



Client: BRT Properties (Kent) Ltd

Architects: Planning Potential

Site: 2 Vale Road,
Northfleet,
Gravesend,
Kent,
DA11 8BZ

Proposals: Construction of a block of ten new flats over three storeys

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Report Details:

Assessor	Checked	Date	Project
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This document has been prepared solely as a Sustainable Statement for BRT Properties (Kent) Ltd. Base Energy Services Ltd. accepts no responsibility or liability for any use that is made of this document other than by the Client for the purposes for which it was originally commissioned and prepared.

1 - Introduction

This Sustainability Statement (SS) has been prepared in support of the planning application for the construction of ten new flats over three storeys on land to 2 Vale Road, Northfleet, Gravesend, Kent.

2 - Planning Policies

Local Planning Policy

Gravesham - Sustainability within Planning

Policy CS18: Climate change which is to take account of the following main issues of which need to be considered for any development proposals.

Flood risk, Water quality, Sustainable drainage and surface water run-off, Water demand management, Carbon reduction

Furthermore, the Sustainability statement will cover other key areas associate with sustainable developments as in the National Sustainability Guidelines.

National Sustainability Guidelines

In line with the National Policy the below principals have been used to guide the proposed development.

Strategic

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

Planning Decisions

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

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

- a** minimising carbon dioxide emissions across the site, including the building and services (such as heating and cooling systems)
- b** avoiding internal overheating and contributing to the urban heat island effect
- c** efficient use of natural resources (including water), including making the most of natural systems both within and around buildings
- d** minimising pollution (including noise, air and urban runoff)
- e** minimising the generation of waste and maximising reuse or recycling
- f** avoiding impacts from natural hazards (including flooding)
- g** ensuring developments are comfortable and secure for users, including avoiding the creation of adverse local climatic conditions
- h** securing sustainable procurement of materials, using local supplies where feasible, and
- i** promoting and protecting biodiversity and green infrastructure.

An Energy Statement has been carried out for the proposed development, however no carbon target has been set by planning. The Energy statement is to show the feasibility of how energy efficiency measures could be applied and to review potential low or zero carbon technologies.

4 – Sustainability Statement

Energy	
Issue	Compliance
Energy Demand	Throughout the proposed new development to 2 Vale Road, Gravesend, best efforts have been made to reduce the need for energy and reduce heat demand. An Energy statement has been carried out on the dwellings to show how they can be improved beyond Part L1a 2013. As the drawings supplied are at a planning stage, assumptions have been made about the construction, heating and ventilation. Therefore, energy strategy which have been used, which should be used as a guide to design the dwellings.
Maximise use of passive energy	Through the use of passive and active design measures the design team have enabled the development to require less energy through the use of optimised insulation, cross ventilation, improved window u-values, higher air tightness, reduced cold bridging and light coloured materials.
Increased Energy Efficiency	An Energy Statement is required for this site; however, no carbon target has been set by planning. The Energy statement is to show the feasibility of how energy efficiency measures could be applied and to review potential low or zero carbon technologies. Part L SAP calculations have been carried out for the proposed dwellings which show the dwellings can go beyond building regulations Part L1a 2013. The dwellings will aim to incorporate the following: - • Low fabric element u-values, External wall u-value 0.18W/m²k, Floor 0.13W/m²k, Roof 0.13W/m²k • High efficiency gas heating system • Time and temperature zone control, weather compensator

	• Heat recovery system • Air tightness design of 4 m3/hm2 (@50Pa) This has shown to be an improvement over building regulations Part L1a 2013 baseline, by achieving a potential of 15% improvement in CO2 emissions, which equates to a total saving of 2096Kg/year CO2 for the development.
Renewable Energy Sources	The feasibility of several renewable technologies has been reviewed and shown that only some of these are feasible. There could be the potential for Ground Source Heat Pump and Biomass heating, with other technologies such as Solar PV not being feasible due to the dormer roof layout. However, an improvement over Part L has been demonstrated via fabric first approach and improved heating controls and a heat recovery system, such as MVHR. See Energy Statement for further details.
Responsible Travel Provisions	The site is in an urban area and therefore has good public transport with numerous bus stations to the south of the site. There are two bus nodes within 300m distance and several bus nodes to the north of the site within 600m distance. Nearest train station is Northfleet which is approximately 1500m away. There will also be cycle storage provided for the occupiers to promote healthier travel methods and reduce CO2 emissions from vehicles, with 11 cycle stands in the garden sheds of the dwellings. There are amenities to the north of the site, with a food store approximately 500m distance. There are two schools within walking distance of the development.

<u>Water</u>	
Issue	Compliance
Water Saving Measures	Initial advice from the design team suggests the water saving measures can be incorporated in order to reduce water usage. It has been identified that there is the opportunity to have low flow rates and dual flush toilets.
Water Consumption Targets	Water efficient fixtures, fittings and appliances will be provided to ensure that internal water use targets are achieved to go beyond the national target and aim for 110 L/person/day. This would be based on having the following: - Tap flow rate of 5L/min Shower 10 L/min Bath capacity of 175L Dual flush toilet In comparison, Building Regulations Approved Document G requires internal water use to be at 125litres/person/day or less.
Reusing Water	A preliminary feasibility study of the potential to include rainwater harvesting should be carried out; given the nature of the development however it may be considered not feasible to install a rainwater harvesting system. Further assessment with a drainage engineer would be needed. Rainwater butts will be installed and to be designed into the dwellings for the watering of the external rear garden.

Metering	A water meter could be provided. During detailed design, consideration will be given to the provision of digital meters with connectivity to a central building management / billing system, rather than standard analogue meters.
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Materials and Waste

Issue	Compliance
Design Stage Choosing materials that minimise the use of resources are sustainably sourced, do not cause harm to health and are robust.	The contractor and developer will need to design and choose materials that will influence the construction process and the embodied carbon of the development by, specifying materials using the Building Research Establishment's Green Guide Specification. Ensuring that materials are responsibly sourced, sourcing materials from local sources, minimising the harmful effects of some materials on human health, ensuring that specified materials are robust and sensitive to the building type and age. It is intended that insulation materials will have an Ozone Depletion Potential (ODP) of zero, and a Global Warming Potential (GWP) of less than five. Where specified by the developer (e.g. low VOC paint), finishes and other materials will not contain or emit toxic substances. Where timber is installed it will be 100% legally sourced and FSC certified.
Construction Stage Management of materials resulting from demolition through the waste hierarchy	The Contractor will need to reduce waste during the construction phase of the development via the hierarchy of, Reduce, Reuse (prioritising on-site reuse of demolition materials, followed by offsite reuse), Recycle (prioritising on-site recycling, then off-site recycling), Resource recovery (for energy generation processes – fuels, heat and power); and Disposal.

	A Site Waste Management Plan (SWMP) will be prepared and incorporate non-hazardous waste, demolition and excavation waste if applicable. The BRE Smartwaste tool can be used as an easy tool by contractors.
Storage for Recyclables & Waste	Sufficient internal and external space will be provided to facilitate recycling and composting and the good management of waste for the building occupiers. The dwelling/s will be fitted with internal waste storage facilities in the kitchen for the segregation of recyclable materials, in compliance with BS5096.

Nature Conservation and Biodiversity

Issue	Compliance
Protecting Species Promoting the Protection and Planting of Trees	The existing site is mainly hardstanding and is considered to be of low ecological value, any new garden areas should improve the ecological value of the site. Existing trees (and the space they require) have been considered throughout this development. It has not been necessary to remove any trees on site. However, there are features of ecological significance (Trees) next to the construction zone to the rear of the site. These will have to be adequately protected. Whilst measures to enhance the ecological potential of the site will be investigated where possible, opportunities to enhance the ecological value of the site are possible.

Designing development proposals	The green space has been increase compared to the previous site, with new gardens areas. Efforts will be made to improve the ecological value of the site with planting of native plant species and bird boxes relevant to the native birds in the area. Developers should adhere to the following hierarchy when considering biodiversity on their development by; avoiding adverse impact to the biodiversity interest, minimise impact, seek mitigation, and seek appropriate compensation where the benefits of the proposal clearly outweigh the biodiversity impacts
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<u>Increased Green Cover and Trees</u>	
Issue	Compliance
Promoting Urban Greening	To help the city to adapt to future climates. Green infrastructure is a network of mainly vegetated spaces and other environmental features which can promote urban cooling, reduced runoff, reduced energy demand, improved air quality, improved biodiversity, enhanced aesthetic and an increased health and well-being. The development will look to encompass ecological features such as native plant species and trees in the rear garden. The site doesn't allow for further greening.

Tackling Increased Temperatures and Drought

Issue	Compliance
Preventing Developments from Overheating	Overheating within buildings can result from either too much heat entering a building and not being released or too much heat being generated within a building and not being released. Therefore, if the internal environment becomes too hot it is likely occupiers will try to find a way to cool their environment. In order to continue minimising CO₂ emissions the design team have considered the internal comfort and implemented the following measures to reduce over heating, via cross ventilation, lightly colours external walls, and blinds. The dwellings are orientated where summer over heating should be reduced with less windows facing in a south direction.
Promoting Heat and Drought Resistant Planting	The UK's water demand is ever increasing. Therefore, it is essential that landscaping does not use excessive amounts of water. The developers will need to ensure the landscaping of the development does not require excessive amounts of water. Consideration will be given to including plant species which are heat and drought resistant. Advice from an ecologist should ideally be sought before any plant species are selected.

Flooding	
Issue	Compliance
Surface Water Flooding	Surface water flooding is the most likely form of flooding that development may be exposed to. Surface water flooding is likely to increase due to the anticipated increased intensity in rainfall events as well as the continuing urbanisation of Durham. There will be no increase in hard-standing areas and therefore should not be an in the peak rates and volumes of surface water runoff. Therefore, SUDs may not need to be considered, where a drainage engineer would need to be consulted.
Flooding Resilience and Resistance	The development site is located in a flood zone 1 area, which is low risk.
Flooding and Basement Developments	There is no basement planned for the proposed development.

Land Contamination

Issue	Compliance
Responsible Person/Organisation	The current site is not known to be contaminated, however as a result of previous uses this would need to be checked due to potential oil contamination from the vehicle works.
Bioremediation	Bioremediation to be confirmed.

Air Pollution

Issue	Compliance
Assessment Requirements	An air quality test should not need to be considered for the proposed development being in a residential area.
Construction and Demolition	To recognise and encourage construction-sites which are managed in an environmentally and socially considerate, responsible and accountable manner. For the proposed development, the contractor will comply with 'The Control of Dust and Emissions during Construction Demolition SPG'. Control measures will be implemented by the contractor on site to prevent air and dust pollution. An example of this could be using dust sheets on materials and skips, damping down in waste areas.

Design and Occupation	Ventilation pathways will need to be designed to reduce the build-up of air pollutants in the dwelling/s, through cross ventilation, and either naturally ventilated or mechanical ventilation. Where there is mechanical ventilation, exhaust flues will be positioned away from intake flues for fresh air. In naturally ventilated buildings/spaces: openable windows/ventilators are over 10m from sources of external pollution. There is no known requirement for mechanical ventilation for this development.

Noise	
Issue	Compliance
Sources of Noise	The proposed site is located with a railway line to the south of the development. The area is identified having a higher potential for noise pollution due to the railway line. Further consultation from an acoustic consultant may be required.
Mitigation of Noise Emitted by Development	Noise attenuation measures will be incorporated on-site where required, to ensure that any noise generated by equipment or services will not generate a source of noise pollution or negatively impact the surrounding area.

	The developer will comply with the council's construction noise rules which states what hours of the day the site can work within.
Mitigation of Noise impacts on the Development	For the occupiers of the dwellings, the specification of the partition walls, floors and external walls will be designed to go beyond Document E of the building regulations. The following should be followed, and best efforts will be made here were possible to avoid impacts of external noise to the occupiers. Locate noise sensitive areas/rooms away from the parts of the site most exposed to noises, create setbacks, design the building so its shape and orientation reflect noise and protect the most sensitive uses, position non-residential uses closer to the noise source in mixed use developments, design in lobbies, balconies, winter gardens and dual facades; and carefully locate noise generating equipment for the building such as plant and services away from sensitive uses.

<u>Light Pollution</u>	
Issue	Compliance
Type of Light Pollution	Light pollution comprises any adverse effect of lighting for building occupiers, and for this development includes; Glare, 'Light Trespass' and 'Sky Glow' and Poor Artificial Lighting
Potential Effects	Light pollution can have a detrimental impact on the quality of life of residents; by significantly changing the character of the locality, altering wildlife and ecological patterns and wasting energy

Lighting Design to Minimise Impacts	To minimise obtrusive light where applicable, lights will be designed to be used only in appropriate areas, and that upward lighting is minimised, this will help to reduce light pollution and effect to neighbours. Where there is external lighting, it will have to be designed to the following standards. First to be energy efficient going beyond Part L of the building regulations, with the aim to achieve no less than 60 lumens per circuit watt. Second all external lights will be automatically controlled for the prevention of operation during daylight hours and presence detection in areas of intermitted pedestrian traffic. The ILP Guidance for the reduction of obtrusive light, 2001 will be used to design the lighting strategy. All external lighting (except for safety and security lighting) can be automatically switched off between 23:00 and 07:00. If safety or security lighting is provided and will be used between 23:00 and 07:00, this part of the lighting system complies with the lower levels of lighting recommended during these hours in Table 2 of the ILP's Guidance notes. Illuminated advertisements, where specified, must be designed in compliance with ILE Technical Report 5 – The Brightness of Illuminated Advertisements
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<u>Water Pollution</u>	
Issue	Compliance
How Sustainable Drainage Contributes to Water Quality	There are no activities on site which lead to pollutants accumulating on hardstanding areas, therefore traditional drainage systems should be sufficient. Further detail is required by a drainage engineer.
Connection of New Developments to the Sewer Network	The site is in close proximity to the main sewer network therefore connection should not be a problem.

5 Conclusion

The proposed development is to be located on land which was previously a mix of vehicle business. Proposals are for the construction of a block of 10 flats on land to 2 Vale Road, Gravesend.

Gravesham County Council Core strategy sets out high standards for Sustainability and for all major applications a Sustainability statement is required to be submitted for planning. This is to be in line with the key principals of the Sustainable Design and the Local Climate Change Policy of the Core Strategy.

The above sustainability statement sets out what the requirements are for the Sustainability policies and what can be achieved for the proposed development.

The main features of the site to meet the building environmental standards are:

- The energy efficiency measures of the building are to go beyond Part L1a 2013, with a potentially a 16% improvement
- The development is to take a fabric first approach, which is to be designed to be highly insulated, with low u-values, good air tightness, high heating efficiency and controls, a heat recovery system.
- A low and zero carbon technology review has been carried out which shows only a heat pump or biomass system would be suitable
- Water efficiency is a big driver of sustainability and indoor fittings which will have water efficiency will be installed. These will help to go beyond Part G minimum standard of 125L/person/day and achieve a 110L/person/day
- Materials to be used in the proposed development are to consist of having a high Green Guide rating, using the BRE Green Guide for reference. All timber used on site is to be sustainably sourced. Where possible recycled aggregates will be used.
- The contractor to be used for this development will need to monitor, record construction site impacts (energy, water and transport), having policies in place for reducing air and surface water pollution
- The contractor will need to have a site waste management plan in place from the beginning of construction and use this throughout the construction period. Any demolition waste will be recycled
- Cycle storage is to be provided for each dwelling