

Method Consulting

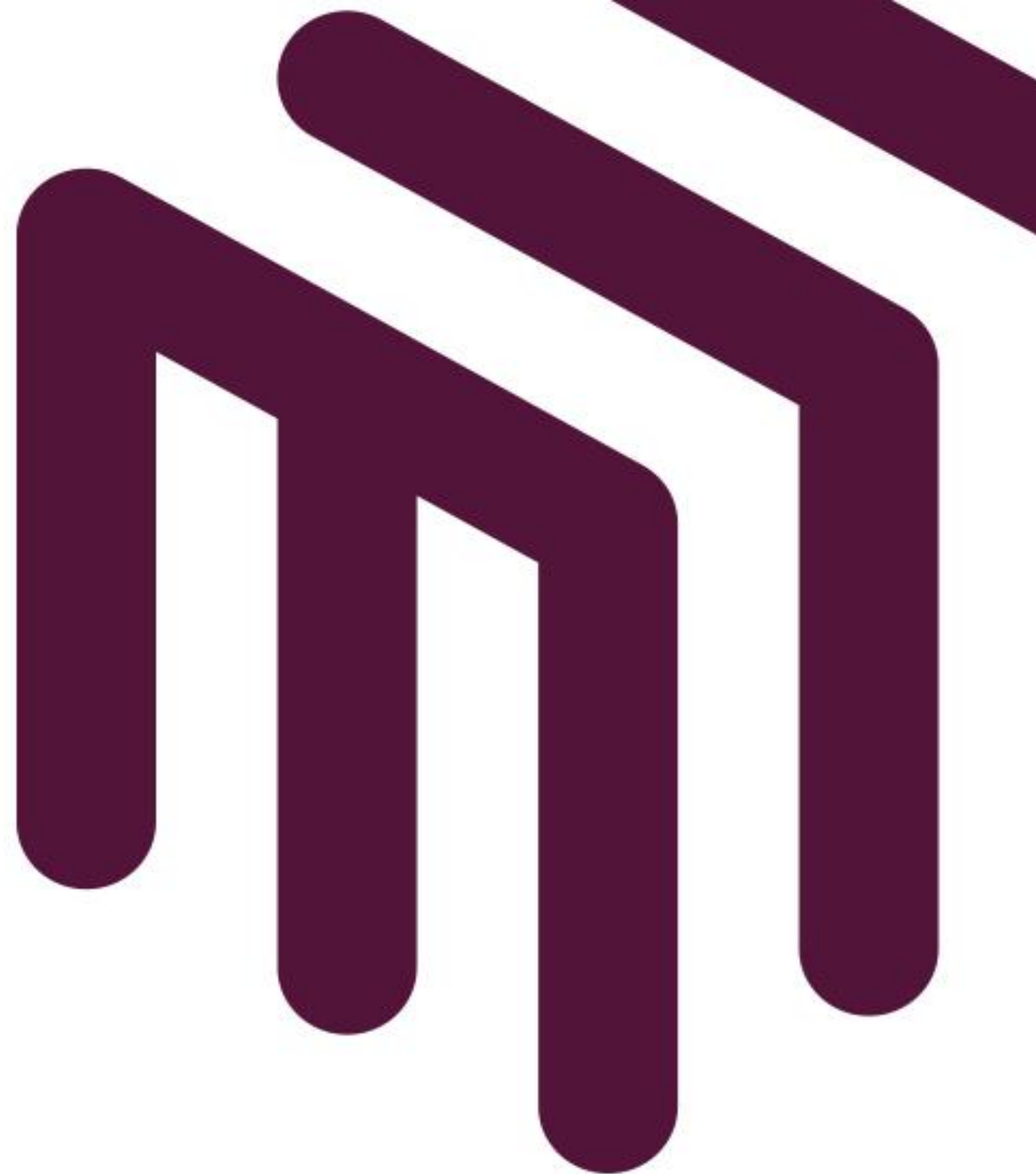
Intelligent engineering,
sustainable buildings

McDonald's Devizes

Energy and Sustainability Statement

For McDonald's Restaurants Ltd

February 2025



Document History

This document has been revised and issued as below:

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1. Executive Summary

Method Consulting, a specialist engineering and sustainability consultancy, has been appointed by McDonald's Restaurants Ltd to produce a Sustainability Statement as part of the planning application for a new restaurant at Horton Rd, Devizes, SN10 2GJ.

This statement has been prepared to demonstrate where the proposed development meets or exceeds the requirements of the Wiltshire Core Strategy 2015 regarding energy and sustainability. It responds to the following Wiltshire Core Strategy 2015 policies:

- *Core Policy 41 - Sustainable construction and low-carbon energy*
- *Core Policy 50 - Biodiversity and geodiversity*
- *Core Policy 52 – Green infrastructure*
- *Core Policy 61 – Transport and New Development*
- *Core Policy 67 – Flood risk*
- *Core Policy 68 – Water resources*

This report demonstrates various sustainable measures relating to:

- Energy and CO₂ emissions
- Reducing water consumption
- Sustainable materials and embodied carbon
- Flood risk and drainage
- Sustainable transport
- Biodiversity including net gain
- Sustainable construction practices including minimising construction waste

Overall, it is considered that the proposed sustainability measures for this development meet and exceed the requirements of the Wiltshire Core Strategy 2015.

2. Introduction

2.1 Background and Proposal

Method Consulting, a specialist engineering and sustainability consultancy, has been appointed by McDonald's Restaurants Ltd to produce a Sustainability Statement as part of the planning application for a new restaurant at Horton Rd, Devizes, SN10 2GJ. The proposal is for the construction of a new restaurant, drive-thru lane, landscaping, and car parking facilities.

This report outlines the potential environmental impacts of the development and the sustainable features to be incorporated through good building design and construction methods as well as the implementation of low carbon technologies. This report is written with particular reference to the Wiltshire Core Strategy 2015.

2.2 Site Location

The proposed development site is shown in Figure 1. The Site comprises buildings, concrete, scattered trees, grasses and bushes along the perimeter and central strip. The town of Devizes lies to the south-west, with its Northfields neighbourhood to the immediate south of the site, and an industrial and commercial site to the north. The road A361 runs adjacent to the northern boundary.

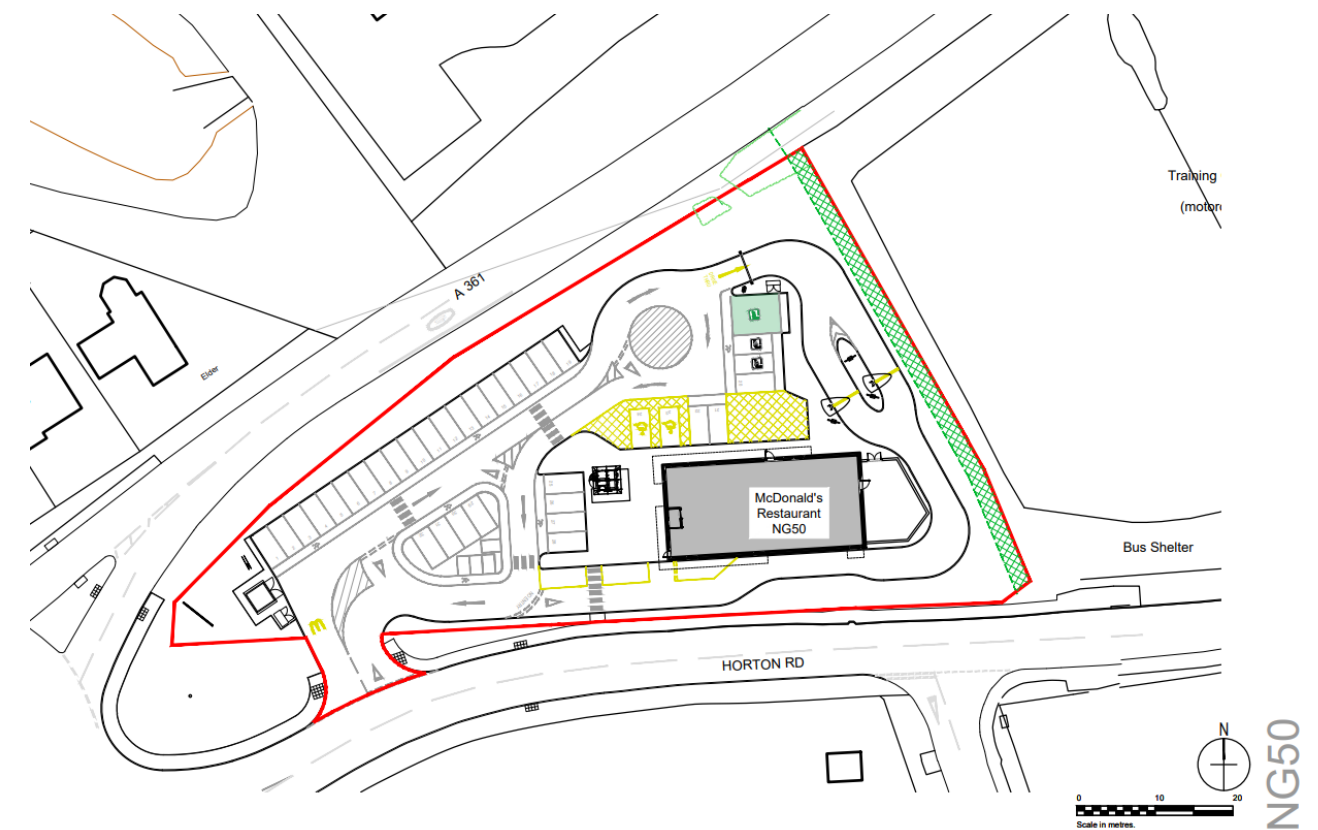


Figure 1 Site Layout Plan, Devizes, 9045-SA-2029-P002C Block Plan

3. Relevant Planning Policy

3.1 National Policy NPPF

The National Planning Policy Framework (NPPF) was published on 27 March 2012 with updates in June 2019, July 2021, December 2023 and December 2024. This document sets the overarching policies for development in England and states that:

'So that sustainable development is pursued in a positive way, at the heart of the Framework is a presumption in favour of sustainable development.' (paragraph 11, NPPF, 2023).

The NPPF also references the 17 UN Sustainable Development Goals, which are illustrated below:



Key points within the NPPF of relevance and which have therefore been considered as part of this proposal are:

- Promoting sustainable transport;
- Making effective use of land;
- Achieving well-designed places;
- Meeting the challenge of climate change and flooding;
- Conserving and enhancing the natural environment.

3.2 Local Policy – Wiltshire

3.2.1 Wiltshire Core Strategy (adopted January 2015)

Adopted in January 2015, the Wiltshire Core Strategy sets out policies and site allocations to guide the development and use of land and will form the basis on which planning applications will be determined in Wiltshire.

The strategy seeks to support a more sustainable pattern of development within Wiltshire. There are several key sustainability principles which underpin the strategy. These include:

- Providing sustainable developments that minimise the need to travel and maximises the potential to use sustainable transport.
- Working towards lowering Wiltshire's carbon footprint, and through renewable energy and sustainable construction.

A summary of the policies relevant to the proposed development and this Sustainability Statement are included below.

• Core Policy 41 - Sustainable construction and low-carbon energy

New developments are encouraged to incorporate design measures to reduce energy demand.

Developments will be well insulated and designed to take advantage of natural light and heat from the sun. Developments will supply electricity for energy and heat from renewable sources. New development will be supported by sustainable waste management.

• Core Policy 50 - Biodiversity and geodiversity

Developments must demonstrate how to favourably maintain their ecological value, connectivity and functionality in the long-term. Ecology must also consider disturbance effects such as noise and lighting.

Developments should seek to achieve 'no net loss' of biodiversity and any unavoidable losses are outweighed by other sustainability considerations. Such measures should be delivered within the development site where possible.

Also provide opportunities to enhance the natural environment for wildlife and communities through landscaping, SUDs and features of the built environment e.g. bird and bat boxes.

- **Core Policy 52 – Green infrastructure**

Developments should provide socio-economic benefits, these include: the natural environment; wildlife corridors; reducing noise and air pollution; and water and carbon management; sustainable drainage. Appropriate long-term management is essential, and developers will be required to contribute to this.

- **Core Policy 61 – Transport and New Development**

Developments should be designed to encourage the use of more sustainable modes of transport including by bicycle and electric powered vehicles. Consideration should be provided to those who are visually impaired and those with other disabilities

- **Core Policy 67 – Flood risk**

Proposals will be expected to incorporate Sustainable Drainage Systems (SuDS) such as permeable paving wherever possible. Landscaping should also be considered as a measure to reduce surface water run-off. All developments should implement measures to reduce the quantity of run-off and improve rainwater infiltration unless site or environmental conditions make these measures unsuitable.

- **Core Policy 68 – Water resources**

Developments should incorporate water efficient measures into their proposals.

4. Sustainability Statement

4.1 Energy and Reduction of CO₂ Emissions

This section outlines the features to be incorporated into the design of the development to improve the overall environmental performance through good building design and consideration of renewable energy sources.

Developments are expected to minimise energy use and explore opportunities for renewable sources of energy in line with the energy hierarchy:

- Be Lean: use less energy;
- Be Clean: increase efficiency of energy supply;
- Be Green: use energy from renewable and low carbon sources.

4.1.1 Core Policy 41

The building has been designed with improved building fabric and air permeability compared to the minimum standards in Building Regulations. McDonald's buildings are pre-fabricated and consist of modular construction methods made off-site which enable the design to create a thermal wrap. High levels of insulation are specified. As a result, a typical NG50 building would contribute to better Building Regulation U-values, 0.21 W/(m²K) for external walls, 0.13 W/(m²K) for the ground floor, 0.16 W/(m²K) for the flat roof and 1.4 W/(m²K) for the windows. Large glazed walls have fixed overhang canopies. Canopies act as brise soleil in summer but allow in sunlight in winter for passive solar gain due to the sun's lower angle.

Effective partitioning between the external and internal will be achieved through a transition zone at the building entrance to reduce the heating and cooling energy demand to ensure there is no direct route for heat loss/draughts from external factors. This is achieved through a door into a small lobby area and a further door offset into the main building.

Energy efficient LED lighting has been proposed to provide an average initial luminous efficacy of not less than 90 luminaire lumens per circuit Watt. A photocell and timeclock for external lighting control is specified to minimise energy used during daylight hours.

The proposed design will incorporate a south facing Solar Photovoltaic array of approx. 64m² which will typically provide between 10-35 kWh/m² in energy for the building. Air source heat pumps are proposed to be used for the development as a preferred renewable and low carbon technology to meet the total DHW demand. These renewables combined can provide a 10-30% reduction in overall carbon emissions of the building.

Typical NG50 standard building type incorporates metering of electrical loads which are expected to consume more than 10% of the building's annual energy demand. The following end uses are generally metered:

- Mains incoming electrical meter.
- Large kitchen plant.
- Cold storage.
- Distribution boards (Lighting, IT power, Mechanical and General power).
- Circuits off the distribution board (BMS, ventilation and hot water).

NG50 standard buildings are typically designed to withstand longer term impacts of climate change over their lifetime, including extreme temperatures and an increase in precipitation. Proposed climate change adaptations typically include structural elements of the building to be well insulated to minimise impacts from extreme temperatures, materials specifically chosen to withstand likely temperatures and climatic conditions, adequate ventilation to minimise overheating and suitable support to withstand additional roof loads.

4.2 Water Efficiency

4.2.1 Core Policy 68

Efficient water-consuming components would typically be specified to meet the equivalent of a BREEAM 'Excellent' standard for water consumption (a 12.5% improvement over the baseline) as a minimum, with the aim of achieving a 40% improvement to demonstrate further water consumption improvements. The table below provides a typical example of the water consumption rates achieved at McDonald's buildings to achieve a 40% improvement:

Fitting	Maximum water consumption rate – McDonald's
WC	4.5/3 litres dual flush (average of 3.38 litres/flush)
Accessible WC	4.5 litres single flush
Urinals	Waterless
Wash hand basin tap	≤4.7 litres/min
Kitchenette sink tap	<5.6 litres/min
Dishwasher (if installed)	4.5 litres/rack

Table 1 Typical specification for water consuming components

Automatic taps in washrooms are expected to be specified with waterless urinals and toilets with dual flush systems (except the accessible WC) to reduce water consumption.

Generally, water metering is connected to the BMS to allow for ease of access, sub-meters are as follows:

- Wash down unit
- Drinks machine
- Main water
- Kitchen wash up
- WCs
- Hot water system

Solenoid valves are typically specified which are linked to the PIR sensor for the WC areas. These usually have a shut off time of 5-15 minutes and shut off the cold water supply during periods of inactivity to minimise potential for leaks.

4.3 Materials

4.3.1 Core Policy 41

Responsible sourcing of materials is favoured. All timber used for the building should be FSC certified and materials are typically favoured which have BES 6001 and ISO 14001 certification which promote more economically, socially and environmentally responsible practises.

Exploring the most environmentally friendly materials is something the design team are always eager to incorporate with recent discussions taking place on the most suitable cladding that is made of recycled material, recyclable at the end of life, has an Environmental Product Declaration (EPD) and made in the UK, all points to consider with embodied carbon. Due to the LCA modelling, this has allowed exploration of material optimisation, choosing lower embodied carbon alternatives.

Some examples of materials used include:

Superstructure

- Steel sourced with certified Environmental Product Declarations
- Sheep's wool insulation in lieu of glass fibre
- Glazing - Hardwood Timber Frame c/w aluminium capping
- Reduced Glazing to Shopfront and Serving Booths

Cladding

- Profiled composite Cladding planks made from recycled plastic and timber fibres

Recommendations for reducing embodied carbon include using recycled aggregates where possible, replacements such as GGBS where feasible and opting for products with an EPD (Environmental Product Declaration) to allow for accurate data collection.

Material protection measures are generally incorporated into an NG50 building type to reduce damage to the building fabric and materials and therefore reduce material usage for maintenance throughout the lifecycle of the building. Such measures can include:

- Kick plates on doors.
- Doorstops.
- Tiled floor finishes throughout.
- Anti-slip entrance matting.
- Profiled corner protection on exposed door frames.
- Cranked bollards around the drive thru.

The applicant has previously commissioned an embodied carbon analysis for this building type, using OneClick LCA software. This demonstrates the following results at concept stage, for the BREEAM Mat01 scope, for the superstructure (modules A-C): 444 kgCO₂/m²:

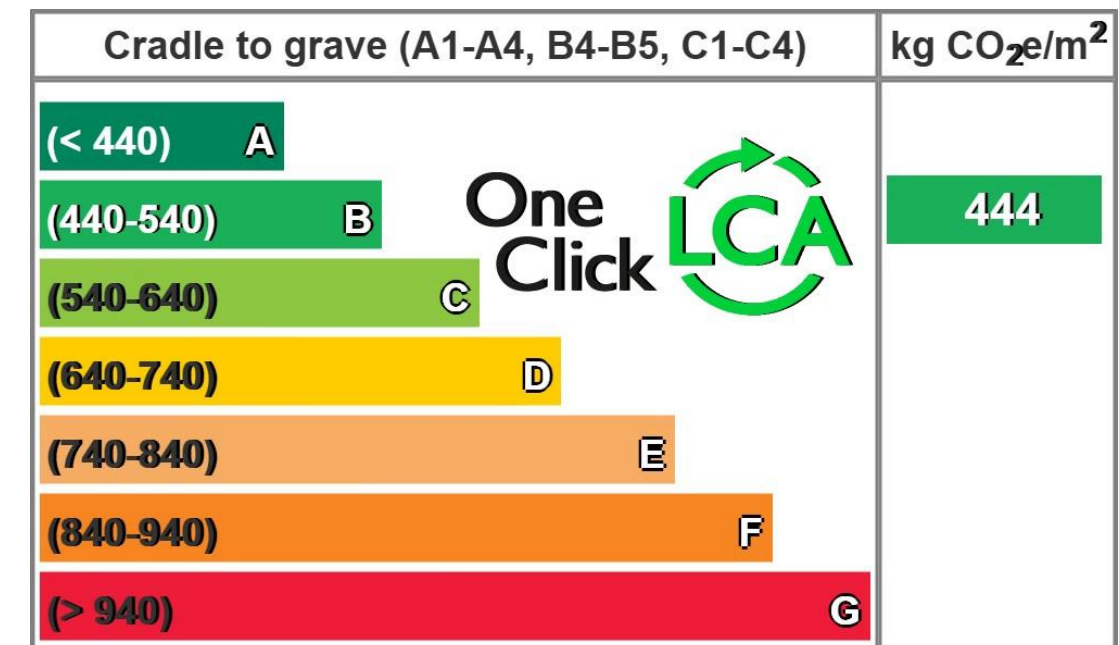


Figure 4 Embodied Carbon analysis for a typical NG50 building

4.4 Flood Risk and Drainage

4.4.1 Core Policy 52 and Core Policy 67

The Flood Map for Planning confirms the proposed development site is located in Flood Zone 1 and has a low probability of flooding from rivers and sea.

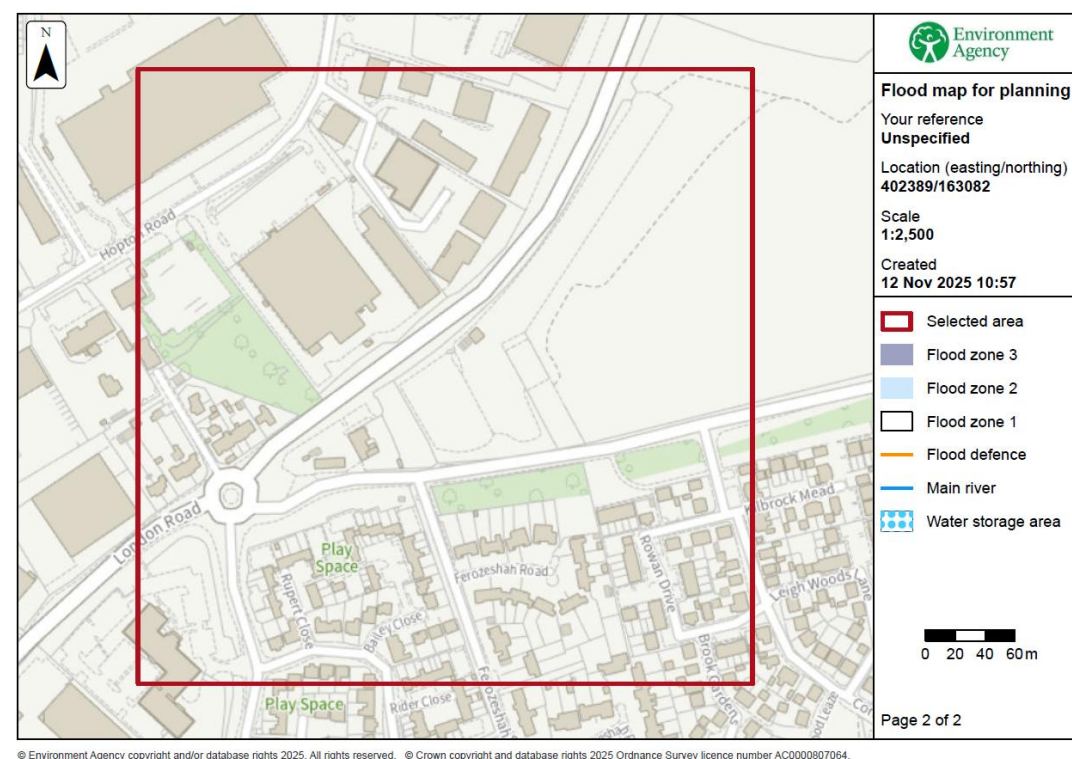


Figure 5 Extract from GOV.UK flood map for planning

The Flood Risk Assessment describes how that risk is not increased by the development.

The development's surface water drainage strategy follows sustainable drainage guidance. Infiltration is most likely unsuitable due to previous site usage and there are no watercourses nearby, therefore runoff will discharge to an existing sewer via a new piped system within the new access road. The proposed discharge rate is restricted to 2 l/s. The sustainable surface water drainage system is designed to accommodate a 1:100- year event plus the appropriate climate change allowance for this site without flooding.

The development's foul water drainage strategy utilises gravity to take effluent to the nearby existing public sewer either to the north within the A361 or to the south via an existing connection from the site to Horton Road. The design includes many access points for maintenance and an alarmed grease trap to ensure downstream sewers are protected from cooking waste / grease.

Please refer to the Drainage Statement by others for full details. A SuDS maintenance schedule has also been provided to demonstrate adoption and maintenance proposals in a separate report.

4.5 Sustainable Transport

4.5.1 Core Policy 61

A Transport Assessment and Travel Plan have been produced to support this development proposal. Please refer to these for full details. The Travel Plan notes that 64% of staff would be expected to travel by public transport, foot, or bicycle, 7% of staff would be expected to be dropped off by others and 1% of staff would be expected to car share. Around 25% are expected to travel by car, equating to around 4 staff at any one time.

The development will enable local workers to opt for more sustainable and healthier forms of transport when travelling to site. There will be 7no cycle storage spaces, 3no Sheffield stands, and one cycle locker, refer to the Architect's Site Layout. There would be 3no EV charging bays on site for staff and customers (including 1 accessible EV bay), encouraging the uptake of electric vehicles which reduces associated transport emissions.

The nearest bus stops are located 60 metres east of the site on Horton Road. The stops provide services in both directions. There is also a bus stop located on Horton Avenue, 160 metres southwest of the site. The site is served by 4 buses per hour Monday to Saturday and 1 bus per hour on Sunday. The site is reasonably well served by public transport for an edge of town location.

Internally, the staff will have access to changing space and lockers to further facilitate cycling.

4.6 Biodiversity, Ecology and Land use

4.6.1 Core policy 50 and Core Policy 52

The Site is comprised of a large, surfaced petrol filling station forecourt, areas of hardstanding and gravel, low mown amenity grassland, some scattered trees and an area of former scrub, which now contains tall ruderals, scattered scrub and a vegetated soil bund in the eastern portion of the Site. The Site is bordered by London Road immediately to the north.

A Preliminary Ecological Appraisal and a Biodiversity Net Gain Design Stage Report has been carried out by Practical Ecology Ltd to determine the existing ecological baseline for the site and opportunities to enhance the site where possible.

The recommendations from the ecology report include provisions for bats, birds, hazel dormice, fauna and flora and habitat creation.

All planting is expected to rely solely on precipitation which reduces any potential potable water demand.

For more information, please refer to the Preliminary Ecological Appraisal by others.

4.7 Sustainable Construction Practices

4.7.1 Core policy 41

Resource efficiency will be encouraged during construction. The contractor should be encouraged to monitor and minimise the amount of construction waste generated, and to maximise the amount that is diverted from landfill. Modular building design and construction assists in facilitating a lower on-site waste solution, minimising storage of materials on-site and provides scope for future reconfiguration.

The building should use materials from manufacturers with responsible sourcing accreditation such as FSC, BES 6001 and ISO 14001 and recycled aggregates are encouraged to be used where feasible. The contractor should also be encouraged to sign up to the Considerate Constructors Scheme.

4.8 Environmental Quality and Pollution

4.8.1 Core Policy 52

All MEP systems specified for a typical NG50 building types are all electric, therefore there are no NO_x emissions at the site. Electricity is generally supplied by a south facing Solar Photovoltaic array (20m²) and Air Source Heat Pumps are used to heat the Domestic Hot Water (Section 4.1).

Plant equipment is located on the roof away from public areas. When required, noise attenuation is specified for plant equipment if the Acoustician feels this is necessary.

External lighting is typically specified to comply with ILP Guidance Note 1 for the reduction of obtrusive light 2021. Cut off type luminaires limit the illumination emitted above the horizontal plane to reduce light pollution. In addition, downward directional optics are frequently specified which have output intensities calculated to illuminate the ground within the site and not beyond the site boundaries. The luminaires are set at zero-degrees in order to avoid any line of sight or glare either within or outside of the site boundaries. Illuminated advertisements are also typically designed to comply with the ILP PLG05 The Brightness of Illuminated Advertisements guidance.

A typical NG50 building has a dedicated store for the segregation of operational and recyclable waste. This store is clearly labelled to assist with the storage and collection of all waste streams.

The space is approximately 10m² which far exceeds the 4m² requirements for BREEAM Wst 01 credit for minimum storage provision.

Across McDonald's restaurants cardboard, kitchen food waste, paper cups and uniforms use a backhauling system where these items are collected and taken to distribution centres for recycling. In addition, used oil and grease are taken to an anaerobic digestion facility where this is turned into biofuels to fuel vehicles.

5. Conclusion

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- Sustainable construction practices including minimising construction waste

Overall, it is considered that the proposed sustainability measures for this development meet and exceed the requirements of the Wiltshire Core Strategy 2015.

6. References

National Planning Policy Framework (NPPF), 2024

<https://www.gov.uk/government/publications/national-planning-policy-framework--2>

Wiltshire Core Strategy (Adopted January 2015)

https://www.wiltshire.gov.uk/media/372/Wiltshire-Core-Strategy-adopted-2015/pdf/Wiltshire_Core_Strategy_2015.pdf?m=1735555642237



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