Chapter 4: The Proposed Development

INTRODUCTION

4.1 This chapter of the ES presents a description of the Proposed Development sought for approval as part of the detailed planning application. It provides sufficient information on the Proposed Development to aid the identification and assessment of potential environmental impacts and likely environmental effects across the technical topic areas addressed by the EIA as presented in ***ES Volume 1, Chapters 6 – 12*** and ***ES Volume 2: Townscape and Visual Impact Assessment (TVIA)***.

DESCRIPTION OF THE PROPOSED DEVELOPMENT

4.2 The Proposed Development will provide a total of 1,048 residential units and a new 9,026 capacity stadium for Woking Football Club (FC), along with a medical centre, flexible retail space, commercial space and a community concierge building.

4.3 The Proposed Development comprises the construction of five residential "Blocks" which will range in height, the smaller elements will be two storeys, with the tallest elements up to 10 storeys, a new stadium and single-storey community concierge building. The five residential blocks are located to the south and west of the proposed stadium (Figure 4.1, Figure 4.2 and Figure 4.3).

4.4 Table 4.1 outlines the total amount of Net Internal Area (NIA), Gross Internal Area (GIA) and Gross External Area (GEA) of the Proposed Development, split by land use.

Table 4.1 Proposed Land Uses and Quantum of Development

Land Use (Use Class)	NIA (m2)	GIA (m2)	GEA (m2)
Residential (Including the Community Concierge Building and Ancillary Space) (C3)	61,282	81,186	87,029
Stadium (Including Hospitality Areas, Kiosks etc., and Ancillary Space) (D2)	7,356	7,732	8,125
Medical Centre (Including Pharmacy and Ancillary Space) (D1)	937	1,151	1,231
Flexible Retail Space (A1/2/3)	334	335	359
Commercial	416	429	478
Total	**70,325**	**90,833**	**92,222**

Figure 4.1 Proposed Development Looking East

Figure 4.2 Proposed Development Looking South

Figure 4.3 Layout of the Proposed Development (Ground Floor)

Stadium

4.5 The proposed stadium lies on a north – south axis and has a capacity of 9,026 spectators comprising 4,168 seats located within the east and west stands and a further 4,858 capacity for standing are located in the north and south stands. The stadium also provides a variety of ancillary uses within a flexible layout that delivers usable space on both match days and non-match days. A medical centre, retail units and hospitality areas are located in the north west corner of the stadium and are accessible at ground level from the main boulevard proposed around the stadium. Table 4.1 details the proposed land uses and their respective area schedules.

Massing

4.6 The proposed stadium has a north/south orientation. The design is a combination of two distinct masses and from above appear as two distinct "L's" with a height of 5.5 storeys (with a maximum height of 42.8m AOD on the western side, stepping down to 3 storeys on the east (as shown in Figure 4.4 and Figure 4.5). The result is that the north and west elevations of the stadium have a greater height than the east and west elevations which drop in scale in order to respect the scale and massing of neighbouring residential buildings. The north and west sides of the stadium address the main entrance and main circulation route through the site. The east and west sides are simpler in their form and massing.

Appearance

4.7 The north and west elevations are the "public face" of the stadium seen from the main approach and the residential street. They contain glazed frontage at ground floor level, providing active frontage. The upper areas of the elevation contain generous amounts of glazing.

4.8 The south and east elevations "wrap" around the two smaller spectator decks and have simple and functional uncluttered appearance. Entrance points are clearly defined within a solid precast concrete base, which sits beneath a lighter translucent upper.

Figure 4.4 Stadium Massing and Height

Figure 4.5 Stadium Massing showing two "L" shapes

Residential

4.9 A total number of 1,048 residential units are proposed across the five residential blocks. In addition, a single storey community concierge building is provided to the north-west of the stadium, which will provide a variety of services including a facility to take deliveries, provide space for bike repair and facilitate a car share scheme. Table 2 presents the number of units located in each residential block, in addition to their respective total floorspace (Net Internal Area (NIA), Gross Internal Area (GIA) and Gross External Area (GEA)).

Table 4.2 Total Number Residential Units and Total Floorspace of Residential Blocks

Block	Number of Units	Number of Parking Spaces	Total Residential Floorspace		
			NIA (m^2)	GIA (m^2)	GEA (m^2)
Block 1	191	107	12,236	15,956	17,043
Block 2	277	121	15,531	19,570	20,924
Block 3	138	124	7,775	9,848	10,565
Block 4	211	260	12,271	15,314	16,503
Block 5	231	220	13,285	16,510	17,743
		20 possible tandem spaces			
Community Concierge	N/A	3	185	185	231
Total	**1,048**	**855**	**61,097**	**77,348**	**83,009**

4.10 The mix of unit sizes within each block is set out in Table 4.3. Of the total housing provision provided, 18% will be affordable housing located in Block 1.

Table 4.3 Unit Mix of Residential Units

Unit Type	Number of Units					
	Block 1	Block 2	Block 3	Block 4	Block 5	Total
Studio	-	58	30	26	26	**140**
1 Bed	54	88	33	53	51	**279**

Unit Type	Number of Units					
	Block 1	Block 2	Block 3	Block 4	Block 5	Total
2 Bed	137	58	29	57	71	**352**
3 Bed	-	-	-	1	-	**1**
1 Bed townhouse (TH)/Duplex	-	20	15	28	32	**95**
2 Bed TH	-	24	18	12	19	**73**
2 Bed Duplex	-	24	12	32	32	**100**
3 Bed TH	-	5	1	2	-	**8**
Total	**191**	**277**	**138**	**211**	**231**	**1,048**

Massing / Building Heights

4.11 Table 4.4 provides the building heights for Blocks 1-5 and the community concierge building. The scale of the residential development reduces in height to the perimeter boundaries, to respect the scale and massing of the adjacent residential buildings.

Table 4.4 Height and Storey Range of Residential Blocks and Community Concierge Building

Block	Storeys (range)	Max Height (AOD)
1	3-9	58.5m
2	3-9	58.5m
3	2-7	53.5m
4	6-10	62.5m
5	6-9	56.5m
Community Concierge Building	1	30m

Appearance

4.12 The materiality proposed is consistent across Blocks 1 to 5. The design proposes to use a mix of two tones of brick, with most of the larger areas being in a London multi stock type brick, which is warm in colour and visually soft in tone. The base of the blocks are a multi-grey, that form a plinth to the buildings. The break between plinth and upper brickwork floors, helps to break down the apparent scale of the building as well as defining the lower floors which are predominantly townhouses with their own front door access to the existing or new streets within the site.

4.13 The ground and upper brickworks floors are broken down by large glazed openings with floor to ceiling windows, and large glazed openings to maximise natural light.

4.14 The glazing provides a vertical rhythm to the façades, but this is articulated by the horizontal layering of the brickwork.

4.15 The tops of the buildings are capped by lightweight glazed floors. These are a mix of solid and clear glazed panels which is intended to visually merge the upper floors (which will be reflective) with the sky. In this way the top floors are visually less noticeable, and the buildings visually appears to stop at the brickwork level below.

4.16 The balconies provide a flourish at the end of the blocks and the brickwork façades between provide a more regular pattern, so the façades are not too busy, and move from highlight to a calm façade and then to another highlight.

4.17 These gable ends are strongly modelled with the balconies appearing set back within the façades, so the overall mass of the gables is greatly reduced. These deep-set balconies happen at gable ends and then allows a calmer longer run of regular façade to link these features.

4.18 The longer façades are broken by balconies that project and articulate the larger façade areas.

4.19 A further layer and incorporation of the 'natural tones' in the façades are the frames around balconies, entrances and some upper level framing to reveals. These provide another layer of subtle design change to break the regular façade pattern. These are intended to be in Corten or anodized finished, so they provide a complimentary earthy tone to these areas that echoes the strong earthy nature of the material palette.

Community Concierge Building Appearance

4.20 The community concierge building is a modern day 'gatehouse' and as such sits as a subservient simple elegant building adjoining the principal main site entry point. The architectural styling reflects the more 1930's styling, but in a contemporary way to complement the new buildings. It forms a bridge between Old and New. It will incorporate 1930's brick details, in a soft complementary red brick to match surrounding residential properties with extensive glazing to complement the larger residential properties opposite, see Figure 4.6.

Figure 4.6 Community Concierge Building Massing and Appearance

LANDSCAPING

4.21 The overall objective of the landscape and public realm strategy is to create a high quality environment that seeks to harmonise the two primary uses on site, namely the football stadium and the residential neighbourhood, see Figure 4.10.

4.22 These two uses have clear and distinct characteristics and the design of the external areas are, therefore, important in ensuring that the two can function successfully together as well as creating an attractive place to visit or to live.

Main Entrance

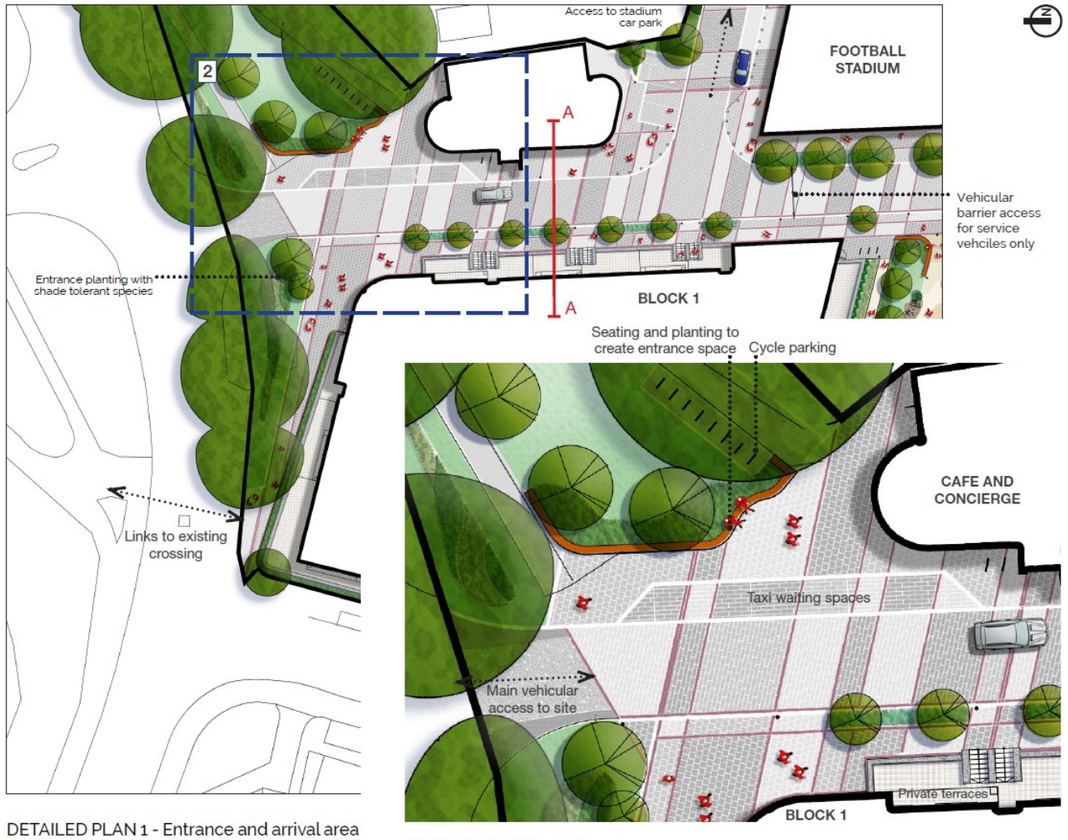
4.23 The main entrance to the Proposed Development seeks to provide a clearly defined arrival space (Figure 4.7). However, it also seeks to harmonise the uses of the new stadium and residential neighbourhood through well designed spaces. This will be achieved through the use of high-quality robust materials; additionally, paving will be used to enhance legibility through the use of contrasting banding and textures. Existing mature trees will be retained, and new trees planted at the entrance and around the periphery of the site.

Community Garden

4.24 The communal gardens set within the residential buildings will provide clearly defined communal and private amenity spaces for residents of each block. The community garden will include:

- Areas of lawn and mixed planting in raised planters above the car park areas below;
- Natural play elements for young children's play; and
- Provide seating integrated into the raised planters.

Figure 4.7 Main Entrance Landscaping



DETAILED PLAN 1 - Entrance and arrival area 1:500

DETAILED PLAN 2- Main entrance area - 1:250

Play Strategy

4.25 The public realm and communal gardens at podium level provide a variety of opportunities for recreation and playable landscapes for a range of ages and abilities.

4.26 An equipped play area is proposed between blocks three and four which will include a range of fixed and informal play for a range of ages.

4.27 Additionally, play streets are set between the residential blocks, see Figure 4.8, and have been designed to:

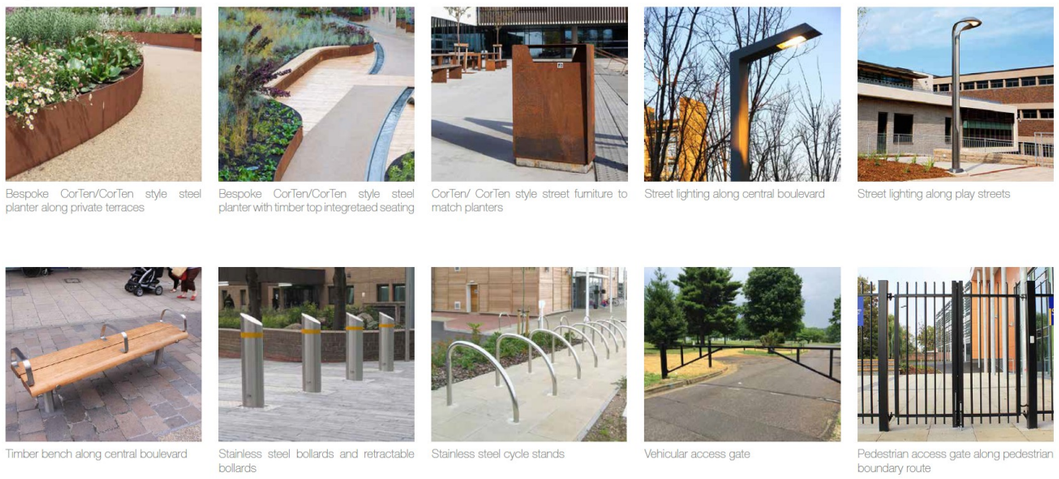
- Provide a clearly distinct character through use of materials and planting;
- Provide a pedestrian focused space;
- Incorporate planting, lawns and play within raised areas;
- Incorporate informal, natural play; and
- Accommodate below ground car park.

Figure 4.8 Play Street Strategy

Materials

4.28 The choice of surface materials and street furniture will assist in defining the different characteristics and uses of the spaces around the buildings, see Figure 4.9. This will help define a clear hierarchy, for example between public and private uses as well as the main access and the residential play streets.

Figure 4.9 Furniture Palette



Planting

4.29 As with the surface materials planting will be used to define character throughout the development, see Figure 4.11. 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.

Figure 4.10 Overall Public Realm Strategy

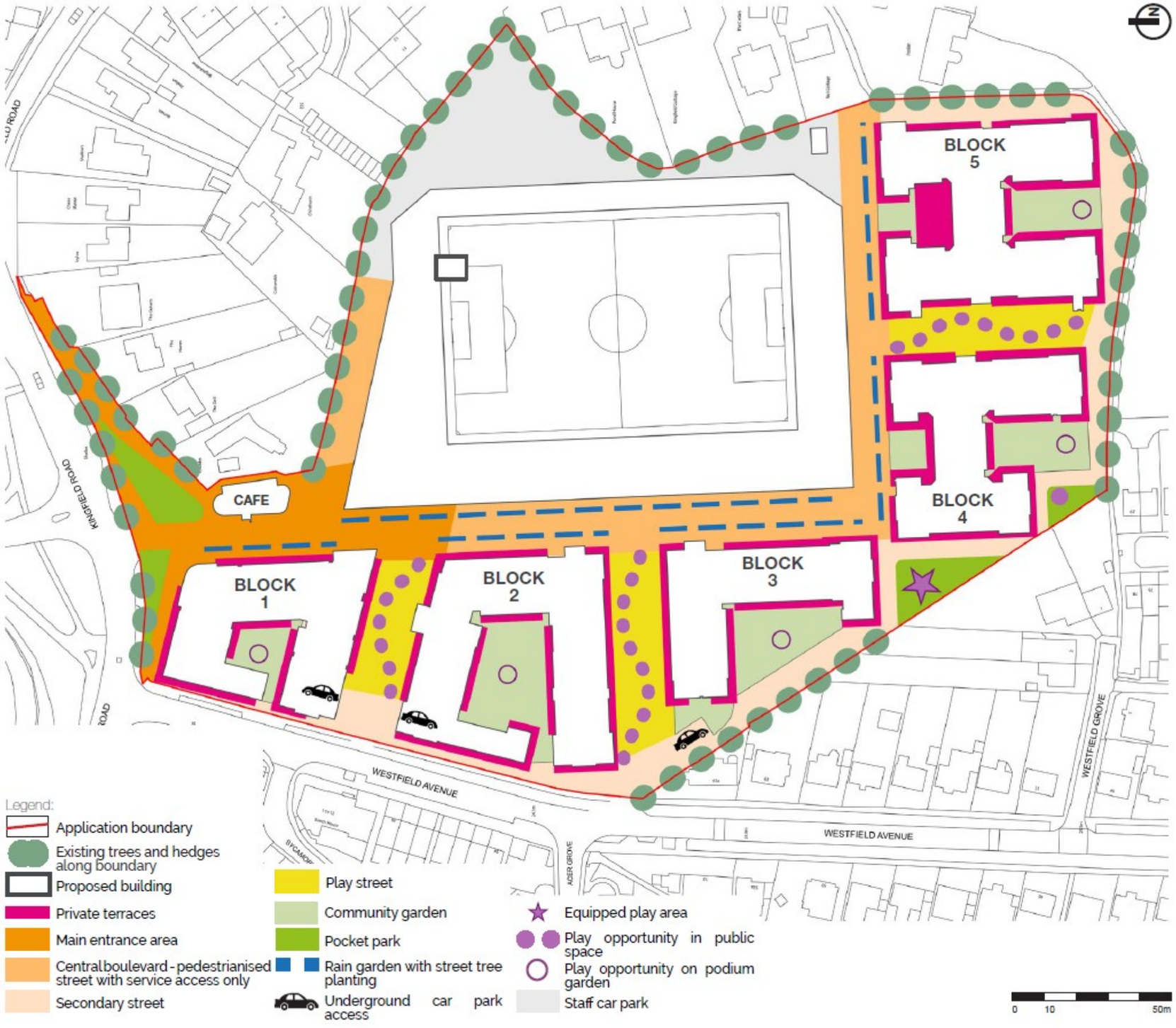


Figure 4.11 Planting Strategy

ACCESS, PARKING AND SERVICING

4.30 This section provides details regarding the proposed access to the site, parking provision and how servicing will be undertaken.

Access

Pedestrian and Cycle

The Proposed Development will be accessible from a number of locations on foot or bicycle. Access can be made from the north, west or south of the Proposed Development by active modes of travel.

Vehicular

4.31 Vehicles for the stadium will be able to access the Proposed Development from the northern access on Kingfield Road, whilst vehicles for the residential aspect of the Proposed Development will be able to access from the two accesses on Westfield Avenue leading to residential car parking at lower ground and basement levels of Blocks 1 to 5.

Servicing / Emergency Access

4.32 Servicing and refuse vehicles will access the Proposed Development from the Kingfield Road access located to the north of the Proposed Development. There is appropriate space on the internal road to allow for vehicles to stop to load and unload when necessary.

4.33 Emergency vehicles will access the Proposed Development from the Kingfield Road access located to the north of the Proposed Development. There will be no restrictions on access for emergency vehicles whilst a football match is ongoing.

4.34 Taxis have been designated a pick-up and drop-off point located to the north of the stadium on the internal road. There will be a total of three spaces which will also be shared with a pick-up and drop-off point for disabled users of the stadium.

Main Boulevard

4.35 The retail frontage along the west elevation of the stadium (north of the Main Boulevard) helps to create active frontage. The Main Boulevard also separates the residential areas from the stadium.

4.36 Servicing to the residential units for unloading or deliveries is provided via Kingfield Road (located to the north of the site), along the main boulevard.

4.37 Additionally, the main boulevard provides access to emergency vehicles throughout the site.

Car and Cycle Parking

Car Parking - Residential

4.38 The proposed level of car parking and cycle parking will accord with Woking Borough Council's parking guidelines, which are set out in 'Woking Borough Council Local Development Documents; Parking Standards Supplementary Planning Document'. Furthermore, the proposed level of car parking and cycle parking will also accord with Surrey County Council's (SCC's) parking guidelines, which are set out in Surrey's 'Vehicular and Cycle Parking Guidance'.

4.39 The Proposed Development will provide 855 residential car parking spaces, including a total of 20 tandem parking spaces,. Of these spaces, 64 will be visitor parking spaces, which will be provided within the parking blocks. Additionally, 3 spaces will be provided for the Community Concierge Building.

4.40 All residential car parking spaces will be fitted with passive electric charging points and the developer is committed to converting these to active charging points when the resident requires. Residents will be asked prior to moving in whether they require an electric charging space and then an active charging point will be fitted. The electric vehicle charging technology is proceeding at a considerable speed, and therefore it is deemed counterproductive to provide active charging points early or before they are required.

4.41 Figure 4.12, Figure 4.13 and Figure 4.14 illustrate the layout and extent of the car park at lower ground and basement levels.

Car Parking - Stadium

4.42 A total of 60 car parking spaces will be provided for the stadium use. The car parking spaces are to be located adjacent to the northern stand of the stadium and the coach parking space will be located in the turning head at the east of the stadium (and will only be used for the team coach on matchdays – this will not impede emergency vehicle access). The level of cycle parking at the stadium will be subject to an individual review and agreed with WBC. The level of provision of electric vehicle charging points for the proposed stadium is to be agreed with the WBC.

Figure 4.12 Section of Residential Car Park

Figure 4.13 Layout of Lower Ground Level Car Park

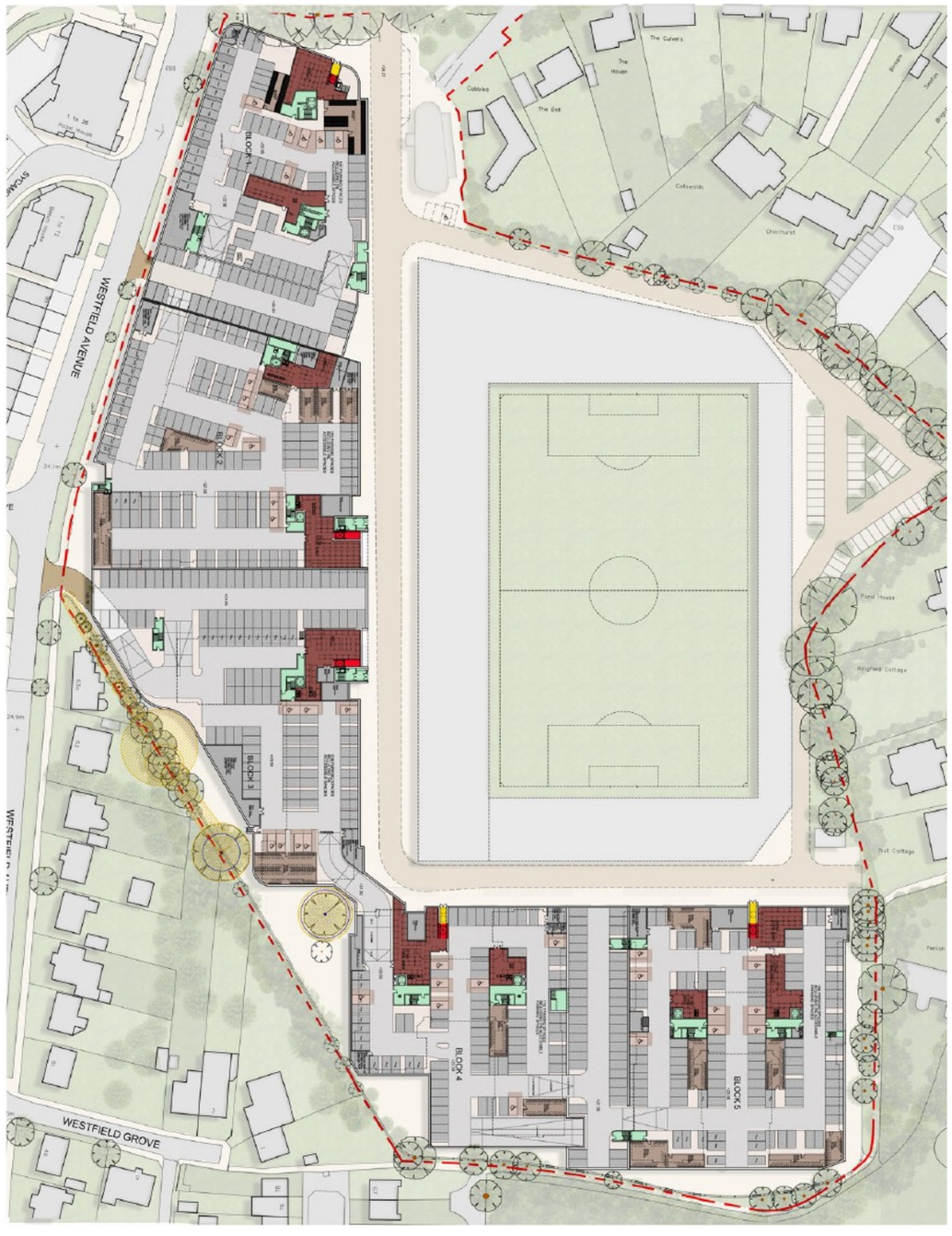
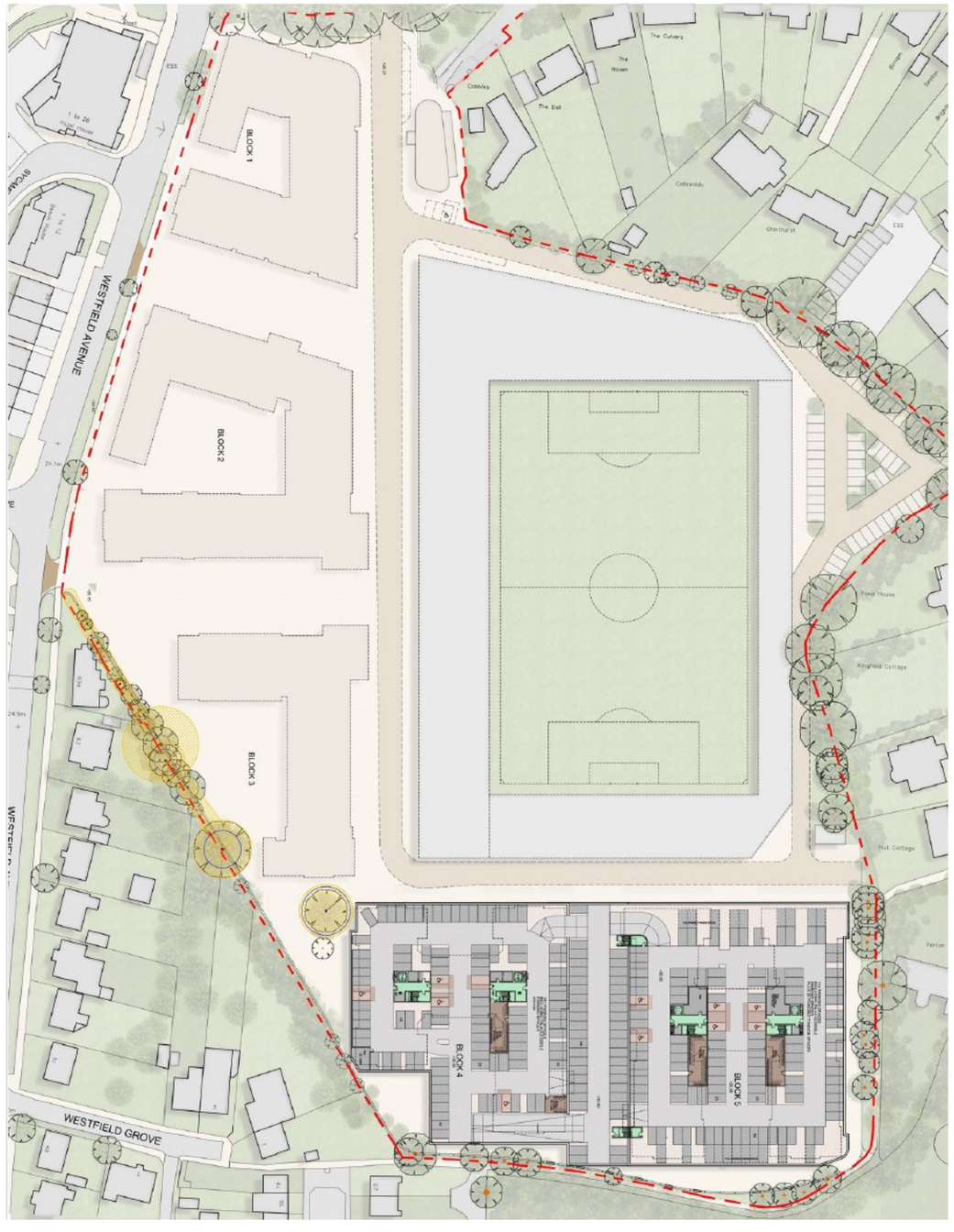


Figure 4.14 Layout of Basement Level Car Park



Cycle Storage

4.43 The Proposed Development accommodates 2,096 cycle parking spaces, which is in line with WBC and SCC requirements. WBC require the Proposed Development to deliver a minimum of 2 cycle parking spaces per dwelling, totalling 2,096 cycle parking spaces for this development. SCC require a minimum of 1,057 cycle parking spaces for this development.. A total of 1,048 spaces will be provided in the basement parking area and there will be provisions at each apartment for storage of a further fold-up bicycle. This brings the total cycle parking provision to 2,096. This approach has been discussed with WBC and SCC and is considered acceptable.

Waste Management

4.44 The strategy for refuse collection from the apartments is for waste to be disposed via refuse chutes, which have been incorporated within secure and ventilated rooms at each vertical circulation core, due to the number of apartments and the height of the Proposed Development.

4.45 The refuse chutes run the full height of the buildings, being located within every core and can be accessed at each level. The chutes terminate at the lower ground floor level in refuse stores sized accordingly to the blocks they serve.

4.46 The collection of waste will be undertaken along the main boulevard. All bins will be moved from refuse stores to collections points within the development and will be returned following collection.

4.47 The number of refuse bins provision has been calculated using standard guidance. The capacity of the refuse stores and the bins is based on 110 litres per unit. This can be subdivided to take account of recycling as described in the waste and recycling provision for new residential developments produced by WBC.

4.48 The proposed stadium will have suitable stores for Euro type bins on the concourses. The main kitchen to the southwest will have internal storage and lift access to a ground floor store accessible by maintenance and kitchen staff only.

4.49 A recycling storage unit will be installed throughout the facility for the segregation of collected waste. The waste will then be collected by maintenance staff

4.50 WBC commercial waste section will collect, sort, recycle and dispose of the waste produced in the stadium development weekly. The Euro bins will be moved to ground level of the rear of the building, by maintenance staff via the service lift, for collection.

ENVIRONMENTAL FEATURES OF PROPOSED DEVELOPMENT

Climate Change Adaptation and Resilience

4.51 The IEMA principles on climate change mitigation and EIA identify climate change as one of the defining environmental policy drivers of the future, and that action to address GHG emissions is essential.

4.52 The principles are based on the following considerations:

- All projects create GHG emissions that contribute to climate change;
- Climate change will lead to significant environmental effects; and
- There is a carbon budget that defines a level of dangerous climate changes whereby any GHG emission within that budget can be considered as significant.

4.53 As a result, IEMA (2017) recommend that all GHG emissions, including any residual emissions following adoption of any mitigation measures, are to be determined as significant.

4.54 A GHG Assessment was therefore carried out (***ES Volume 3, Appendix: EIA Methodology (Annex 4)***), the purpose of which was to quantify the anticipated GHG emissions and contextualise the project's contribution to an existing carbon budget. Based on the assessment undertaken, the contribution of emissions in the context of the budget are deemed to be low. The arising GHG emissions represent a small proportion of national GHG emissions. With the adoption of mitigation measures, as well as continuing decarbonisation of the energy network, it is anticipated that emissions will be reduced over time.

4.55 The total estimate of GHG emissions for the Proposed Development over the 60-year reference study period is approximately 394,320 tCO2e. The GHG emissions assessment associated with operational energy is the largest contributor to GHG emissions throughout the lifecycle of the Proposed Development. To reduce these emissions, over the course of the ongoing detailed design, opportunities to utilise higher efficiency equipment and comprehensive energy management will be considered.

Flood Risk and Drainage

4.56 WBC and the EA have been working in partnership to design and implement the Hoe Valley Restoration Scheme and that this involves updating the 2014 modelling and this model is due to be published shortly. WBC have provided the output mapping for the defended scenario including climate change scenarios and this concludes that the crest levels of the fluvial flood defences are approximately 0.17m to 0.82m above the defended modelled 100-year flood level with 35% allowance for climate change and, therefore, it is concluded that the flood defences would provide protection for the operational lifetime of the Proposed Development.

4.57 The undefended 100-year flood event with a 35% allowance for climate change (25.02 mAOD) has been used as the worst-case scenario for the Proposed Development and during this flood event, the site would flood to a maximum depth of 1m which would occur in the northern part of the site. The central part of the site will remain dry; however, some of the southern extent of the site would experience shallow flooding to depths up to 0.2m as flood water would flow down Kingfield Road and enter the site via the south-east.

4.58 All residential development is proposed to be located approximately 1.5 m above the existing ground level and this is at a minimum 480mm above the undefended 100-year event with 35% climate change level. Therefore, should this event occur, a safe refuge would be provided within the residential dwellings. Any land uses below this flood level are classified as 'less vulnerable' land uses.

4.59 When referring to surface water flood mapping, most of the site has a very low to low risk of surface water flooding. There are very limited areas of medium and high surface water flood risk in the north-western and southern areas of the site; however, these areas are limited in size and do not constitute any flow paths (i.e. they originate within the site boundary). The extents of medium/high surface water flood risk are located with existing areas of hardstanding surrounding the buildings and is ultimately ponded water. Post-development, any ponding of surface water in extreme events will be re-distributed to the new low points within the site (i.e. areas of open space and roads), as well as being reduced through the implementation of the proposed drainage strategy.

4.60 From reviewing the borehole records on site included within the Ground Investigation report, groundwater is located between 1.7 and 2.87 m bgl within the Kempton Park Gravel. When assessing groundwater levels and FFLs of the basement and lower ground level, it is considered likely that the lower ground level and basement levels of the residential blocks would extend below the anticipated groundwater levels.

4.61 Considering that the footprints of the blocks are relatively small and there is only one-storey basement levels proposed, the volume of displaced groundwater may result in a small rise in groundwater level locally; however, it is considered unlikely that the risk of groundwater emergence at the surface would be increased. It is recommended that the construction of the basements incorporate flood resistant techniques to ensure that they would remain free from groundwater ingress.

4.62 The WBC historic flood records show that the site lies within a postcode area with 33 records of overloaded sewer flooding. However, the exact magnitude, extent and location of these flooding incidents are not recorded. Mitigation against sewer flooding could be achieved through the provision of non-return valves which prevent water entering the properties from drains and sewers.

4.63 The proposed drainage strategy comprises of green roofs, lined permeable paving and geo-cellular tanks and would ensure that surface water runoff rates for the Proposed Development would be limited to 30 l/s which is 80% of the existing 1 in 1 year runoff rate. Surface water runoff would discharge into the public sewer along Kingfield Road which ultimately drains to the Hoe Stream. Attenuation would be provided for all return periods up to and including the 1 in 100 year event inclusive of a 40% allowance for climate change.

4.64 The FRA has therefore demonstrated that the Proposed Development will be safe and that it would not increase flood risk elsewhere. The proposed land uses are classified as 'more vulnerable' and 'less vulnerable' development which are considered appropriate in relation to the flood risk vulnerability classifications set out in Table 3 of the NPPF. The Proposed Development should therefore be considered acceptable in planning policy terms.

Energy and Sustainability

4.65 Elementa Consulting prepared the Energy Strategy which accompanies the Planning Application. In order to optimise design solutions to maximise carbon reductions, the following energy hierarchy was adopted to help guide decisions about which energy measures are appropriate:

- Be Lean: using less energy and utilising passive sustainable design measures;
- Be Clean: using Combined Heat and Power (CHP) system and district heating networks; and
- Be Green: using renewable energy where possible, to further reduce carbon emissions.

4.66 The Energy strategy provides a number of measures to ensure the Proposed Development:

- Complies with part L1A and Part L2A approved documents of Building Regulations;
- Achieves an overall 25.8% carbon emissions reduction against the building regulation minimum requirements;
- Achieves a 26.4% carbon emissions reduction for the residential component of the Proposed Development
- Achieves a 20.2% carbon emissions reduction for the non-residential component of the Proposed Development
- Achieves a 11.6% carbon emissions reduction due to renewable energy for the non-residential component of the Proposed Development
- Achieves BREEAM 'Very Good' rating for the non-residential component of the Proposed Development
- Achieves a minimum of 2 Ene 01 credits against BREEAM NC 2018 rating system for the non-residential component of the Proposed Development

Energy Plant

4.67 Four-pipes Air Source Heat Pumps (ASHP) will provide domestic hot water and space cooling to occupied spaces for the Stadium. The Air Source Heat Pumps will have an efficiency of at least 290% for Domestic Hot Water production, at least 315% (SCOP) for space heating and at least 475% (SEER) for space cooling.

4.68 A communal heating system fed by Gas Boilers and ASHP will provide domestic hot water and space heating for the residential part of Proposed Development. The ASHP will heat up the water from 35°C-to-45°C, with an efficiency of at least 350%, the Gas Boilers will then heat up the water from 45°C-to-65°C, with an efficiency of at least 92%.

Lighting

4.69 A proposed lighting strategy has been produced which is based on a number of resources and guidance from regulatory bodies and standard agencies[1] to ensure lighting in the Proposed Development conforms to best practice.

4.70 Floodlighting to the main pitch would be operational no later than 22:30 hours from Monday to Saturday and 21:00 hours on Sundays. This means that lighting could be required all year round as required, depending on prevailing ambient lighting conditions.

4.71 Lighting for the Proposed Development is suggested to be required to conform to the CIBSE, LG4:2006 recommendations for 'Class I' Play (Maintained Average Illuminance: 500lux, Min/Average Uniformity: 0.7, Unified Glare Rating: 55, Colour Rendering Index: 70). This would satisfy the demands of Category B of the Football Associations National Ground Grading document, which are at or above the requirements associated with Woking FC's current position within the league system and therefore represent a reasonable assumed level of lighting provision for future needs.

4.72 To ensure obtrusive light is kept to a minimum the strategy recommends that the CIBSE recommendations for obtrusive light limitations for Environmental Zone E3 (suburban / medium district brightness) to be followed. Particular care should be taken to minimise light trespass through windows of the nearby residential developments to the south and west of the stadium and the existing residential area to the north and east. The lighting strategy advises that the installation is designed to comply with CIBSE guidelines for obtrusive light for Zone E3, to ensure mitigation against unwanted environmental effects have been addressed.

[1] The lighting strategy has been produced with regards to the following documents: Institute of Lighting Professionals (ILP) - Guidance Notes for the Reduction of Obtrusive Light GN01:2011; The Society of Light & Lighting (CIBSE) – Lighting Guide 4: Sports Lighting 2006; English Football League - Membership Criteria (Regulation 8); The FA - The FA Guide to Floodlighting 2013; Sport England – Artificial Sports Lighting 2012; UEFA - UEFA Stadium Lighting Guide 2016; and FIFA Resources (FIFA) - Lighting & Power Supply.