



510121.000 WOKING FOOTBALL CLUB, WOKING
SUSTAINABILITY STRATEGY REPORT
NOVEMBER 2019

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DOCUMENT CONTROL

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1 EXECUTIVE SUMMARY

Elementa Consulting was commissioned to put forward a sustainability strategy for the development of Woking Football Club development in Woking Borough Council.

The purpose of this report is to establish different measures to achieve a truly sustainable development through a holistic and eco-systemic approach, towards a regenerative development.

Six key goals have been addressed for this development, which form the basis of the sustainability strategy, this follows the Applicants' Climate Neutral Development Checklist provided by Woking Borough Council:

Location and Transport

- Excellent pedestrian and cycling networks provided to Woking Town Centre
- Travel plan and transportation strategy developed for the wider site

Layout and Design

- Dwellings designed for daylight, views and in line with Woking's Sustainable Design practices

Energy and Carbon reduction

- Fabric first approach to provide excellent passive design response
- Air Source Heat Pump's together with energy efficiency measures deliver an overall carbon emission reduction of 25.8% carbon savings over Building Regulations minimum requirement

Water and Drainage

- High water efficiency systems provided
- Integrated SUDs strategy provided

Waste and Materials

- Waste Management Plan provided
- Healthy materials to be used throughout the development – promoting health and wellbeing

Green infrastructure and Ecology

- Healthy streets approach proposed, with green infrastructure integrated throughout the wider development
- Biodiversity and ecological enhancement incorporating amenity roof gardens and biodiverse roofs

2 PROJECT CONTEXT AND DESCRIPTION

Elementa Consulting has been appointed by Goldev Ltd to prepare a Sustainability Strategy report in support of the planning submission for Woking Football Club development. The project includes the delivery of a new stadium for Woking Football Club, retail/restaurant/café use, with an integrated medical centre, a concierge/delivery building with cycle hub and 1,048 residential units with associated parking.

The proposed residential development will deliver five residential blocks, comprising a total of 1,048 dwellings, concierge building, and 861 car parking slots, with a total Gross Internal Area of 77,198 m². The Application Site is located approximately 1.5km South of Woking Town Centre, following under the remit of Woking Borough Council.

Design Proposal 109D was presented to the planners in April 2019. A public consultation was held at the local community hall in July and the design of the scheme was received well.

Site and surroundings

The site is 1,500m South of Woking town centre. It is bound by Westfield Avenue to the West and Kingfield Road to the North. There is a large cluster of existing trees to the east and south screening both the existing residences and the football grounds to the south. The site is surrounded by green spaces such as Woking Park, Hoe Valley Liner Park and Loop Road Sports Field.

The site can be accessed by foot and vehicles. Vehicular access to the site will be from the Kingfield Road and all car access to the residential blocks will be off Westfield Avenue. There is a direct access to the centre of Woking where several taller buildings can be seen along the skyline



Figure 1: Existing Site issued by Leach Rhodes Walker Architects

Proposed development

The proposal consists of broad range of different types of accommodation, 1 and 2 and 3 bed townhouses, 1 and 2 bed duplex apartments, studio, 1, 2 and 3 bed apartments. The apartments are designed around a build-to-rent model, where each bedroom has an associated bathroom and each bedroom is a uniform size.

Base level units provide family housing, with their own front entrances from the new streets. Roofs are also landscaped and accessible to residents. The project has been designed to take full account of the needs of disabled users in relation to the following statutory regulations: Building Regulations Part M, British Standard 8300 and The Disability Discrimination Act.

At ground floor level, there are private amenity spaces for each block as well as landscaped communal amenity spaces. The building also contains a residential lobby with a lift, stair core and plant rooms. At the basement level, there is a total of 861 spaces, including 5% accessible parking spaces. There is also additional cycle storage for residents use provided to Woking Borough Council (WBC) standards.

A summary of the unit variation and arrangement across blocks 1-5 are provided in the table below:

	Studio	1-Bed	1-Bed/Dup	2-Bed	3-Bed	2-BedTH	2-BedDuplex	3-BedTH
1	0	54	0	137	0	0	0	0
2	58	88	20	58	0	24	24	5
3	30	33	15	29	0	18	12	1
4	26	53	28	57	1	12	32	2
5	26	51	32	71	0	19	32	0
Total	140	279	95	352	1	73	100	8

Woking Football Stadium

The stadium is located to the north east of the site, its access from Kingfield Road will be retained. The existing football stadium will be demolished along with the existing David Lloyd Leisure club. The Stadium will be realigned for optimum North-South orientation, pedestrian and vehicle traffic will be clearly delineated, approximately 70 car parking spaces will be provided together with better accessibility for disabled/elderly supporters. The Stadium will include as well as seat/standing spectator decks also Football Club Accommodation, Hospitality, Retail, Offices, Kiosks and WCs.

A site plan of the proposed development is provided below:



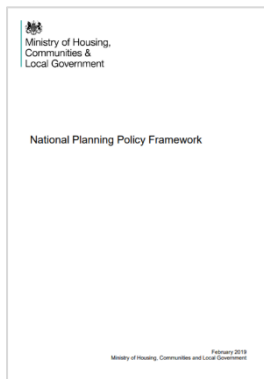
Figure 2: Proposed layout (from Design & Access Statement)

3 PLANNING CONTEXT

In preparing this Sustainability summary a number of policy documents have been used to guide and inform the sustainability aspirations for the proposed development. The aim of this summary document is to clearly identify how the development has placed sustainability at its heart, reflecting the requirements of key planning documentation. The principles of sustainability have been integrated within the design, through applying a set of high-level set of sustainability criteria.

Relevant planning policy has been reviewed and identified that impact on the sustainability of the Woking football Club development.

3.1 NATIONAL PLANNING POLICY

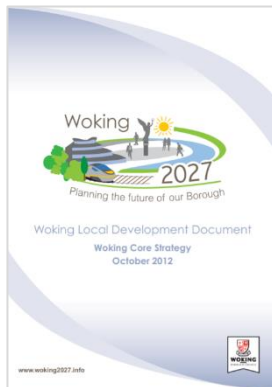


National Planning Policy Framework (2019)

The NPPF sets out the Government’s planning policies for England and how they should be applied. This document outlines the Government’s vision of sustainable development to be interpreted and implemented locally - reflecting the local context.

At the heart of the NPPF is a presumption in favour of Sustainable Development – requiring the three common threads of sustainability to be met: environmental, social and economic.

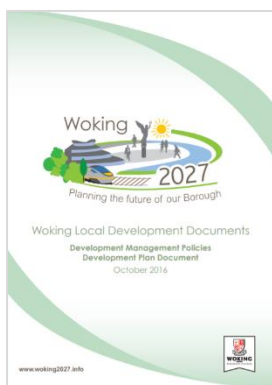
3.2 RELEVANT LOCAL PLANNING POLICY AND GUIDANCE



Woking Local Development Document, Core Strategy (2012)

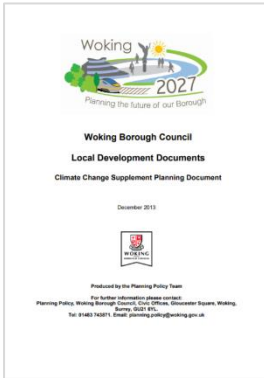
The Development Document provides the planning policies needed to achieve Woking Borough Council’s vision as set out in the Core Strategy, and how to get the best from future development – covering the period up to 2027, setting out that through its implementation the needs of future generations will not be compromised.

The 25 policies set out are interrelated and should be read together with the Core Strategy to understand their combined effect upon individual developments.



Woking Local Development Document, Development Management Policies (2016)

The DPD document seeks to deliver policies identified in the Core Strategy – covering the same period as the Core Strategy up to 2027 and looks to the whole of the borough.



Woking Borough Council, Climate Change Supplement Planning Document

The Climate Change SPD provides guidance for the application of Policy CS22 *Sustainable Construction* and CS23 *Renewable and low carbon energy generation* of the Core Strategy.

In further support Policy CS22 a Carbon Neutral Development Checklist will also be completed and provided within the appendix of this report.

4 LOCATION AND TRANSPORT

POLICY CS9: Flooding and Water Management

POLICY CS18: Transport and Accessibility

4.1 TRANSPORTATION PLAN

This development is well connected to the city centre, it can be accessed by foot with specified pedestrian routes as well as cycle routes. This is in line with Policy CS18 that encourages any developments to create a well-integrated community connected by a sustainable transport system that connects people to jobs, services and community facilities, and minimise impacts on environment.

The aim is to promote low carbon and fossil fuel free means of transportation by promoting walking and cycling within the site. This assists in reducing potential production of CO₂, particulate matter (PM₁₀) and Nitrogen Oxides (NO_x). This also meets the requirements lined out in the Surrey Transport Plan LTP3.

See the *Travel Plan Document* provided in support of this submission for further information.

4.1.1 Pedestrian Strategy

The development is not car-free, however, there are many alternative sustainable transportation and movement options, to encourage an active lifestyle and reduce any negative environmental impacts. Being located only 1.5 km away from the city Centre, the development site is inherently provided with excellent pedestrian access. It is within proximity to Woking Train station – a central hub to the city. The site has been provided with 5 points of pedestrian access.

Existing pedestrian footpaths provide excellent connection to local shops and amenities, together with local green spaces and parks – Loop Road Sports Field just south of the development site and Woking Park to the north. Bus stops are located along Kingfield Road meaning that majority of the residents will be within a 5-minute walk from public transportation.



4.1.2 Cycling Strategy

The site is surrounded by a number of cycle routes converging on the site from all directions. Several facilities will be provided to support and encourage cycling as means of transportation. Internal secure and sheltered cycle stores are included in the basement floor of each block for long term use by the residents assisting in influencing the shift in the mode of travel from car-based journeys to public transport and cycling. This is in line with Policy CS18 that specifies Woking as a Cycle Town.

Non-residential buildings will be encouraged to provide showers and changing facilities, encouraging staff and users to travel to work by bicycle. Secure visitor cycle parking will be provided across the development, both for workers and visitors to the completed scheme.

The residents of the development will be provided with safe, secure and weather proof bicycle storage facilities, in proximity to their dwelling, being accessible only to residents of the development.



4.1.3 Parking Strategy

The proposal provides sufficient parking spaces for the users of the mixed-use development. There are 861 parking spaces, located on the basement and lower basement floor of each block. The community space function provided as part of the development, is proposed to meet the needs of the local community so will not create additional parking stress to the neighbourhood.

Electrical vehicle charging points and infrastructure is to be provided as part of the final design, meeting the demands of the growing availability of electrical vehicles.

4.2 FLOODING

4.2.1 Flood Risk

The site is identified as being in Flood Zone 1, therefore there is a low probability of flooding – and annual probability of flooding below 0.1%. Land located within Flood Zones 2 and 3 (Medium and High Risk) is located approximately 15 m to the north-west and therefore, an assessment of risk of climate change on the flood extents for the site's operational lifetime has been carried out. The assessment shows that the fluvial flood defences would provide protection for the operation lifetime of the development. Therefore, the proposed development has an acceptable flood risk within the requirements of the NPPF and Policy CS9 from the Woking Core Strategy.

A Flood Risk Assessment has been carried out as part of the design process and has been used to inform the additional measure that will further reduce the potential risk of flooding from surface water runoff and maintaining a greenfield run off rate.

Surface water runoff has been considered as part of the development, with green roofs, permeable paving, lined geo-cellular tanks reducing the rate at which rainwater run-off from the site will enter the wider surface water infrastructure, therefore reducing the potential for localised flooding during an intense rainfall event.

Full details of the Flood Risk and Surface Water Management strategies can be referenced in the *Flood risk assessment and drainage strategy* provided

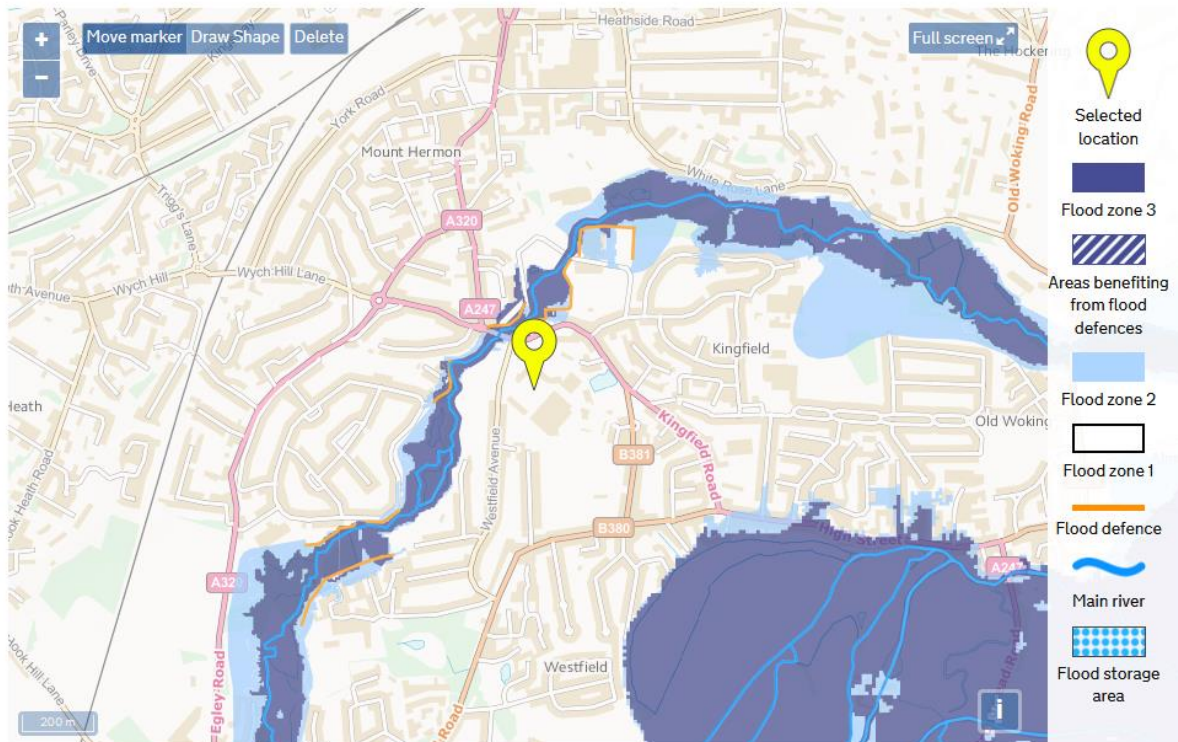


Figure 3: Flood Risk Map, Environment Agency (<https://flood-map-for-planning.service.gov.uk/confirm-location?eastings=499798&northings=157646&placeOrPostcode=gu2>)

5 LAYOUT AND DESIGN

POLICY CS17: Open space, green infrastructure, sport and recreation

POLICY CS21: Design

POLICY CS22: Sustainable construction

Policy CS22 states that all new developments are required to take account of layout, landform, orientation and landscaping to maximise efficient use of energy and adapt to impacts of climate change.

The layout of the development has ensured that, where possible, levels of sunlight are maximised to amenity areas through the year, while balancing this with the potential for overheating during warmer periods and allowing sufficient solar gain during winter – the fenestration design looks to strike this balance.

5.1 PROJECT DESIGN

5.1.1 Community Wellbeing

Designing a truly sustainable development means putting humans at the centre of the design delivering a healthy response for the short and long-term. To achieve this, access to biophilia, healthy streets and buildings and green infrastructure are to be prioritised. The proposed building design and construction aims to minimise detrimental impacts on an occupant's health from indoor pollutants emitted from the building.

The Core Strategy seeks to achieve a sustainable community for Woking and improve upon the wellbeing of its people – it is this philosophy that has been applied to the Woking Football club development. The wider Woking Football Club and Egley Road development promotes the idea of this balance with having leisure spaces and sports-designated areas, surrounding the residential and commercial spaces. Open space, green infrastructure, sport and recreation has been considered into the overall scheme as it is outlined in Policy CS17 as being essential to the community.

Providing a development that places the health and wellbeing of home owners and visitors is key to the success of the whole of the development. The wellbeing of building occupants will be prioritised through the provision of high-quality design, healthy and appropriate environments. Delivering a vibrant, successful neighbourhood, with the health benefits of providing contact to nature and comfortable internal spaces taken fully into consideration in continued design development of this project.

Policy CS21 outlines that all projects must be designed in an inclusive way to be accessible to all members of the community. The project has been designed closely with the Building Regulations: Part M to ensure all viable areas of the dwellings and masterplan are accessible to all regardless of disability.

5.2 DWELLING DESIGN

5.2.1 Wellbeing

The buildings for the proposed development are to be designed to fully benefit from daylight and views. Room proportions, internal layouts, and fenestration location are driven by the desire for comfortable internal spaces. Environmental analysis has been used by the design team to inform the design of homes and internal spaces.

The requirements for daylight from fenestration, the design team have been conscious to balance these needs with that of avoiding overheating risk - today and in the future. Design evolution of the façade

design will continue to evolve during next work stages, continuing to look for opportunities to provide passive design responses to the development.

A daylight assessment demonstrates that 93% of all rooms within the building is meeting or exceeding the BRE average daylight factor targets. There are a number of rooms with levels of daylight below the suggested targets and these is due to overhanging balconies and wider site constraints.

Full details of the Daylight and Sunlight assessment can be referenced in the *Internal Daylight and Sunlight Report* provided.

Natural ventilation will be implemented throughout the development, providing mixed-mode systems with MVHR, and suitable building openings used to drive natural ventilation, when the climate allows.

5.2.2 Indoor Air Quality

In the residential dwellings air will be brought into the space through a mechanical ventilation heat recovery (MVHR) unit, with these units prefiltering incoming outside air – which will receive regular cleaning and maintenance, including regular filter inspection. Dedicated exhaust systems for kitchens and bathrooms will be provided. This air exchange system allows the building to be well ventilated all year-round improving occupant's health and comfort.

Further to this, the applicant will seek to avoid the use of materials that are believed to, or have been proven to, pose a hazard to the environment or health of humans where they are installed, produced or where their raw material is extracted. The design will prioritise the specification of low VOC, formaldehyde and phthalate materials, both in terms of cleaning products and products used for the internal finishes, minimising potential sources of internal air pollution where possible.

5.3 STADIUM DESIGN

The design of the stadium has looked to best practice guidance for its setting and orientation. The primary consideration in positioning is in relation to the sun-path and prevailing wind. The proposed north-south orientation has been selected to minimise the impact of the setting sun on the teams playing in the stadium.

The stadium roof provides an excellent opportunity to integrate renewable technologies through the installation of Photovoltaic panels within the design proposal. Photovoltaics will be considered at the next stage of the design to further reduce carbon emissions of the as the required carbon emissions saving will be achievable through ASHP technologies alone.

6 ENERGY AND CARBON REDUCTION

POLICY CS22: Sustainable Construction

POLICY CS23: Renewable and low carbon energy generation

The following strategies concerning energy, transport and whole life cycle carbon detailed in this section are aimed at reducing the carbon emissions to meet climate change targets and meeting the requirements of Policy CS23.

6.1 ENERGY STRATEGY

Woking Borough Council has set out its aspiration for its future in the Woking 2050 Strategy, which looks at the whole way of living and the influence that this has on the environment. A central thread of this strategy is to take a strong lead on tackling climate change.

The objective in the development of the Energy Strategy for Cardinal Court has been to maximise the viable reductions in total carbon emissions. In meeting this challenge, the proposed strategy will utilise the following energy hierarchy LEAN – CLEAN – GREEN, allowing consideration of the building from its construction elements through to the application of renewable technologies.

6.1.1 Be Lean

Following the energy hierarchy, the environmental and servicing design strategy for the development first aims to minimise the energy demands through passive design opportunities, while considering the buildings form, mass and fabric.

Significant consideration has been given to how the building fabric will respond to its environment that the energy consumption of the building is reduced as far as possible through passive means and energy efficient active systems.

The proposed building fabric is designed to exceed the minimum fabric requirements of Building Regulations Part L (2013), where possible and feasible. Building fenestration balances the need of good daylight, without leading to excessive summer time solar gain.

The project is designed for natural ventilation, when the climate allows, with mechanical ventilation with heat recovery (MVHR) systems providing ventilation when Natural Ventilation is not appropriate. The combination provides a good balance of high-efficiency ventilation strategies throughout the department.

6.1.2 Be Clean

How buildings are served with energy should then be considered, for example whether the application of a mini-district energy network would provide carbon savings.

A feasibility study was undertaken to identify if a centralised energy network is suitable for Phase 1 of the development. In line with similar studies carried out as part of the Outline Planning submission, it was identified that centralised systems would not be appropriate for the development.

The integration of Combined Heat and Power (CHP) was considered however, traditional heat led energy networks – such as Combined Heat and Power – are coming under scrutiny in terms of their long-term carbon reduction potential. As they are gas fired, they rely on the burning of gas to generate their heat and power.

6.1.3 Be Green

Finally, the benefits of low and zero carbon systems are considered. A range of low and zero carbon technologies were appraised as potential onsite energy generation sources. The most suitable for the development were identified as Air Source Heat Pumps (ASHP). Policy CS23 emphasises the use of using renewable technologies in all current and future projects.

6.2 PROPOSED STRATEGY

The Energy Statement submitted in support of this application explains that overall carbon emissions will be reduced through the use of a high performing fabric with low U-Values and good air permeability as well as selecting efficient systems such as Air Source Heat Pump (11kW and 14kW) have been selected for each dwelling.

During the next stages of the design evolution, further improvements to the residential systems will be investigated to provide further carbon emissions reductions.

Site-wide	Regulated Carbon dioxide savings	
	(Tonnes CO2 per annum)	(%) improvement
Saving through passive design and energy efficient measures	116.6	8.6%
Savings through use of renewable energy technology and decentralise heat	233.0	17.2%
Total cumulative savings	349.6	25.8%

See the Energy Strategy report issued by Elementa in support of this submission for further information.

6.3 FLEXIBILITY AND ADAPTABILITY

A future proofed development will meet the challenges of climate change, including flood resilience, thermal comfort and water and energy management or changing to the need of the residents.

Computation environmental analysis were used to model the potential risk for future climatic scenarios. Through rational glazing areas and natural ventilation strategies homes will reduce potential risk.

6.4 SUSTAINABLE CONSTRUCTION

The construction process will be approached in a sustainable and proactive way, reducing potential construction impacts on neighbours and surrounding infrastructure. The project will sign up to the Considerate Constructors Scheme as part of the construction process, allowing the appointed contractor to take the management of the construction site beyond 'best practice'.

A comprehensive Construction Management Plan (CMP) has been developed to put in place strategies to mitigate effects during the construction process.

The development will look to utilise local works in the construction process – provide local economic support.

There are opportunities to seek improvements across the supply chain and support further innovation to the approach to building design, specification, construction, and ongoing operations – these opportunities will be fully explored.

7 WATER AND DRAINAGE

POLICY CS9: Flooding and water management

The design team recognises that water should be treated as a precious resource. Therefore, careful consideration has been given to opportunities for conservation through water efficiency measures, while identifying how water can be reused and the risks from flooding managed – including the application of Sustainable Urban Drainage Systems (SUDs) to reduce surface water runoff. Policy CS9 outlines that developments should incorporate appropriate SUDs as part of any development proposals.

7.1 WATER EFFICIENCY STRATEGY

Water consumption in the UK has risen over recent years, which represents a strain on both natural resources and water treatment facilities. Water use can be minimised through the implementation of a number of different strategies.

The design prioritises the reduction of water consumption through efficient fittings, sanitary ware, and appliances, using significantly less water than standard.

The water strategy proposed for the scheme will look to incorporate flexibility in the specification of water fixtures and fittings, allowing for the inclusion of different solutions that will offer:

- Occupant satisfaction
- Require performance
- Feasible and viable costs

In line with Woking Borough Council's Housing Standard, the residential dwellings planned will meet the water consumption requirements targets - <110 litres/ per/ day.

Stadia and Non-residential Buildings

Water consumption is equally important within non-residential buildings, through the requirements of the BREEAM process, water consumption will be closely controlled and monitored. Innovative water saving measures are to be invested as part of the swimming pool design.

The following consumption levels will be considered to reduce consumption within non-residential buildings:

- All WCs to have a dual flush cistern with an effective flush volume of 4.5 litres or less with appropriate guidance or symbols to instruct the user on the operation,
- Bathroom taps flow rate: 4-6 litres/min
- Showers flow rate: 9-12 litres/min.
- Water efficient dishwashers and washing machines

Consideration will be given to installing a water meter on the mains water supply within non-residential buildings a pulsed output to enable connection to a 'Building Management System' (BMS) for the monitoring of water consumption. A mains water leak detection system will be installed, where feasible, to reduce the volume of potable water which may be lost due to leaking sub-surface pipework.

7.2 SUSTAINABLE URBAN DRAINAGE

The proposed development will result in much of the site being covered by new buildings, this limits the SUDs opportunities that the site could employ to reduce the sites runoff rate.

A number of SUD strategies are proposed such as green roof, bio-retention landscaped infiltration areas, permeable pavements, geo-cellular storage as part of the development. Those strategies will

naturally capture and store water during a rain even, reducing the return period runoff rate to the existing combined sewer, stormwater infrastructure.

Green roofs will not only delay rainwater runoff from the site but also provides additional biodiversity, and water quality improvements prior to reaching surface water infrastructure.

Full details of the surface water management strategy and sustainable urban drainage strategies is included within the *Flood Risk Assessment and Drainage Strategy* provided in support of this submission.

8 WASTE AND MATERIALS

POLICY CS22: Sustainable Construction

8.1 CONSTRUCTION AND OPERATION

Policy CS22 states that all new developments should facilitate the reduction of waste and the recycling and composting of the waste produced. Consideration of the management and waste minimisation will be made a priority. Waste disposal through landfill or incineration have detrimental impact on the environment and so will be avoided wherever possible.

Construction waste is to be managed in an environmentally sensitive manner, with materials being reused, where possible, or made available for recycling, or reuse in other development schemes in line with Policy CS22.

A Site Waste Management Plan (SWMP) will be developed prior to construction, outlining waste management plans for excavation and construction onsite. Opportunities to retain and reuse material generated by site enabling works will be explored and exploited where viable.

A Waste Management Plan (WMP) has been prepared for the Woking FC Stadium Development.

The residents will collect domestic refuse from the apartments via refuse chutes which will be located within secure and ventilated rooms at each vertical circulation core.

8.2 MATERIALS

The selection of sustainable materials with a low environmental impact and their sustainable procurement are to be a key parameter in the specification of materials, together with their end-of-life disposal.

Specification of materials will look to protecting local and global ecosystems and human health, by avoiding the use of harmful building materials and processes.

The development has the potential to generate considerable amounts of waste material, both during the construction phase and over the course of its lifetime. Making recycling and waste management as an important element of a well-designed and functional development.

Preference is to be given to the selection and specification of sustainable materials with a low environmental impact over the course of their lifetime. Consideration will be given to materials specified, with the BRE's Green Guide to Specification and Environmental Product Declaration (EPDs) as methods available to guide this process.

Timber used will be FSC specified where possible and viable, allowing for sustainable sourced materials, with a suitable chain of custody. Healthy materials will be utilised, reducing potential detrimental impact on human health. The design will prioritise the specification of low VOC materials, minimising potential sources of internal air pollution.

Materials are to be locally sourced, and from recycled sources where viable and in line with the proposed design intent. Full consideration of the sites environmental context when specifying external materials will be given, providing long-lasting robust landscape. The design team will investigate various constructability techniques, including pre-fabrication and end-of-life disassembly.

9 GREEN INFRASTRUCTURE AND ECOLOGY

POLICY CS1: A spatial strategy for Woking Borough

POLICY CS7: Biodiversity and nature conservation

Well-designed open spaces that relate to their surrounding are an important part of a holistic and successful design, with the health and wellbeing benefits of attractive landscape being well known.

The existing context of the natural flora and fauna of the site will be carefully considered and respected, with appropriate mitigation and enhancement measures being provided. This is in line with the spatial vision stated in the WBC Core Strategy that highlights the need for the borough to include good quality green spaces that are easily accessible.

The proposed landscape strategy looks to provide an enhancement to biodiversity and a rich and variable ecological response. Policy CS1 outlines that the development must not adversely impact the Green Belt and existing conservation areas.

A series of soft landscapes are proposed, including a range of planting, trees and hedges.

9.1 HEALTHY STREETS

A healthy streets approach has been applied, delivering comfortable and welcoming spaces, providing clear placemaking, and wayfinding for all users.

Community streets are set between buildings and have been designed to provide a pedestrian focussed space, combining a range of planting, seating, and public spaces. Connections between the townhouses and streets will be softened through the application of herbaceous planting and soft scaping.

The streets will also provide complimentary SUDs benefits will be realised through landscape design. Rain gardens form part of the street strategy, with tree lined streets allowing rainfall to be captured and infiltrate into the ground.

Private garden design to enhance biodiversity and ecological value of the site as a whole. Gardens integrated with water butts and rain gardens collecting rainwater at source for reuse.

9.2 NATURE CONSERVATION

Policy CS7 outlines that the council is committed to conserving and protecting existing biodiversity assets within the Borough. It requires development proposals to contribute to the enhancement of existing biodiversity. The council encourages new developments to make a positive contribution to

biodiversity through the creation of green spaces. Complimentary SUDs benefits will be realised through landscape design.

A preliminary Ecology Appraisal has been carried out including habitat survey, protected species assessment and ecological evaluation of the site. The assessment found that the habitats present are considered to be of site value only and they unlike are to support any rare species. A number of actions and further assessments will be required to identify, protect and enhance biodiversity on site (e.g. Great crested newt, bats, reptiles, breeding birds).

Recommendations to enhance the biodiversity value of the site include green roofs, SuDS strategies, wildlife planting, flowering lawn mix, nesting features for birds, roosting features for bats and additional deadwood habitats.

Full details of the Ecological appraisal and related strategies can be referenced in the *Preliminary Ecological Appraisal*.

An Arboricultural Impact assessment has been carried out. The assessment found that no existing trees on site are subject to Tree Preservation Order or Conservation area Restrictions. The development will require the removal of 31 individual trees out of 81. All works will consider the presented of species and the Ecological Appraisal will be consulted prior to the commencement of works.

Full details of tree retention and removal is provided within the *Arboricultural Impact Assessment (AIA)*.

The proposed development includes tree planting, planters, pocket parks, green and amenity gardens. Further details of the proposed landscaping strategy are included within the *Design and Access Statement*.

6.7.1

As with the surface materials planting will be used to define character throughout the development. Much of the planting will be above carparking and species will be selected to accommodate these constraints. A range of plant types will seek to enhance biodiversity as well as providing joy and colour for both residents and visitors.

- Legend:**
- Application boundary
 - Proposed building
 - Existing vegetation retained and enhanced
 - Main Entrance & Central Boulevard**
 - Trees in rain garden
 - Frontage planting
 - Play Streets**
 - Planters with mounding and trees
 - Frontage planting
 - Podium Gardens**
 - Planters along private terraces with specimen shrub
 - Central usable space with grass area, trees and shrub planting
 - Pocket Parks**
 - Frontage planting
 - Usable space with grass area, trees and shrub planting
 - Car Park and boundary**
 - Tree and evergreen planting
 - Green Roofs**
 - Green roofs - refer to section 6.10



Figure 4: Soft Landscape Strategy from Design and Access Statement

10 APPENDIX

10.1 APPENDIX A- Woking Borough Council Core Strategy (2012)

POLICY CS1: A SPATIAL STRATEGY FOR WOKING BOROUGH

The Core Strategy will make provision for the delivery of the following scale of uses between 2010 and 2027.

- 4,964 net additional dwellings, with an overall affordable housing provision target of 35%
- 28,000 sq.m of additional office floorspace and 20,000 sq.m of warehousing floorspace.
- 93,900 sq.m of additional retail floorspace.

Woking Town Centre will be the primary focus of sustainable growth to maintain its status as an economic hub with a flourishing, diverse and innovative economy and a transport hub which provides transport services, links and communication linking people to jobs, services and facilities.

POLICY CS7: BIODIVERSITY AND NATURE CONSERVATION

The Council is committed to conserving and protecting existing biodiversity assets within the Borough. It will require development proposals to contribute to the enhancement of existing biodiversity and geodiversity features and also explore opportunities to create and manage new ones where it is appropriate.

The Council will encourage new development to make positive contribution to biodiversity through the creation of green spaces, where appropriate, and the creation of linkages between sites to create a local and regional biodiversity network of wildlife corridors and green infrastructure. It will seek to retain and encourage the enhancement of significant features of nature conservation value on development sites.

POLICY CS9: FLOODING AND WATER MANAGEMENT

The Council will determine planning applications in accordance with the guidance contained within the NPPF. The SFRA will inform the application of the Sequential and Exceptional Test set out in the NPPF.

The Council expects development to be in Flood Zone 1 as defined in the SFRA. Applications or allocations within Flood Zone 2 will only be considered if it can be demonstrated that there are no suitable alternatives in areas at lower risk.

POLICY CS10: HOUSING PROVISION AND DISTRIBUTION

The Council will make provision for at least 4,964 net additional dwellings in the Borough between 2010 and 2027 in accordance with the distribution set out in the table below.

In areas at risk of flooding, proposals (including flood compensation proposals) with implications for biodiversity will be carefully considered for all levels of ecological designation. Where the development proposals, either alone or in combination with other developments, are demonstrated to adversely affect an SPA, SAC or RAMSAR site, permission will not be granted.

POLICY CS11: HOUSING MIX

All residential proposals will be expected to provide a mix of dwelling types and sizes to address the nature of local needs as evidenced in the latest Strategic Housing Market Assessment in order to create sustainable and balanced communities.

The appropriate percentage of different housing types and sizes for each site will depend upon the established character and density of the neighbourhood and the viability of the scheme.

The Council will not permit the loss of family homes on sites capable of accommodating a mix of residential units unless there are overriding policy considerations justifying this loss.

POLICY CS11: AFFORDABLE HOUSING

Between 2010 and 2027 the overall target for affordable housing is 35% of all new homes, equivalent to 1,737 new affordable homes.

All new residential development on previously developed (brownfield) land will be expected to contribute towards the provision of affordable housing in accordance with the following criteria.

- On sites providing 15 or more dwellings, or on sites of over 0.5ha (irrespective of the number of dwellings proposed), the Council will require 40% of dwellings to be affordable.
- On sites providing between 10 and 14 new dwellings, the Council will require 30% of dwellings to be affordable.
- On sites providing between five and nine new dwellings, the Council will require 20% of dwellings to be affordable or a financial contribution equivalent to the cost to the developer of providing 20% of the number of dwellings to be affordable on site, which will be negotiated on a case-by-case basis.
- On sites providing fewer than five new dwellings, the Council will require a financial contribution equivalent to the cost to the developer of providing 10% of the number of the dwellings to be affordable on site.

The affordable housing threshold and targets will apply to all new homes that are being proposed. All new residential development on Greenfield land and land in public ownership will be required to provide 50% of the dwellings as affordable housing, irrespective of the site size or number of dwellings proposed.

POLICY CS15: SUSTAINABLE ECONOMIC DEVELOPMENT

To accommodate the predicted future growth in economic development¹⁰ required for Woking's economy to grow, ensure sustainable employment development patterns, promote smart growth and business competitiveness, and allow for flexibility to cater for the changing needs of the economy the Council will:

- permit redevelopment of outmoded employment floorspace to cater for modern business needs
- support small and medium sized enterprise (SME) formation and development by encouraging a range of types and sizes of premises including provision for incubator units, managed workspace and serviced office accommodation
- encourage improved ICT infrastructure in refurbished and redeveloped sites
- encourage workspace and ICT infrastructure as an integral part of residential development, where appropriate to support home working
- support childcare facilities close to places of employment

POLICY CS17: OPEN SPACE, GREEN INFRASTRUCTURE, SPORT AND RECREATION

All proposals for new residential development (other than replacement dwellings) will be required to contribute towards the provision of open space and green infrastructure, including the following:

- children's play areas and outdoor recreational facilities for young people.
- outdoor sports facilities.

Developers will be expected to contribute to provision through the Community Infrastructure Levy (CIL) or on larger sites through on-site provision and/or a S106 contribution as appropriate.

Development involving the loss of open space will not be permitted unless:

- alternative and equivalent or better provision is made available in the vicinity
- or the development is directly related to the enhancement of the open space.

POLICY CS18: TRANSPORT AND ACCESSIBILITY

The Council is committed to developing a well integrated community connected by a sustainable transport

system which connects people to jobs, services and community facilities, and minimises impacts on biodiversity. This will be achieved by taking the following steps:

- Locating most new development in the main urban areas, served by a range of sustainable transport modes, such as public transport, walking and cycling to minimise the need to travel and distance travelled.
- Ensuring development proposals provide appropriate infrastructure measures to mitigate the adverse effects of development traffic and other environmental and safety impacts (direct or cumulative). Transport Assessments will be required for development proposals, where relevant, to fully assess the impacts of development and identify appropriate mitigation measures. Developer contributions¹³ will be secured to implement transport mitigation schemes.

- Requiring development proposals that generate significant traffic or have significant impact on the Strategic Road Network to be accompanied by a travel plan, clearly setting out how the travel needs of occupiers and visitors will be managed in a sustainable manner.
- Supporting proposals that deliver improvements and increased accessibility to cycle, pedestrian and public transport networks and interchange facilities. In particular, proposals to improve easy access between Woking Rail Station and the town centre will be encouraged.
- Implementing maximum car parking standards for all types of non-residential development, including consideration of zero parking in Woking Town Centre, providing it does not create new or exacerbate existing on-street car parking problems. Minimum standards will be set for residential development. However, in applying these standards, the Council will seek to ensure that this will not undermine the overall sustainability objectives of the Core Strategy, including the effects on highway safety. If necessary, the Council will consider managing the demand and supply of parking in order to control congestion and encourage use of sustainable transport.

POLICY CS18: SOCIAL AND COMMUNITY INFRASTRUCTURE

The Council will work with its partners to provide accessible and sustainable social and community infrastructure to support growth in the Borough. It will do so by promoting the use of social and community infrastructure for a range of uses.

The loss of existing social and community facilities or sites will be resisted unless the Council is satisfied that:

- there is no identified need for the facility for its original purpose and that it is not viable for any other social or community use, or
- adequate alternative facilities will be provided in a location with equal (or greater) accessibility for the community it is intended to serve
- there is no requirement from any other public service provider for an alternative social or community facility that could be met through change of use or redevelopment.

Applicants will be expected to provide evidence that they have consulted with an appropriate range of service providers and the community.

The provision of new community facilities will be encouraged in locations well served by public transport, pedestrian and cycle infrastructure.

The Council will work with other public sector bodies to encourage efficient use of public sector assets, such as co-location, to facilitate the delivery of community facilities.

Developers will be required to provide and/or make a contribution towards the provision of community facilities where it is relevant to do so. The methods of securing financial contributions are set out in policy CS16: Infrastructure delivery.

POLICY CS21: DESIGN

Proposals for new development should meet the criteria below:

- Create buildings and places that are attractive with their own distinct identity; they should respect and make a positive contribution to the street scene and the character of the area in which they are situated, paying due regard to the scale, height, proportions, building lines, layout, materials and other characteristics of adjoining buildings and land. Tall Buildings could be supported in Woking Town Centre, if well designed and can be justified within the context. The impacts of any proposal will be fully assessed and an Area Action Plan will be prepared to set out details of how it will be managed.
- Achieve a satisfactory relationship to adjoining properties avoiding significant harmful impact in terms of loss of privacy, daylight or sunlight, or an overbearing effect due to bulk, proximity or outlook.
- Be designed in an inclusive way to be accessible to all members of the community, regardless of any disability and to encourage sustainable means of travel.
- Incorporate landscaping to enhance the setting of the development, including the retention of any trees of amenity value, and other significant landscape features of merit, and provide for suitable boundary treatment/s.
- Protect and where possible enhance biodiversity within new developments (as set out in policy CS7 Biodiversity and Nature Conservation). The Council encourages the incorporation

of built-in measures in new construction design. Examples of such measures may include green walls, brown roofs and the installation of bird and bat boxes.

- Ensure provision of well designed Suitable Accessible Natural Greenspace, (SANG) where necessary.
- Ensure schemes provide appropriate levels of private and public amenity space.
- Create a safe and secure environment, where the opportunities for crime are minimised.
- Incorporate measures to minimise energy consumption, conserve water resources, use the principles of sustainable construction and provide for renewable energy generation in accordance with policy CS22 Sustainable Construction and CS23 Renewable and Low Carbon Energy Generation.
- Incorporate provision for the storage of waste and recyclable materials and make provision for sustainable drainage systems.
- Ensure the building is adaptable to allow scope for changes to be made to meet the needs of the occupier (life time homes and modern business needs).
- Be designed to avoid significant harm to the environment and general amenity, resulting from noise, dust, vibrations, light or other releases.

POLICY CS22: SUSTAINABLE CONSTRUCTION

New residential development on previously developed land will be required to meet the energy and Carbon Dioxide (CO²) and water components of the Code for Sustainable Homes level 3 (or any future national requirement) from now until 31 March 2013, the energy and CO² and water components of at least Code level 4 from 1 April 2013 and the energy and CO² and water components of Code level 5 from 1 April 2016. New residential development is encouraged to meet the full requirements of each Code level, with particular encouragement for the material and ecology elements. Where the scale, nature and location of a development would justify a higher Code level, the Council will negotiate with developers to achieve that because of the lower cost of developing such sites.

New residential development on greenfield sites will be required to meet the Code for Sustainable Homes level 5 (or any future national requirement) from now because of the relatively lower cost of developing such sites.

All new development should consider the integration of Combined Heat and Power (CHP) or other forms of low carbon district heating in the development. All new development in proximity of an existing or proposed CHP station or district heating network will be required to be connected to it unless it can be demonstrated that a better alternative for reducing carbon emissions from the development can be achieved. Details of the zones where connection will be required will be set out in an SPD and will be determined by factors such as the capacity of the existing CHP network, distance from it and physical constraints.

Where it can be demonstrated that the standards set out in this policy cannot be met on site, permission will only be granted if the applicant makes provision for compensatory energy and CO² and water savings elsewhere in the Borough equivalent to the carbon savings which would have been made by applying this policy.

Electric vehicle charging points

The Council is actively promoting electric vehicle charging points and has already provided a number of these in the Borough. These are of particular value when the electricity source is low carbon. Details of when new development will be expected to provide electric vehicle charging points or when a contribution towards public charging points will be required, will be set out in an SPD.

Design and construction

The design of all new developments will be required to take account of layout, landform, orientation and landscaping to maximise efficient use of energy and adapt to the impacts of climate change. The design of all new developments should facilitate the reduction of waste and the recycling and composting of the waste produced.

All developments should consider the use of sustainable construction techniques that promote the reuse and recycling of building materials. All development is encouraged to use responsible

resourcing of materials and is encouraged to source materials locally. All new residential development is encouraged to meet the 'materials' elements of the Code.

Ecology and biodiversity

All development is encouraged to make biodiversity enhancements such as green roofs and bird and bat boxes. All new residential development is encouraged to meet the 'ecology' elements of the Code.

POLICY CS22: SUSTAINABLE CONSTRUCTION

The Council recognises significant progress needs to be made if national targets for the generation of renewable energy are to be met and encourages the development of stand-alone renewable energy installations in the Borough. All proposals will be considered on their individual merits with regard to scale, location, technology type and cumulative impact on the surrounding area.

The Council particularly encourages applications from community-based and community-owned projects.

Applicants should take appropriate steps to mitigate any adverse impacts of proposed development through careful consideration of location, scale, design and other measures. All reasonable steps to minimise noise impacts should be taken.

Applicants should provide sound evidence of the availability of the resource which will be harnessed or the fuel to be used, including details of the adequacy of transport networks where applicable and detailed studies to assess potential adverse impacts such as noise nuisance, flood risk, shadow flicker and interference with telecommunications.

10.2 APPENDIX B – CLIMATE NEUTRAL DEVELOPMENT CHECKLIST

This checklist is provided by Woking Borough Council to be used in conjunction with the Council's Climate Change Supplementary Planning Document.

Applicants' Climate Neutral Development Checklist

This checklist is to be read in conjunction with the Council's Climate Change Supplementary Planning Document, which gives detailed guidance on the implementation of policies CS22 'Sustainable construction', and CS23 'Renewable and low carbon energy generation' of the Core Strategy.

Application Site Address
Enter Address
Cardinal Court, Woking GU22

1. Location & Transport	Yes	No	N/a
Policies achieve climate neutrality by: lowering greenhouse gas emissions by reducing the need to travel and distance travelled; increasing the proportion of travel by sustainable modes such as walking, cycling, public transport and lower carbon vehicles; and reducing climate change vulnerability by locating development away from areas liable to flooding.			
Have you considered including measures to reduce dependence on private car-borne transport and influence a shift to more sustainable modes of travel?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the proposal provide appropriate levels and standards of parking (including cycle parking)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Will the development incorporate facilities for charging plug-in and other ultra-low emission vehicles as appropriate?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you submitted a Travel Statement (for smaller-scale developments) or Travel Plan (for proposals that generate significant traffic) with your proposal?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the location of the proposed development minimise distances to the main employment centres, shops, recreation and community facilities and schools?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you ensured the development is located away from an area liable to flooding, and is not dependent on transport links (roads, footpaths etc.) liable to flooding?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Layout & Design	Yes	No	N/a
Policies achieve climate neutrality by: lowering greenhouse gas emissions by reducing energy demands for heating and cooling; and building in resilience to the impacts of climate change such as flooding and heat through good layout and design.			
Does the proposed site layout maximise the potential for passive solar gain?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you considered how buildings could be designed to maximise the capture and use of passive solar energy?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you considered designing in measures to prevent excess solar gain in summer?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you designed the layout to use landform and landscape to benefit from shelter?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you considered the potential for passive cooling and ventilation in summer?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you considered how existing and proposed trees and shrubs could be used to provide shade for car parks and other private and public open space?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Energy and carbon reduction	Yes	No	N/a
Policies achieve climate neutrality by: reducing greenhouse gases by promoting developments that reduce the need for energy, use energy efficiently, supply energy efficiently and use renewable or low or zero carbon technologies.			
Have you considered designing in measures to maximise energy efficiency?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you explored ways to secure a proportion of energy demand through the installation of renewable and/or low and zero carbon technologies?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you checked whether your proposed development falls within a 'Potential District Heat Area', or a zone requiring buildings to be 'CHP Ready'?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. Water & Drainage Policies achieve climate neutrality by: incorporating adaptation measures to ensure development is resilient to increased risk of flooding or droughts; and reducing water demand and increasing more efficient use of water as periods of drought increase.	Yes	No	N/a
Have you considered designing in water efficient fittings and appliances?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you considered incorporating rainwater recycling and harvesting systems?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you considered incorporating recycling and harvesting facilities for grey water?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you considered designing in measures to minimise surface water run-off e.g. minimising paved areas and impermeable surfaces?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you considered incorporating sustainable urban drainage (SUDS) into your development proposal? ¹	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you considered how any SUDS techniques used will achieve wider ecosystem functions? E.g. contribution to amenity, recreation, wildlife etc.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you defined maintenance responsibilities for any proposed SUDS?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. Waste & Materials Policies achieve climate neutrality by: facilitating the reduction, recycling and reuse of waste and providing opportunities to improve materials resource efficiency to reduce greenhouse gases.	Yes	No	N/a
Have you considered how the design of the development can facilitate the reduction of waste and the recycling and composting of waste generated by occupants?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you adopted procedures which will minimise construction waste e.g. re-use and recycle waste?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you considered using locally and/or responsibly sourced building materials?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the proposal encourage the use of re-used, recycled, recyclable and durable products e.g. salvage material or re-using/recycling demolition materials for hardcore and aggregate?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. Green Infrastructure & Ecology Policies achieve climate neutrality by: adapting the built environment to climate change impacts such as flooding, high temperatures and the urban heat island effect, whilst delivering a wide range of additional social, economic and environmental benefits such as biodiversity enhancements.	Yes	No	N/a
Does the proposal include the provision of green and blue spaces? E.g. parks, green corridors, water bodies and sustainable drainage systems.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you considered how green and blue spaces within the development will be connected to the wider green infrastructure assets of the Borough?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If the development involves the loss of any open space, is alternative and equivalent or better provision made elsewhere, or is the development directly related to the enhancement of the open space?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Will the proposal avoid any loss of trees, hedgerows and other vegetation of amenity and/or environmental significance?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you considered adopting measures to conserve, enhance and/or restore biodiversity in and around the development?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Will you be protecting existing ecological features from damage during site preparation and completion of construction works where practicable?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If the proposed development is likely to cause adverse impacts to designated landscape sites, have adequate mitigation measures been proposed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the proposal provide for on-going management of green and blue spaces, including biodiversity habitats?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

¹ From 6 April 2015 all 'major' planning applications must consider sustainable drainage systems – see the Council's [Advice Note](#).

DEEP GREEN ENGINEERING

Elementa

80 Cheapside

London

EC2V 6EE

T +44(0)203 697 9300

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Unit 1, Library Avenue

Harwell Oxford

Didcot

Oxfordshire

OX11 0SG

T +44(0)1235 820300

–

Contact

Rob Harris

Rob.harris@elementaconsulting.com

–

Nathan Millar

Nathan.millar@elementaconsulting.com

London, UK

Oxford, UK

Oakland, CA

San Jose, CA

Los Angeles, CA

Seattle, WA

Washington, DC

Richmond, VA

Austin, TX

Atlanta, GA

Vancouver, BC

Calgary, AB

Toronto, ON

Victoria, CB

