (10 units or more) should achieve zero carbon standards in line with London Plan policy.
- All other new residential buildings should achieve a 35% reduction.

2.4.13 This should be achieved by following the Energy Hierarchy.

2.4.14 The Council requires developments to contribute towards the Mayor of London target of 25% of heat and power to be generated through localised decentralised energy (DE) systems by 2025. The following will be required:

- All new development will be required to connect to existing DE networks where feasible.
- This also applies where a DE network is planned and expected to be operational within 5 years of the development being completed.
- Applicants are required to consider the installation of low, or preferably ultra-low, NOx boilers to reduce the amount of NOx emitted in the borough.
- Local opportunities to contribute towards decentralised energy supply from renewable and low-carbon technologies will be encouraged where appropriate.

Policy LP24 – Waste Management

2.4.15 The Council will ensure that waste is managed in accordance with the waste hierarchy, which is to reduce, reuse or recycle waste as close as possible to where it is produced. The Council will require the following:

- All developments are required to provide adequate refuse and recycling storage space and facilities, which allows for ease of collection and which residents and occupiers can easily access, in line with the guidance and advice set out in the Council's SPD on Refuse and Recycling Storage Requirements.

- All developments need to ensure that the management of waste, including the location and design of refuse and recycling facilities, is sensitively integrated within the overall design of the scheme, in accordance with policies on Local Character and Design.
- Development proposals, where appropriate, should make use of the rail and the waterway network for the transportation of construction, demolition and other waste. Development proposals in close proximity to the river should utilise the river for the transport of construction materials and waste where practicable.
- All major developments, and where appropriate developments that are likely to generate large amounts of waste, are required to produce site waste management plans to arrange for the efficient handling of construction, excavation and demolition waste and materials.

Policy LP30 – Health and Wellbeing

2.4.16 The Council promotes and supports healthy and active lifestyles and measures to reduce health inequalities. The Council will support development that results in a pattern of land uses and facilities that encourage:

- Sustainable modes of travel such as safe cycling routes, attractive walking routes and easy access to public transport to reduce car dependency.
- Access to green infrastructure, including river corridors, local open spaces as well as leisure, recreation and play facilities to encourage physical activity.
- Access to local community facilities, services and shops which encourage opportunities for social interaction and active living, as well as contributing to dementia-friendly environments.
- Access to local healthy food, for example, allotments and food growing spaces.
- Access to toilet facilities which are open to all in major developments where appropriate.
- An inclusive development layout and public realm that considers the needs of all, including the older population and disabled people.
- Active Design which encourages wellbeing and greater physical movement as part of everyday routines.

Policy LP44 – Sustainable Travel Choices

2.4.17 The Council will work in partnership to promote safe, sustainable and accessible transport solutions, which minimise the impacts of development including in relation to congestion, air pollution and carbon dioxide emissions, and maximise opportunities including for health benefits and providing access to services, facilities and employment.

Policy LP45 – Parking Standards and Servicing

2.4.18 The Council will require new development to make provision for the accommodation of vehicles in order to provide for the needs of the development while minimising the impact of car based travel including on the operation of the road network and local environment, and ensuring making the best use of land. It will achieve this by:

- Requiring new development to provide for car, cycle, 2 wheel and, where applicable, lorry parking and electric vehicle charging points. Opportunities to minimise car parking through its shared use will be encouraged;
- Resisting the provision of front garden car parking;
- Car free housing developments may be appropriate in locations with high public transport accessibility; and
- Managing the level of publicly available car parking to support the vitality and viability of town and local centres within the borough whilst limiting its impacts on the road network.

3. SUSTAINABLE ECONOMIC DEVELOPMENT

3.1.1 The first of the 'three pillars' of sustainable development is economic development. This is recognised within the NPPF, identifying the 'economic role' of the planning system to *"contribute to building a strong, responsive and competitive economy"*.

3.1.2 New residential developments, if located and designed appropriately, can contribute to the economic prosperity of the region / locality.

Short Term Employment Benefits

3.1.3 In the short term, the construction activities will generate employment opportunities for local skilled tradesmen and there is potential for building companies to develop the local skills base through apprenticeships and links with local construction training providers.

3.1.4 Where possible, the developer would recruit local contractors. There are also opportunities further down the construction supply chain, with the use of local suppliers for materials and equipment.

3.1.5 There are also opportunities further down the construction supply chain, with the use of local suppliers for materials and equipment. Training and employment opportunities will be secured as part of the planning obligations.

Long term economic benefits

3.1.6 In the longer term, there are a number of economic benefits, including expenditure in the local economy from new residents and the indirect support this provides to new employment and the vitality of Norcutt Road.

3.1.7 Direct economic benefits of new housing are generated from:

- Additional Council Tax revenue
- Increased expenditure by residents on goods and services in the local area which will provide positive effects upon the economic sustainability of the local economy.

4. SUSTAINABLE HEALTHY COMMUNITIES

4.1.1 The second of the 'three pillars' of sustainable development is social development. This is recognised in the NPPF, identifying the 'social role' of the planning system as "*supporting strong, vibrant and healthy communities, by providing the supply of housing required to meet the needs of present and future generations; and by creating a high quality built environment, with accessible local services that reflect the community's needs and support its health, social and cultural well-being"*.

Supply of Housing to Meet the Needs of Present and Future Generations

4.1.2 The NPPF outlines policies for local authorities to enable them to boost the local housing supply, widening opportunities for home ownership and creating sustainable, inclusive and mixed communities.

4.1.3 The scheme proposes the development of 15 residential units in an area with good accessibility and employment opportunities. This will allow for the accommodation of a variety of prospective residents who can either commute from Norcutt Road or can work locally in Twickenham.

Creating a High Quality Built Environment

4.1.4 The importance of high quality inclusive design is a key aspect of sustainable development. The Design and Access Statement prepared by Brookes Architects highlights the philosophy and objectives of the design proposal. In more detail, the aim of the project is to comprehensively redevelop the site and deliver the following benefits:

- Develop a proposal that responds to the local context;
- Provide high quality new homes with access to private and communal amenity spaces;
- Provide dual aspect units; the larger two and three bedroomed side units will benefit from the additional provision of secondary side aspect;
- Incorporate step-free access from the street and car parking;
- Design the flats in accordance with M4(2) Accessible and Adaptable Dwellings of the 2015 edition of Part M of the Building Regulations.

Safety and Security

4.1.5 The design layout has been undertaken to fully optimise the security and safety, in order for the scheme to uphold the Secure by Design Principles and Part Q of the Building Regulations. Key elements would include:

- Entrance doors to apartments are to be secure doorsets and are to be PAS 24 standard;
- Apartment entrance doors are to have a door viewer and a door chain or limiter;

- SBD rated post box units are to be provided;
- Bicycle and bin stores are to have a secure access such as a keypad or fob entry system;
- Ground floor and easily accessible windows are to meet the security standards;
- Frames will be mechanically fixed to the structure of the building; and
- The units served by the single communal entrance and core will be appropriate in terms of safety and security.

Accessibility to Local Services

4.1.6 The site has a good transport accessibility, located 800m from Twickenham Town Centre. Twickenham Town Centre provides access to a wide range of shops including banks, restaurants, takeaways and other facilities suitable for future residents.

4.1.7 There are seven bus services available within walking distance of the Site. The nearest bus stops to the Site are situated on The Twickenham Green approximately 550m distant and further bus stops are on Heath Road to the south east of the Site providing access to bus services. There is also the 681 (school bus) operating in the area.

4.1.8 There are plenty of local amenities in the surrounding area, including St Mary's University, within 1.3km to the south of the site, shops including a variety of supermarkets approximately 350m south east of the site and 500m south of the site. Moreover, GP services and restaurants are located within walking and cycling distance of the site.

4.1.9 There are several shops, services and facilities within the local area, which are all accessible safely on foot (by footways and safe crossing points). Where distances are considered too far to walk, bus routes provide an alternative travel mode. Cycling is also possible in the local area.

4.1.10 The analysis of the site context demonstrates that the site currently provides good connections to the local cycle network, enabling wider connection to town centres, commercial and retail centres as well as providing connection with other modes of transport for travel further afield.

Noise

4.1.11 A report undertaken by *RPS Consulting Services (RPS)* has been submitted as part of this planning application. This provides further details into noise modelling undertaken to ascertain whether there are any changes to noise levels associated with the development.

4.1.12 Baseline surveys were carried out to determine the existing levels of sound affecting the proposed development area. In addition to the long-term surveys, supplementary attended short-term surveys were carried out across the site.

4.1.13 The dominant source of sound affecting the site is distant road traffic noise (A3126 to the north, and Heath Road to the south, as well as the surrounding network of smaller roads), air traffic noise and railway noise from passing commuter trains on the adjacent railway line. The report was based upon the requirements of the Professional Practice Guidance on Planning and Noise (ProPG) and the SPD. Following this guidance, the report concluded that the residential development site will be at

medium risk. Through the appropriate design outlined in the report, the proposed development would be subject to satisfactory internal and external acoustic environments with respect to the ProPG, British Standard 8233:2014 'Guidance on Sound Insulation and Noise Reduction for Buildings' and the SPD.

4.1.14 The report concludes that the proposed development accords with national, regional and local planning policy. Therefore, it considers that there are no reasons, with regards to noise, why planning permission should not be granted for the proposed development.

Air Quality

4.1.15 An Air Quality Assessment has been undertaken by *RPS* for the proposed development and submitted as part of the planning application. The report details the existing air quality at the proposed location and the impacts of the construction, demolition and operational activities on the local air quality.

4.1.16 The site is located within a designated Air Quality Management Area (AQMA) due to elevated concentrations of nitrogen dioxide (NO_2) and particulate matter (PM_{10}) attributable to road traffic emissions.

4.1.17 During the construction phase it was found that the most important consideration affecting local air quality is likely to be dust. Mitigation measures including temporary soiling of surfaces, particularly windows, cars and laundry can reduce the risk of adverse dust affecting the local air quality.

4.1.18 It was found that the operational phase of the development will generate fewer vehicle movements using the local network and the site's existing use and is therefore expected to be beneficial in terms of air quality impacts on the surrounding area. Detailed atmospheric modelling of the sites residential use found that predicted pollutant concentration levels will be well within the relevant objectives. Therefore, the operational air quality effects are considered to be 'not significant' overall.

4.1.19 The Air Quality Neutral Calculation report quantifies the emissions of atmospheric pollutants from the development at source and compares the emissions with official benchmark levels that define neutrality. In contrast, the report considers the impacts of the proposal on ambient air quality levels by comparing predicted levels with Air Quality Strategy objectives and EU limits. The report concludes that the total transport emissions exceed the relevant benchmarks during the operational phase. However, as the emission associated with the proposed use are likely to be lower than emissions associated with the site's existing use, the report concludes that no mitigation is considered necessary.

Daylight & Sunlight Assessment

4.1.20 A Daylight & Sunlight Assessment has been undertaken by *Lumina London Ltd.* in accordance with the standards in the Building Research Establishment (BRE) Guidelines "Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice" 2011. The report has been undertaken in order to analyse the effect the proposed development will have on the daylight and sunlight amenity to the neighbouring residential properties.

4.1.21 The daylight analysis results show that there will be no perceivable difference in the levels of Daylight that will be received by, and within, the habitable rooms in Alcott House as a result of the

proposed development, when it is compared against the results obtained for the approved Student Housing Scheme.

4.1.22 Regarding daylighting to the proposed habitable rooms, the bedrooms and living rooms will achieve ADF values in excess of 1%df for Bedrooms and 1.5% for Living Rooms and therefore will meet the Design Standards for Daylight for New-Build Dwellings taken from the British Standard Code of Practice, BS 8206 Part 2. Therefore, the future occupants will enjoy good levels of internal Daylight Amenity.

5. CONSERVING AND ENHANCING THE NATURAL AND HISTORIC ENVIRONMENT

5.1.1 The third of the 'three pillars' of sustainable development is the protection of the environment and sustainable use of existing resources. This is recognised within the twelve core principles of the NPPF, which includes conservation and enhancement of the natural environment.

5.1.2 Biodiversity encompasses all living things and plays an important function within urban areas; providing pleasant areas of amenity, whilst maintaining the ecological function of natural systems. The objectives outlined in the NPPF and the government's Biodiversity 2020 strategy reflect the government's commitment to halt the overall decline in biodiversity and recognise the wider benefit of ecosystem services.

Conserving and enhancing the natural environment and landscape

5.1.3 The Design and Access Statement confirms that the site has a very little ecological value with only small areas of grass appearing within the areas of broken concrete hardstanding to the north side of the existing building, immediately adjacent to the Network Rail boundary.

5.1.4 The proposal includes the removal of the existing (limited) planting from the north west corner of the site and its replacement with a biodiverse (brown) roof, landscaped communal garden areas to the southern building frontage and general site perimeter planting.

5.1.5 The site's ecological diversity will be enhanced with the provision of a bio-intense (brown) roof to the top floor of the building in line with the London Plan requirements.

5.1.6 In addition, the space between the proposal and the adjacent apartment building is to be retained as mainly communal garden space. The north west part of this space will be dedicated to the larger three bedroomed wheelchair accessible standard unit as a private garden terrace. The perimeter of the remaining space, including that adjacent to the adjoining apartments and the grade level car parking, is to be bordered with new hedge planting.

5.1.7 The central garden area will be laid to lawn with the inclusion of two central flowering garden trees. In addition, perimeter mixed shrub planting is proposed to all site boundaries. Finally, the report confirms that the landscaping will improve both the outlook of the proposed scheme and the adjacent flats' with the central flowering garden trees providing additional screening between the units.

Ground Contamination

5.1.8 A Phase 1 Preliminary Environmental Risk Assessment has been produced by *RPS* to provide an assessment of potential sources of contamination at the site, review the environmental setting to assess the sensitivity of the surrounding area to contamination/pollution and produce an outline Conceptual Site Model (CSM) detailing how any contamination may impact the identified receptors via pollutant linkages.

5.1.9 The report refers to a previous site investigation undertaken by *Risk Management* in February 2014 (ref: RML 5294). The investigation identified lead and speciated polycyclic aromatic hydrocarbons (PAH) at concentrations above their respective generic assessment criteria (GAC) in samples of Made Ground collected from the site. Following a review of this report, RPS has identified a number of significant data gaps.

5.1.10 The report confirms that current and historical potentially contaminative land uses have been identified on site and in the surrounding area. There is the potential for ground gas and volatile contaminants of concern in soil and/or groundwater (if present) beneath the site to impact future site users via the inhalation pathway in indoor areas.

5.1.11 The report concludes that the outline CSM produced upon completion of the Phase 1 assessment has identified a number of potential pollutant linkages that may become active upon the redevelopment of the site.

5.1.12 Although a site investigation was undertaken in 2014 and since a number of significant data gaps have been identified by RPS, it has been recommended that a Supplementary Phase 2 Environmental Site Investigation is carried out at the site, prior to construction works commencing and this can be addressed through an appropriately worded condition. Where necessary, the assessment will outline any recommendations necessary in order to remediate or mitigate any identified environmental risks.

6. LOW CARBON AND CLIMATE CHANGE

6.1.1 Climate change is widely regarded as the most pressing challenge for sustainable development. The UK Sustainable Development Strategy, 'Securing the Future' recognises climate change and energy as a priority area for UK's sustainable development. The Government has created a legally binding framework for reducing CO_2 emissions through to 2050 via provisions made within 'the Climate Change Act' (2008). This establishes a specific duty on the Secretary of State to ensure that greenhouse gas emissions are reduced by at least 80% by that date.

6.1.2 However, not only is it important to consider how a proposed development can mitigate climate change by reducing greenhouse gas emissions, it is also fundamental to ensure that the development is resilient to potential future changes in climatic conditions.

Carbon Dioxide Emissions during Construction

6.1.3 To comply with the planning policy, during construction, best working practices should be followed and will be set out in the Construction Environment Plan (CEMP) for the proposed development. This would ensure that where possible, construction activities with the potential to generate carbon emissions would be appropriately managed and undertaken to minimise the production of carbon dioxide emissions and ensure the efficient use of fuel could be set out through the following ways:

- Vehicles used in road deliveries of materials, equipment and waste arisings on and off-site would be loaded to full capacity to minimise the number of vehicle journeys associated with the transport of these items;
- All machinery and plant would be efficiently procured to adhere with emissions standards and would be maintained to be fuel efficient;
- When not in use vehicles and plant machinery involved in site operations would be switched off to further reduce fuel consumption;
- All construction staff will be appropriately trained to operate plant and machinery effectively. Plant which is operated efficiently will ultimately burn less fuel and produce less carbon emissions;
- Where possible, local waste management facilities would be used to dispose of all waste arisings; and
- To minimise the use of electricity, equipment and machinery requiring electricity will only be switched on when required for use. During construction, procedures would also be implemented to ensure that staff adheres to good energy management practices when in staff areas, through turning off all lights, any computers and heating/air conditioning units when leaving buildings.

6.1.4 Consideration will also be given at detailed design to specifying construction materials with a low embodied energy (i.e. low levels of energy used during their manufacture), and to methods of minimising energy use during construction.

Carbon Dioxide Emissions During Operation

6.1.5 Where feasible the development will incorporate holistic low carbon energy solutions to the housing mix, considering natural daylighting, passive solar design and low energy lighting. An energy report has been produced by RPS.

6.1.6 In line with the Mayor's Energy Hierarchy 'be lean, be clean, be green' principles a passive design measures will be incorporated into the building envelope to reduce energy demand. To maximise the energy efficiency of the development and thus reduce the energy demands, the following design principles were incorporated:

- Improved building fabric elements and openings over Building Regulations minimum requirements.
- Reduced air permeability over minimum required standards.
- Efficient space and water heating services, ventilation and control systems.
- Energy efficient lighting.

Figure 3: The three stages of the Energy Hierarchy

6.1.7 After reducing the primary energy demand within the development with passive measures and ensuring that the energy used within the development is used efficiently, the possibility of installing Low or Zero Carbon (LZC) Technologies was investigated. The installation of 17.3kWp of photovoltaics has been proposed on the flat roof of the building.

6.1.8 It has been confirmed that a site wide 39.8% DER/TER improvement on the baseline CO_2 emissions and 20% from renewables will be achieved, thus meeting the Council's energy target of 35% reduction in regulated CO_2 emissions in line with the London Plan. This approach will ensure that that Building Regulations Part L1A 2013, London Plan 2018 and local authority planning requirements will be met with respect to energy and CO_2 reduction.

Thermal Comfort and Climate Change

6.1.9 The detailed design of the buildings will consider the issue of Thermal Comfort and the impact of higher summer temperatures. Appropriate design features will be incorporated to minimise any detrimental effects and reduce the risk of overheating.

6.1.10 New development proposals should demonstrate how the design, materials, construction and operation of the development would minimise overheating and also meet its cooling needs. Therefore, all new developments should also be designed to avoid the need for energy intensive air conditioning systems as much as possible, in accordance with the Cooling Hierarchy.

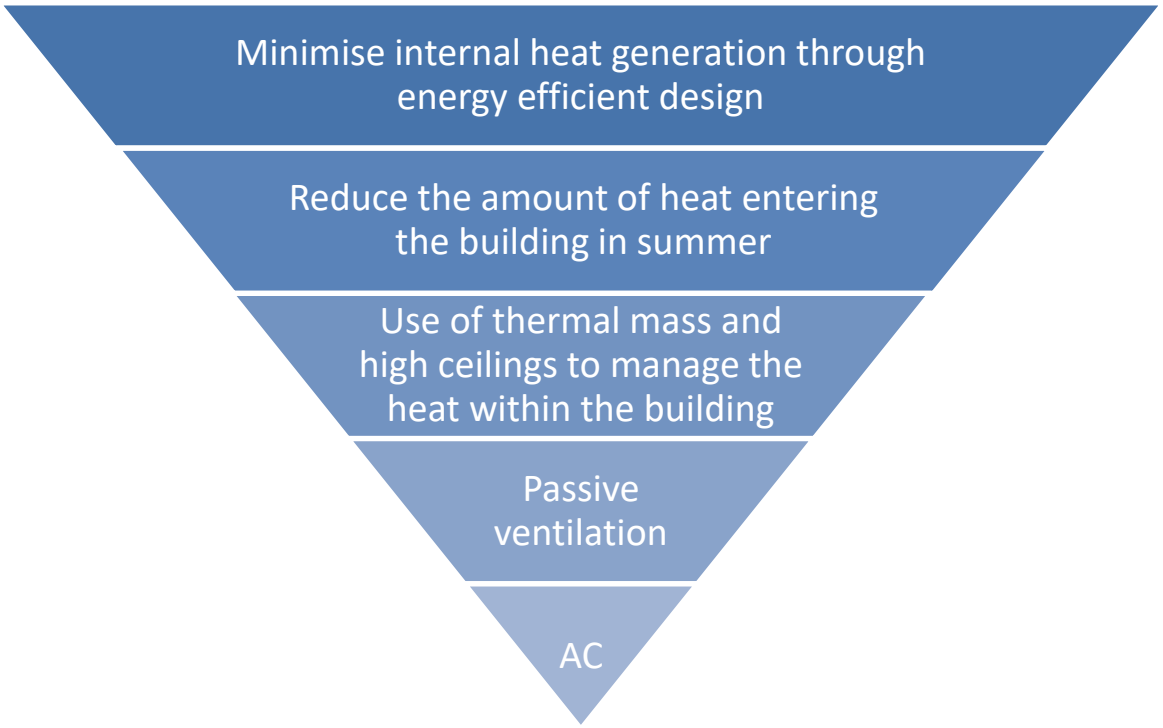

Figure 4: Cooling Hierarchy

6.1.11 A detailed overheating assessment was carried out by *RPS* and it is part of this planning application. The assessment concludes that all living rooms, kitchens and bedrooms within the assessed dwelling types pass the mandatory criteria of CIBSE TM59 criteria. Although it is not mandatory further analysis was carried out to communal corridors and to all dwelling types for warmer and future weather data, in accordance to CIBSE TM49.

6.1.12 This was achieved through the inclusion of the following measures:

- Passive Design
  - Avoid designing large rooms with small openings.
  - Use materials with high surface reflectivity to the sun's radiation.
  - Use carefully designed shading measures, including balconies, internal or external blinds, trees and vegetation.

    - Allow for high insulation standards, exceeding Building Regulations requirements, for all building fabric elements and openings
    - Minimise internal heat gains by using low energy equipment, including energy efficient lighting.
    - Specify High efficiency appliances.
- Passive ventilation
    - Design the building and its internal layout to enable passive ventilation, including openable windows.
    - Allow for cross ventilation, where possible.
- Mechanical ventilation
    - High efficiency Mechanical Ventilation with Heat Recovery (MVHR) will be provided for the dwellings.
    - Extract fans for the kitchens & bathrooms.

Drainage and Flood Risk

6.1.13 A Flood Risk Assessment has been undertaken by *RPS* for the proposed development and submitted as part of the planning application. The aim of the report is to outline the potential for the site to be impacted by flooding, the impacts of the proposed development on flooding in the vicinity of the site, and the proposed measures which could be incorporated into the development to mitigate the identified risk.

6.1.14 The assessment confirms the site is located within Flood Zone 1, classified as being at low risk and defined as having a less than 1 in 1,000 annual probability of fluvial and tidal flooding. The site has been identified to be in an area of 'very low' surface water flood risk.

6.1.15 In order to meet the surface water runoff requirements of the NPPF, Non-statutory Technical Standards for SuDS and the London Plan, underground attenuation will be provided to achieve a 1l/s discharge rate.

6.1.16 It has been demonstrated that the development meets the Sequential and Exception Tests imposed under the NPPF.

6.1.17 Overall, the report concludes that the development would be safe from flooding, without increasing flood risk elsewhere, and that a positive reduction in flood risk would be achieved through the implementation of underground attenuation.

7. SUSTAINABLE TRANSPORT

7.1.1 In order to integrate sustainable travel within the proposed development, the NPPF encourages local authorities to support *"a pattern of development which, where reasonable to do so, facilitates the use of sustainable modes of transport'"* and *"gives priority to pedestrian and cycle movements with access to high quality public transport facilities"*. The framework recognises that transport policies have an important role to play in facilitating wider sustainability and health objectives.

Encouraging Sustainable Transport Services

7.1.2 A Transport Assessment has been undertaken for the development by *YES Engineering Group Ltd* and submitted as part of this planning application. The development is located on the northern end of Norcutt Road. Railways lines are situated to the north, an electrical sub-station to the east, Gregg's bakery deport to the west and a block of flats to the south.

7.1.3 The site has a Public Transport Accessibility Level (PTAL) rating of 2 (good accessibility) meaning that the potential occupants of the development will have good access to public transport facilities. There are seven bus services, Twickenham railway station and Strawberry Hill railway station within walking distance of the site, providing frequent and reliable services to the surrounding areas including a local Rail Station. The public transport provision, along with the secure and covered cycle parking within the site will encourage residents to use an alternative mode to the private car.

7.1.4 A trip generation assessment has been undertaken to estimate the potential impact of the proposed development. The net trip generation assessment indicates that as a result of the proposal an increase of just 1 car movement in the morning peak hour and an extra 1 car movement in the evening peak hour. There is anticipated to be a reduction of goods vehicle trip, which will be of benefit.

7.1.5 The report considers that the increase in traffic flow is so limited that this could be readily accommodated on the local road network without material impact on the operation or capacity. Furthermore, the assessment indicates that the forecast traffic flows and profiles of arrival and departure, plus the availability of on-site parking should ensure that there would be no material impact on the parking provision.

7.1.6 There is a good existing pedestrian around the site. On the southern part of Norcutt Road there are footways on both sides of the road and a shared surface at the northern end.

7.1.7 The site is located in a Controlled Parking Zone (CPZ) which operates Monday to Saturday 8:30am to 6:30pm. Parking surveys were undertaken in accordance with the Richmond Parking Survey Methodology to establish on-street parking stress on Norcutt Road and Edwin Road. The results indicate that from the 58 on-street parking spaces on Norcutt Road and Edwin Road, just 3 spaces were available during the first survey and only 4 during the second survey, leading to a parking stress of 101.9% and 100% respectively.

7.1.8 Twelve car parking spaces will be provided on site as part of the proposed development in line with local census data and London Plan parking standards. One of which will be a Blue Badge space on-site and this will be closest to the main entrance.

7.1.9 Cycle parking (28 cycle spaces and 2 visitor spaces) will be provided in a secure location to the rear of the Site on the ground floor level in accordance with the new draft London Plan (2018) cycle parking standards. Access will be provided via Norcutt Road.

7.1.10 The report concludes that there is no highway or transportation reasons to object to the proposed development.

7.1.11 A travel plan has also been produced and accompanies the Transport Assessment in support of the planning application for the proposed development.

8. USE OF NATURAL RESOURCES AND MINIMISING WASTE

8.1.1 Activities undertaken onsite from the concept stage through to final completion can have an impact on the use of natural resources and production of waste associated with the development. This section highlights how the development will attempt to reduce the use of natural resources through material procurement, potential re-use or recycling of materials, water use and waste minimisation.

Materials Use

8.1.2 The materials specification will detail, where possible, materials that are A or A+ rated under BRE's Green Guide, in order to select resources with lower environmental impacts throughout their lifecycle. In addition, all timber for the site will be responsibly sourced and selected from Forest Stewardship Council (FSC) sources.

8.1.3 Materials used within the building fabric have a high impact on the energy performance of the development. Therefore, materials will be selected with good thermal performance properties. All materials used on site will aim to have low conductivity values in order to achieve high insulation standards for all building elements. In addition, emphasis will be given to thermal mass of all materials used in order to achieve high thermal comfort levels.

Water Use

8.1.4 The construction phase of the development has the potential to use a large amount of water. Whilst much of the water is essential for building activities, and cannot be reduced, water would be monitored to ensure that it was not wasted unnecessarily. A Construction Environmental Management Plan (CEMP) will be produced by the contractor and will include proposals for monitoring water use during construction and include procedures for ensuring that leakages are minimised across the construction site.

8.1.5 The design of the site would aim to reduce potable water used within the development, ensuring compliance with Building Regulations, through the specification of water efficient sanitary fittings such as low flush WC's and flow restrictors where it is feasible to do so. These will include:

- WCs: 4 (partial) by 6 (full flush volume)
- Wash hand basin taps: 5 l/min
- Kitchen taps: 5 l/min
- Showers: 11 l/min
- Baths: 200 litres capacity to overflow
- Dishwashers: 1.25 l/place setting
- Washing machine: 8.17 litres / kg

8.1.6 During the operational phase of the proposed development, water use would be monitored.

Minimising Waste

8.1.7 All products and services have environmental impacts, from the extraction of raw materials for production to manufacture, distribution, use and disposal. Following the Waste Hierarchy will lead to the most resource-efficient and environmentally sound choice on waste management.

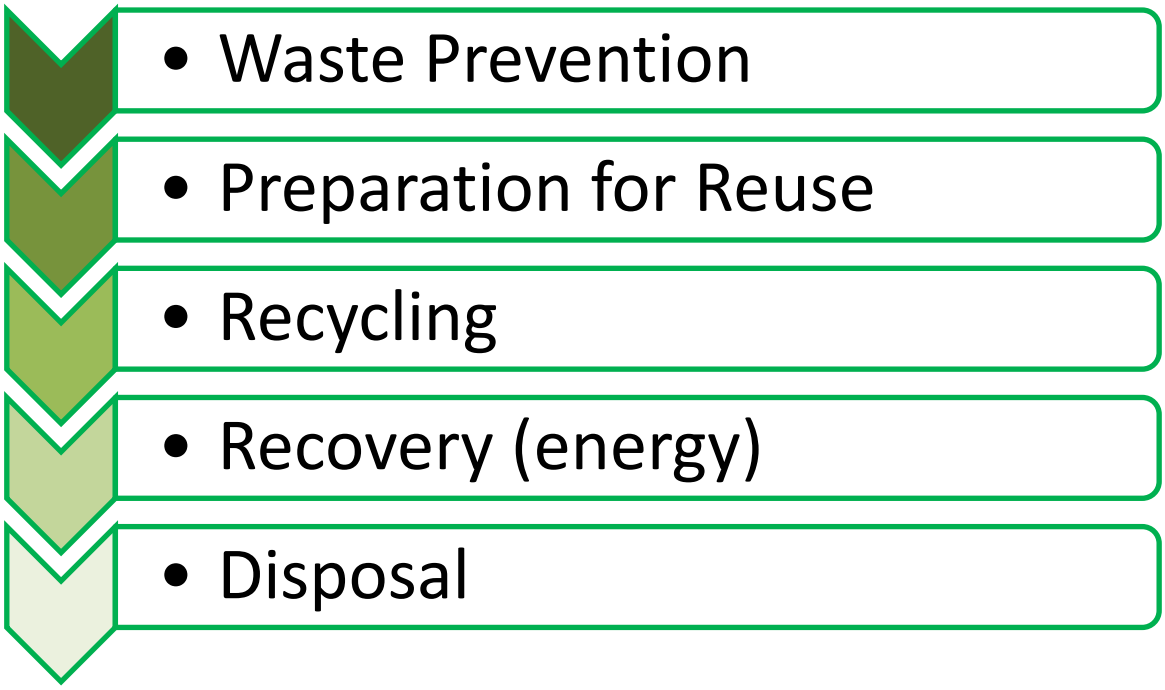

Figure 5: Waste Hierarchy (most favourable option on top)

8.1.8 During the construction phase of the development low levels of waste production will be targeted. A Site Waste Management Plan (SWMP) will be developed and implemented during the construction phase in order to meet local authority waste requirements. The SWMP will contain a benchmark for resource efficiency, i.e. less than 6.5 tonnes of construction waste per 100m^2 of gross internal floor area. The SWMP will detail how methods / practices on site will be in accordance with the Waste Hierarchy, which indicates an order of preference for actions to reduce and manage waste.

8.1.9 The amount of non-hazardous waste generated on site by the proposed development would be minimised in line with best practice levels. Waste would be appropriately disposed of within the correct landfill facility. The SWMP would additionally outline the procedures to follow for the appropriate removal and disposal of any hazardous waste. A target for the diversion of construction waste from landfill will also be set.

8.1.10 Where possible on site, the recycling and re-use of the existing building and construction materials will be considered in order to minimise construction and demolition waste associated with the proposed development.

8.1.11 In addition, consideration has been given to the operational waste of the site, hence waste facilities will be provided, in line with the guidance and advice set out in the Council's SPD on Refuse and Recycling Storage Requirements. The site will be designed to provide appropriate waste and recycling

segregation storage facilities on the ground floor at the front of the building for the convenience of collection.

9. MANAGEMENT

9.1.1 Early stakeholder engagement ensures that key project stakeholders are identified and engaged to determine end user requirements and operational adaptability, allowing them to be taken into account throughout the project. Adopting integrated design and engagement processes has been demonstrated to result in improved operational performance, greater project efficiencies, and reduced risks to performance, time and cost. Following an integrated design process, maximises the opportunities for performance and minimises risks of design conflicts appearing later on in a project when risks to time and cost are higher.

Sustainability Champion

9.1.2 For Norcutt Road, a commitment to delivering a development that incorporates sustainability aspects is demonstrated through the appointment of sustainability consultants, RPS, early with the design stage process. Their remit is to provide sustainability advice on a holistic scale for the development, through best practice and where feasible, by setting exemplary standards.

Responsible Construction Management

9.1.3 Through effective management of the construction activities, any short-term disruption to the existing community, including local residents would be minimised. The lead contractor for the construction of the scheme would subscribe to the Considerate Constructors Scheme (CCS) and aim to achieve a minimum score of 35 under CCS.

9.1.4 The lead contractor will also introduce measures for reducing the social and environmental impact of their activities. Measure could include:

- Construction operations would be restricted to core working hours of the industry to minimise the potential disturbance impacts upon the public through associated noise, vibration and dust emissions and increased traffic;
- Best practice measures to protect the water quality and all natural water sources on and close to the site. Monitoring of water quality would also be undertaken;
- Appropriate storage of construction materials and chemicals alongside a spillage response plan to minimise potential pollution incidents;
- Deliveries of construction materials and equipment would access the site along routes as agreed with the Local Highway's Agency to minimise disruption upon road users; and
- Traffic management measures would be implemented by the contractor to ensure traffic is appropriately managed during construction and that where possible potential impacts on other users of the local highway network and the local community are minimised.

General Resource Management

9.1.5 The development will seek to provide water and energy metering (during both construction and operation) to enable the appropriate level of monitoring and management of these resources. During the construction phase, this will be achieved through the setting of projected targets, reporting and reviewing of results.

9.1.6 The development will seek to encourage building users to develop a water and energy management system to minimise the use of these resources (throughout building occupation) and to improve general environmental management. As part of this, a Home User Guide will be produced covering topics such as:

- Building Services Information.
- Emergency Information.
- Energy and Environmental Strategy.
- Water Use.
- Transport Facilities.
- Materials and Waste Policy.
- Reporting Provision.
- Training.
- Links and References.

10. CONCLUSIONS

10.1.1 Sustainability is a broad concept, covering a wide range of environmental, social and economic considerations (known as the three pillars of sustainable development or the triple bottom line). Sustainable design and construction principles have been considered for this scheme from its conception and many of the issues referenced within this report have been considered separately and in greater depth, within further technical reports.

10.1.2 This Sustainability Statement has been prepared to describe the key sustainability principles incorporated in the design and those principles that will be undertaken during construction. Consideration has been given to the three pillars of sustainable development, relevant national and local planning policies demonstrating how the proposals contribute to the delivery of sustainable development.

10.1.3 As set out in this report, the proposed development has been designed to take account of a number of fundamental design concepts to create a sustainable development. This report demonstrates that the principles of good sustainable design have been incorporated in the development and good sustainable practices would be followed during the construction phase. These include among others:

- A commitment that the main contractor on site will sign up to the Considerate Constructor's scheme (or equivalent) and that the score achieved will be recognised as being above best practice;
- The maximisation of daylight to reduce the demand on artificial lighting and create a healthy internal environment for the occupants;
- Provision of adequate cycle storage facilities and car parking spaces on site to promote the use of sustainable transport modes;
- The sourcing of the major building elements and materials from responsible local sources where practical;
- Specification of materials rated as A or above under the Green Guide and use of responsibly sourced timber;
- Minimisation of construction waste stream quantities and targets for diversion of non-hazardous construction waste from landfill;
- Implementation of a Site Waste Management Plan on site;
- Minimisation of the generation of construction waste and of the waste that is generated, ensuring a high percentage is diverted from landfill;
- Reduction of water use on site through the specification of water saving sanitary items;
- Effective surface water management;
- Reduction of CO_2 emissions, through the incorporation of high insulation standards, very efficient building services and photovoltaic panels.
- Incorporation of energy efficient internal and external lighting.

10.1.4 It can therefore be concluded that the proposed sustainability measures meet the London Borough of Richmond Upon Thames planning policy requirements at national, regional and local levels. These have been considered at an early stage of the development process, which will enhance the effectiveness of the measures proposed.

10.1.5 The sustainability principles detailed within this statement cover aspects from design to construction and operation of the site and ensure that best practice procedures have been incorporated.

Appendix A Richmond Council Sustainability Checklist