

SUSTAINABILITY STATEMENT

GEORGE & DRAGON

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1. EXECUTIVE SUMMARY

- 1.1 The sustainability strategy for the proposed development of a drive through retail bakery unit on the site of the former George & Dragon located on Bath Road, Reading has been formed in line with the Reading Borough Local Plan (2019).
- 1.2 This report demonstrates that sustainability measures have been incorporated to reduce the environmental impact of the proposed scheme where possible.
- 1.3 The new development will integrate an energy efficient design in terms of building fabric and services and intend to achieve compliance with Building Regulations Part L and propose to achieve a percentage reduction in CO₂ emissions.
- 1.4 The proposed scheme will include efficient water and waste management strategies and improvements to the biodiversity of the immediate local area. The proposal also intends to reduce light and noise pollution while including measures to reduce surface water run-off from the site.
- 1.5 As a minor non-residential development the scheme aims to achieve the key objectives to reflect the local policies for Reading.
- 1.6 The key sustainability priorities of this development relate to its energy and water consumption and on-going resource management. The greatest benefits will be achieved through focus on these environmental sustainability priorities achieving performance beyond the requirements of planning policy.

2. INTRODUCTION

- 2.1 The first part of this Sustainability Statement provides an overview of the site proposal and planning policies applicable to this development in accordance with the Reading Borough Local Plan policies.
- 2.2 The second part outlines the sustainability strategies that have been employed to address the relevant planning policies, in terms of energy use, flood risk mitigation, waste management and encouraging sustainable means of transport.
- 2.3 Under Policy CC2 of the Reading Local Plan all proposals for new non-residential developments should incorporate efficient use of energy, water, minerals, materials and other natural resources appropriately.
- 2.4 The inclusion of appropriate sustainable measures and the intent to achieve a reduction of CO₂ emissions reflects the client and design team's aspirations in integrating sustainability measures and demonstrates that the project is designed to meet the relevant planning policy requirements.

3. SITE PROPOSALS

- 3.1 The development comprises of the construction of a single storey drive thru retail unit following the demolition of the existing George and Dragon Pub. The proposals include a kitchen and staff area, an open plan customer seating area and WC in addition to onsite parking.
- 3.2 The site lies around 3km to the south-west of Reading, within the Southcote area. Located off the A4 Bath Road, it is well connected by road transport.
- 3.3 The development is surrounded in all directions by residential areas, to the North also lies a school and a commercial development containing major food stores such as Aldi and Lidl is located to the West of the site along Bath Road. The pavements surrounding the site are wide and suitable for both pedestrians and cyclists.

Figure 1: Proposed Scheme - Site Location (Courtesy of JDA Architecture)

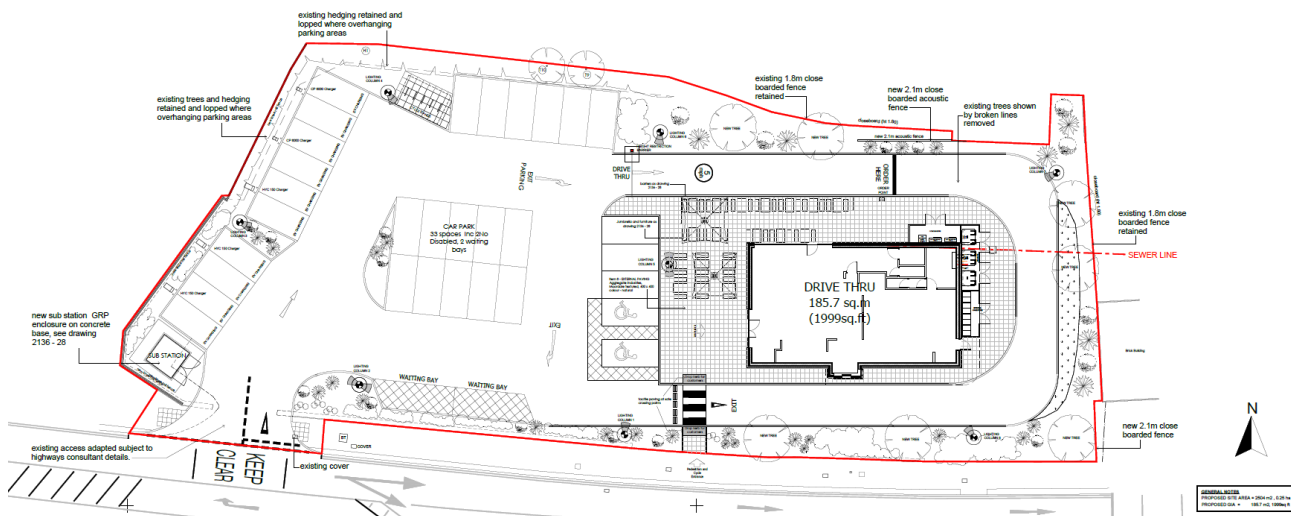


Figure 2: Ground Floor and Roof layout of the proposed scheme (Courtesy of JDA Architecture)

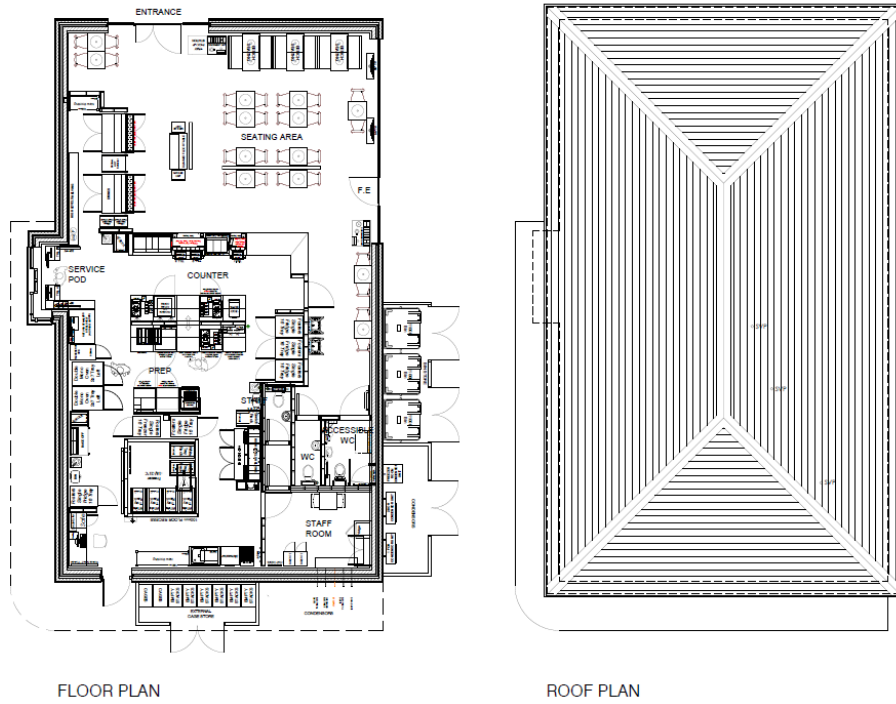


Figure 3: Proposed side elevation (Courtesy of JDA Architecture)



4. PLANNING POLICY

- 4.1 This section presents the energy and sustainability policies within the Reading Borough Local Plan, adopted in November 2019 that are relevant to the proposed scheme.

Policy CC2 – Sustainable Design and Construction

- 4.2 Policy CC2 outlines the energy efficiency and sustainability standard requirements for all new development as follows;

Proposals for new development, including the construction of new buildings and the redevelopment and refurbishment of existing building stock, will be acceptable where the design of buildings and site layouts use energy, water, minerals, materials and other natural resources appropriately, efficiently and with care and take account of the effects of climate change.

Policy CC3 – Adaptation To Climate Change

- 4.3 Policy CC3 summarises the requirements surrounding the adaptation to climate change on all new development as follows;

All developments will demonstrate how they have been designed to incorporate measures to adapt to climate change. The following measures shall be incorporated into development:

- *Wherever possible, new buildings shall be orientated to maximise the opportunities for both natural heating and ventilation and reducing exposure to wind and other elements;*
- *Proposals involving both new and existing buildings shall demonstrate how they have been designed to maximise resistance and resilience to climate change for example by including measures such as solar shading, thermal mass, heating and ventilation of the building and appropriately coloured materials in areas exposed to direct sunlight, green and brown roofs, green walls, etc;*
- *Use of trees and other planting, where appropriate as part of a landscape scheme, to provide shading of amenity areas, buildings and streets and to help to connect habitat, designed with native plants that are carefully selected, managed and adaptable to meet the predicted changed climatic conditions; and*
- *All development shall minimise the impact of surface water runoff from the development in the design of the drainage system, and where possible incorporate mitigation and resilience measures for any increases in river flooding levels as a result of climate change*

Policy CC4 – Decentralised Energy

- 4.4 Policy CC4 promotes the use of decentralised energy and outlines the following criteria for new developments;

In meeting the sustainability requirements of this plan, developments of the sizes set out below shall demonstrate how consideration has been given to securing energy for the development from a decentralised energy source.

Any development of more than 20 dwellings and/ or non-residential development of over 1,000 sq m shall consider the inclusion of decentralised energy provision, within the site, unless it can be demonstrated that the scheme is not suitable, feasible or viable for this form of energy provision.

Where there is existing decentralised energy provision present within the vicinity of an application site, further developments of 10 dwellings or more or non-residential development of 1,000 sq m or more will be expected to link into the existing decentralised energy network or demonstrate why this is not feasible.

Policy CC5 – Waste Minimisation and Storage

4.5 Policy DM16 presents the local authority's plan on waste management;

Development should demonstrate measures to minimise the generation of waste in the construction, use and life of buildings and promote more sustainable approaches to waste management, including the reuse and recycling of construction waste and the promotion of layouts and designs that provide adequate, well-designed space to facilitate waste storage, reuse, recycling and composting.

Policy CC6 – Accessibility and the Intensity of Development

4.6 Policy DM24 presents the local authority's stance on transport for new development;

The scale and density of development will be related to its level of accessibility by walking, cycling and public transport to a range of services and facilities, with the densest and largest scale development taking place in the most accessible locations. Unless it can be demonstrated that the accessibility of a site is to be significantly upgraded, for example, by providing high quality pedestrian routes or providing access to good public transport services, any new development must be at a scale, density and intensity appropriate to that level of accessibility.

6 SUSTAINABILITY MEASURES

- 5.1 The client and design team recognise the importance of delivering sustainable development and are proposing a bespoke Sustainability Strategy reflecting the unique impacts of the drive thru retail bakery unit at Bath Road and ensuring the adoption of appropriate sustainable design and construction targets.
- 5.2 This part of the report presents how the development aims to comply with sustainable development policies and incorporates guidance on sustainable design and construction. The following sections cover the requirements of the Reading Borough Local Plan.
- 5.3 The applicable sub-headings of the report have been used to show how the project will integrate sustainability measures into the design, the headings are as follows;
- Management
 - Health and Wellbeing
 - Energy
 - Transport
 - Water
 - Materials
 - Waste
 - Land Use and Ecology
 - Pollution

MANAGEMENT

- 5.4 The client enters into partnering agreements with their design team at the inception stage of all projects, including the Principal Contractor. This is vital to achieving the best long-term sustainability solutions.
- 5.5 The proposed development at the former George and Dragon on Bath Road has included a range of sustainability measures during the design development stage and further measures will be introduced during, detailed design, specification and construction, the include the following;
- Site and building layout designed to allow full access by elderly and disabled persons which meets CAGE guidance and part M of the Building Regulations;
 - Ensuring the Principal Contractor establishes a system to monitor and control construction impacts such as waste generation and energy use;
 - Use of local suppliers and contractors wherever possible;
 - Monitoring of deliveries, mode of transport, and miles travelled and associated carbon emissions;
 - Use of high-grade materials from local sources as far as possible;

- Preparation of a Building User Guide that contains information for the non-technical building user and is appropriate for the effective operation of the drive-thru unit.

HEALTH AND WELLBEING

- 5.6 The proposed building design and specification aims to create a healthy, safe and comfortable internal and external environment and intends to meet many of the Health and Wellbeing objectives.
- 5.7 The building has been designed to ensure that the relevant building areas are within 7m distance of a wall with a window or permanent opening providing an adequate view out, where the window/opening is $\geq 20\%$ of the total inside wall area.
- 5.8 Glare control has been incorporated into the design and the client proposes to install high frequency ballasts on all fluorescent and compact fluorescent lamps.
- 5.9 All internal and external lighting, where specified will be in accordance with the appropriate maintained luminance levels (in lux) as recommended by CIBSE.
- 5.10 The emissions of Volatile Organic Compounds (VOCs) and other substances from key internal finishes and fittings comply with best practice levels.
- 5.11 The client will assess thermal comfort levels in occupied spaces of the building at the design stage to evaluate appropriate servicing options, ensuring appropriate thermal comfort levels are achieved. The design criteria for the internal occupied areas are 21 degrees and -4 degrees externally

ENERGY AND CARBON EMISSIONS

- 5.12 Developing energy efficient, low carbon buildings is a key objective of the Policy CC2 and is an important sustainability issue for the proposed drive thru bakery unit.
- 5.13 The unit will not include a decentralised energy provision due to the units footprint falling below the 1000m² threshold as outlined in policy CC4, the final design will measure approximately 186m².
- 5.14 While energy efficiency is a clear sustainability issue Policy CC2 does not require a specific reduction in carbon emissions above Part L building regulations. However it is advisable that a target percentage reduction over the Part L target emission rate be achieved for the proposed development.
- 5.15 A fabric first approach to the reduction of energy will be adopted with low carbon heating and hot water systems.

- 5.16 The development proposes a building specification and services strategy that will exceed the minimum requirements of the Building Regulations, and will aim to incorporate the following measures;
- The increased use of energy monitoring and analysis equipment;
 - LED and compact fluorescent lighting;
 - Sub-metering of high energy areas and processes;
 - Zoned motion controlled low energy internal lighting and photocell controlled external lighting;
 - An innovative energy efficient, low temperature and cooking system and energy heat recovery on dishwashing systems.
- 5.17 Full details of systems specification and operational energy and carbon performance will be determined as part of the final detailed design specification in the post-planning phase.
- 5.18 In addition to the above the end-user will implement the following principals in the shop layout:
- Natural ventilation will be used wherever possible
 - Cooling units located away from warm areas
 - Air curtains over entrance doors to mitigate heat loss
 - Air conditioning will be turned off when not required and at night
 - Room temperatures pre-set at 21°C front of shop and 19°C at the back of shop
 - Refrigerants used will have a global warming potential of less than 5
 - Hot water to be provided by a hot water cylinder with an efficiency of 98%
 - Dimmable lights to shop to auto dim harvesting daylight to maintain lighting level

TRANSPORT

- 5.19 The proposed development is surrounded by residential areas and accessible by multiple forms of transport.
- 5.20 The site aims to have suitable and appropriate parking spaces for its size and use with clear demarcation for pedestrian and vehicular movements.
- 5.21 It is proposed that five electric vehicle charging points will be installed on site, servicing the equivalent of ten parking bays with further cabling infrastructure installed for another six spaces.
- 5.22 Reading Town Centre is easily accessible via the east-bound bus services stopping frequently at Bath Road. A west-bound service on Bath Road also provides transport links from the site to Newbury, the nearest bus stop is located 125m from the site.

- 5.23 The site is accessible by walking and cycling with good quality, continuous and well-lit footways and cycleways planned within the development and in the adjacent developments.
- 5.24 The drive-thru units design includes 5no cycle stands for parking up to 10no bicycles.
- 5.25 A Transport Assessment will be undertaken to assess the impact of the new development on the transport services and the impact in terms of highways, transport and traffic.

WATER

- 5.26 To minimise water consumption a range of measures will be utilised so that they are kept to appropriate levels. The client has a design policy to ensure that all taps and WC's consume less potable water in use than standard specifications and includes;
- The use of spray taps in public and staff areas.
 - Installation of suitable metering of mains water supply.
 - Sub-metering of large water consumption as appropriate to usage within the drive thru unit.
- 5.27 All non-residential developments should incorporate water conservation measures so that predicted per capita consumption, does not exceed the appropriate levels. Both residential and non-residential development should include recycling greywater and rainwater harvesting where systems are energy and cost effective.
- 5.28 Water consumption will be monitored and shop located wash hand basins will be instantaneous water heaters with electronic sensor taps, for more flexible positioning.
- 5.29 Water temperatures will be pre-set and WC's will have dual flush cisterns with a main flush capacity of 6 litres.
- 5.30 Dishwashers will operate on low water usage using a maximum of 1 litre of water per wash and use reheat systems for low operation and reduced running costs.

MATERIALS

- 5.31 Building elements will be sourced with consideration of embodied energy and carbon impacts according to the Green Guide to specification.
- 5.32 All thermal insulation products used in the building will have a low embodied impact relative to their thermal properties, again determined by the Green Guide to Specification targeting A or A+ ratings and all thermal insulation products used in the building will be responsibly sourced.

- 5.33 Suitable protection will be given vulnerable parts of the building such as areas exposed to high pedestrian traffic, vehicular and trolley movements. For example a bump rail will be provided in the service areas and the doors will be protected by kick plates.
- 5.34 The client is committed to the use of sustainable and recyclable materials throughout their shops ensuring that shop equipment and materials can be recycled after completion of the economic working life.
- 5.35 The client will also endeavour to ensure where possible that materials come from a sustainable source which can be traced to its location of origin such as the timber used in our shop fronts in conservation areas or listed buildings (FSC compliant).
- 5.36 Where possible locally produced materials are sourced and used, reducing travel distances.
- 5.37 In addition to the above the end-user will hire approved shopfitting contractors that are required to:-
- Reduce waste and recycle packaging.
 - Recycle waste products where ever possible.
 - To show details of disposal in Health and Safety files.
 - All timber to come from sustainable FSC sources.
 - Materials and equipment will be recycled. Equipment will be and check and refurbished as require before re use. Used materials will go through a recycling process.
 - Waste is to be managed and recycling maximised.

WASTE

- 5.38 To promote a more sustainable approach to waste management the following measures will be undertaken:
- A Site Waste Management Plan (SWMP) will be developed and implemented to segregate and recycle construction waste.
 - The significant majority of non-hazardous construction waste generated by the development will be diverted from landfill and reused or recycled.
 - The use of recycled or secondary aggregates where possible.
 - The provision of operational recycling facilities within the service yard.
 - The client aims to divert the majority of waste away from landfill and implement systems for the recycling of cooking oil.
- 5.39 The end-user will implement in addition to the above the following waste management measures:
- Three external bins will be provided for both general waste and mixed recycling
 - Waste will be collected twice weekly Monday to Friday

- All reusable packaging will be returned to the bakery on a nightly basis
- All unsold food will be collected by local charity groups and food banks on a nightly basis
- The clients staff will ensure that bins will be monitored to ensure no overflowing of waste

LAND USE AND ECOLOGY

- 5.40 The proposed landscape strategy aims to safeguard the natural environment and enhance biodiversity where possible.
- 5.41 The site will be landscaped to a high standard with existing boundary planting retained where possible. Landscaping will be focused round the perimeter of the site and will include the planning of 8 new trees to replace those that need to be removed. 3 of these trees will be planted along the Bath Road frontage as requested in pre-application advice.
- 5.42 The scheme will demonstrate 77.41% net biodiversity gain as illustrated by the Biodiversity Metric Report. In response to advice from the applicant's ecologist and in order to enhance the ecological value of the site, the scheme also includes 2 bird boxes, 4 bat boxes, 3 insect houses as well as log piles and hedgehog houses.
- 5.43 The scheme proposes a range of measures to support these species and enhance the site's future ecology potential, these measures are detailed on the submitted Landscape Plan.

POLLUTION AND FLOOD RISK

- 5.44 The proposed development will ensure all 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.
- 5.45 The unit will also ensure the specification of low Global Warming Potential (GWP) and zero Ozone Depleting Potential (ODP) insulation materials.
- 5.46 The site is irregular in shape. The former George & Dragon public house is located in the centre of the site, fronting onto Bath Road. The western area is dominated by an asphalt surfaced car park. The eastern area is formed of a vacant plot, formerly occupied by No.158 Bath Road which has since been demolished.
- 5.47 A topographical survey of the site was performed by Midland Survey Ltd in February 2022. The site was found to be generally flat, with falls generally from the boundaries of the site towards the centre. The majority of the site was found to be entirely impermeable, consisting of the existing public house and car park. A tree canopy overhangs the northern boundary of the site behind the existing building, while dense foliage covers the northern boundary of the car park.

- 5.48 CCTV survey of the existing drainage on-site was undertaken by Midland Survey Ltd in April 2022. The survey found the existing car park to be drained via a series of gullies discharging to two soakaways located beneath the existing car park. The rainwater pipes on the east façade of the existing public house proved traceable, which confirmed that runoff from the roof drained to a soakaway located behind the building.
- 5.49 The proposed strategy strives to utilise sustainable drainage techniques in accordance with the guidance described in CIRIA C753 and the published RBC guides. With this in mind, the strategy employs a soakaway consisting of geo-cellular crates to facilitate the discharge of surface water run-off via infiltration to the underlying soil strata.
- 5.50 Given the site is under 1 hectare in area, is located entirely within Flood Zone 1 (and at low risk of all other sources of flooding identified) and does not propose a change to a higher flood risk vulnerability classification, a site-specific Flood Risk Assessment is not required to accompany a planning application. Nonetheless, in accordance with local guidance, a drainage strategy for the proposed development has been developed.
- 5.51 The development will discharge domestic sewage via a connection to the public foul sewer or combined sewer network where it is reasonable to do so.

6 CONCLUSIONS

- 6.1 To summarise this report demonstrates how the client proposes to follow a bespoke Sustainability Strategy that reflects the specific sustainability issues relevant to the business and location following requirements outlined within the Reading Borough Local Plan.
- 6.2 The proposed development has been shown to integrate an energy efficient design, in terms of layout, building fabric and services, with efficient water and waste management strategies and proposed improvements to the biodiversity of the immediate local area. In addition, the proposal intends to reduce light and air pollution while reducing surface water run-off from the site.
- 6.3 Integrating energy efficiency measures will reduce regulated and unregulated energy demand within the drive-thru unit, the proposed scheme aims to achieve a percentage reduction in carbon emissions over the Part L2 requirements for the proposed building.
- 6.4 The client proposes a bespoke Sustainability Strategy suited to the Drive Thru unit, these measures incorporated reflect the client and design team's aspirations in integrating sustainability measures and demonstrates that the project is designed to comply with the planning policy sustainability requirements.