

# **Chapter 15: Mitigation and Monitoring**

**INTRODUCTION**

- 15.1** In this chapter, Table 15.1 and Table 15.2 present the environmental mitigation and monitoring measures required for the Proposed Development, as identified as a result of the Environmental Impact Assessment (EIA) process and described within this Environmental Statement (ES). The environmental mitigation and monitoring measures presented include those which are standard measures / commitments that would be adopted as a matter of course to meet best practice guidance in relation to the demolition and construction works; and any additional, project bespoke mitigation measures and monitoring that have been identified as being required by the EIA.
- 15.2** Table 15.1 does not address any environmental design measures which have been identified over the course of the design evolution and EIA process, and have been subsequently embedded into the design of the Proposed Development. Securing these measures will be via planning consent of the scheme sought for approval.
- 15.3** The environmental mitigation and monitoring measures presented in Table 15.1 and Table 15.2 are measures that Woking Borough Council (WBC) will need to secure for the project, either using Planning Conditions (related to the Planning Permission (as relevant)) or through the S106 Agreement Heads of Terms. The following schedule is structured to describe the environmental mitigation and monitoring measures for the Proposed Development that:
  - Will be implemented throughout the demolition and construction works (Table 15.1); and
  - Will be implemented / undertaken once the Proposed Development is built and in operation / use (Table 15.2).

- 15.4** The mitigation and monitoring measures have been developed through coordination with the Applicant, Design Team and EIA technical specialists to ensure the environmental mitigation and monitoring measures suggested are deliverable and are considered appropriate in terms of their ability to mitigate likely significant adverse environmental effects associated with the Proposed Development. While tailored to the Proposed Development, none of the mitigation and monitoring measures which have been identified are non-standard and as such, the effects of their implementation are well understood.
- 15.5** It is noted that in support of the planning application, a number of other documents have been prepared and submitted in regard to matters such as operational commitments and design quality. Where relevant to the EIA, these are presented in Table 15.1 and Table 15.2 below.

**Table 15.1 Mitigation and Monitoring Schedule – Pre-Commencement, Demolition and Construction**

ENVIRONMENTAL MITIGATION	ES REFERENCE	PROPOSED MECHANISM TO SECURE
<b>ENVIRONMENTAL MANAGEMENT PLANS</b>		
<p>The following plans are to be prepared, submitted and approved by the local planning authority as part of Pre-Commencement activities:</p> <ul style="list-style-type: none"> <li>- Construction Management Plan (CEMP), to include the following                             <ul style="list-style-type: none"> <li>▪ Noise and Vibrations Controls;</li> <li>▪ Dust Management Plan; and</li> <li>▪ Neighbour and Public Relations Strategy.</li> </ul> </li> <li>- Site Waste Management Plan (SWMP).</li> <li>- Construction Traffic Management Plan (CTP);</li> <li>- Construction Logistics Plan;</li> <li>- Geo-environmental Investigation – Action Plan.</li> </ul> <p>The detail regarding the requirements for each of the above plans is listed below under Demolition, Construction and Refurbishment when it is expected that they each will be implemented by the Principal Contractor.</p> <p>Registration with the 'Considerate Constructors Scheme'.</p>	<p><i>ES Volume 1, Chapter 5: Demolition and Construction</i></p>	<p>Planning Condition</p>
<b>POST-GEO-ENVIRONMENTAL INVESTIGATION ACTIONS</b>		
<p>Following the geo-environmental investigation, the following is noted and / or required:</p> <ul style="list-style-type: none"> <li>- Where hardstanding or building cover is provided, no formal remedial measures are considered necessary in terms of human health, as the hard surfacing is considered to effectively encapsulate the made ground. The remaining communal soft landscaping areas should have the Made Ground replaced with approximately 600mm of imported clean soil, placed on a membrane.</li> <li>- Further investigation, soil sampling and assessment, including those areas which have not been accessed for ground investigation purposes, may allow areas requiring encapsulation under clean cover to be zoned and refined.</li> <li>- A remedial strategy will be required and implemented for the Proposed Development.</li> <li>- Material selection for potable water supply pipes should be confirmed with the relevant service provider.</li> <li>- As with any ground investigation, the presence of further hotspots between sampling points cannot be ruled out. Should any contamination be encountered, a suitably qualified environmental consultant should be informed immediately, so that adequate measures may be recommended.</li> </ul>	<p><i>ES Volume 3, Appendix: Water Resources, Drainage and Flood Risk (Annex 3 – Geo-Environmental and Geotechnical Assessment (Ground Investigation) Report)</i></p>	<p>Planning Condition</p>

ENVIRONMENTAL MITIGATION	ES REFERENCE	PROPOSED MECHANISM TO SECURE					
<b>SURVEYS AND CONSENTS / LICENCES</b>							
<p>The following pre-commencement surveys and investigations are envisaged:</p> <ul style="list-style-type: none"> <li>- Asbestos surveys;</li> <li>- Nesting birds / bats survey;</li> <li>- Condition survey of any adjoining party walls, boundary walls, and public highways;</li> <li>- Structural surveys (pre-demolition appraisal) of existing construction;</li> <li>- Utility surveys to determine the position of any assets;</li> <li>- Buried services ground penetration survey to determine existing service routes and validate the above utility survey information;</li> <li>- CCTV survey of the surface water and foul water drainage to confirm size and condition;</li> <li>- Condition survey of perimeter roads; and</li> <li>- Archaeological watching brief for all substructure works.</li> </ul>	<p><i>ES Volume 1, Chapter 5: Demolition and Construction</i></p>	<p>Planning Condition</p>					
<p>All necessary consents and licences required to commence any on-site activity will be obtained ahead of the works commencing, giving the appropriate notice period. These will include:</p> <ul style="list-style-type: none"> <li>- Communication with the various parties regarding the use tower cranes (particularly oversailing rights), as the site is located adjacent to public and private third-party land. Construction activities that have the potential to generate a direct impact on the land under public and private ownership will be agreed with the owners, including (but not limited to) hoarding positions, temporary footpath diversions, connections / diversions of any private drainage or utilities, and temporary unloading on the roads. The Applicant and Principal Contractor will develop a good working relationship with WBC and the community through the planning stages; this relationship will be maintained;</li> <li>- Connections to existing statutory services and main sewers;</li> <li>- Licenses for the discharge of water from the site into the public sewer, if required;</li> <li>- Party Wall Act notices and agreements, if required;</li> <li>- Approval of a CEMP, including any specific agreements relating to the control and monitoring of construction logistics and aspects such as demolition and construction noise; and</li> <li>- Section 80 Demolition Notice application(s) to the Local Authority Building Control, triggered following planning consent with the works being undertaken under a Section 81 Counter Notice.</li> </ul>			<b>CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN (CEMP)</b>			<p>Throughout the project, the Contractors will ensure the following:</p> <ul style="list-style-type: none"> <li>- Develop and implement a stakeholder communications plan that includes community engagement before work commences on-site;</li> <li>- Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager / engineer or the site manager;</li> <li>- Display the head or regional office contact information;</li> <li>- Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by WBC;</li> <li>- Make the complaints log available to WBC when asked;</li> <li>- Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to WBC when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100m of site boundary, with cleaning to be provided if necessary; and</li> <li>- Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.</li> </ul>	<p><i>ES Volume 1, Chapter 5: Demolition and Construction</i> <i>ES Volume 1, Chapters 6 to 12</i></p>
<b>CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN (CEMP)</b>							
<p>Throughout the project, the Contractors will ensure the following:</p> <ul style="list-style-type: none"> <li>- Develop and implement a stakeholder communications plan that includes community engagement before work commences on-site;</li> <li>- Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager / engineer or the site manager;</li> <li>- Display the head or regional office contact information;</li> <li>- Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by WBC;</li> <li>- Make the complaints log available to WBC when asked;</li> <li>- Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to WBC when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100m of site boundary, with cleaning to be provided if necessary; and</li> <li>- Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.</li> </ul>	<p><i>ES Volume 1, Chapter 5: Demolition and Construction</i> <i>ES Volume 1, Chapters 6 to 12</i></p>	<p>Planning Condition</p>					
<p>Implementation and compliance with the approved CEMP adhering to the following minimum requirements:</p> <ul style="list-style-type: none"> <li>- A broad plan of the works, highlighting the various stages and their context within the project, including a full schedule of materials and manpower resources, as well as plant and equipment schedules;</li> <li>- Detailed site layout arrangements (including requirements for temporary works) showing locations of site offices, ancillary buildings, plant, wheel-washing facilities, stacking bays, car parking;</li> <li>- Plans for storage, accommodation, vehicular movements, delivery and access;</li> <li>- Site logistics and operations;</li> <li>- Site working hours;</li> <li>- Health and safety, procedures for site inductions;</li> <li>- Prohibited or restricted operations (locations, hours, etc.);</li> <li>- Details of plant to be used and associated noise levels;</li> <li>- Programme and phasing details of the works indicating the predicted noise and vibration levels for each activity at specified noise sensitive sites for each phase of the works. Where work phases overlap the cumulative noise and vibration impacts shall be predicted;</li> <li>- Details of operations that are likely to result in disturbance, with an indication of the expected duration of each phase with key dates, including a procedure for prior notification to the WBC and relevant statutory and non-statutory (including neighbours) parties so that local arrangements can be agreed;</li> <li>- Training to ensure that all workforce and employees are aware of procedures to reduce and mitigate impacts;</li> <li>- Noise and vibration control proposals and methodology (see below <b>CEMP - NOISE AND VIBRATION CONTROL</b>);</li> <li>- A procedure to ensure communication is maintained with the WBC and the local community to provide information on any operations likely to cause disturbance (through, for example, meetings and newsletters);</li> <li>- Provisions for affected parties to register complaints and the procedures for responding to complaints;</li> <li>- Measures for the protection ecological resources (including tree protection) (see <b>ECOLOGY</b>);</li> <li>- Approaches to screening, including the erection of hoarding around the works site. The boundary of each phase's construction area will be established, and the minimum of 2.4m high, solid perimeter hoarding will be erected around the site, along the boundary line. The hoarding will remain fixed in position until handover and occupation of each phase. Safe site access routes onto Kingfield Road and Westfield Avenue will be established;</li> <li>- Measures to control and monitor air pollution, considering the Mayor of London and London Council's guidance document 'The Control of Dust and Emissions from Construction and Demolition' (see below <b>CEMP - DUST MANAGEMENT PLAN</b>);</li> </ul>							

ENVIRONMENTAL MITIGATION	ES REFERENCE	PROPOSED MECHANISM TO SECURE
<ul style="list-style-type: none"> <li>- Provisions for reporting to the WBC;</li> <li>- Safety for highway users, cyclists and pedestrians;</li> <li>- Protection of heritage assets and procedures for dealing with uncovered archaeological sites;</li> <li>- Waste minimisation and management procedures;</li> <li>- Site remediation and procedures for dealing with contaminated material;</li> <li>- Measures for the protection of water resources and preventing contaminated runoff, settlement facilities and oil / petrol interceptors;</li> <li>- Procedures for dealing with unexploded ordnance;</li> <li>- Energy conservation measures;</li> <li>- Minimising lighting and light spill; being sensitive to the position and direction of lighting in relation to neighbouring residences;</li> <li>- Storage of any skips, oil and chemical storage, etc.;</li> <li>- Details of the emergency incident procedure;</li> <li>- Approval of discharge arrangements into the foul water sewer with Thames Water Utilities Limited (TWUL);</li> <li>- Use of Personal Protective Equipment (PPE);</li> <li>- Access requirements for enclosed spaces below ground, particularly in relation to vapour / gas migration in such enclosed spaces;</li> <li>- Emergency procedures and fire exit routes from the site will be identified within a fire safety plan. Throughout the course of the construction works these will be regularly inspected and maintained. The fire safety plan will be updated regularly as construction works progress, particularly as areas become progressively completed, and as the means of escape from the evolving building change. Fire alarm points and extinguishers will be situated at each floor of the buildings at the stair cores and within main corridors;</li> <li>- Manage Neighbourhood and Public Relations;</li> <li>- Traffic and construction logistics, including measures to reduce vehicle movements;</li> <li>- Details of access and egress and proposed routes for HGVs (site access points in predominantly residential areas must be avoided, unless there is no other reasonable alternative in which case any impact on the residential amenity must be minimised);</li> <li>- The Contractor will incorporate the following measures into the demolition and construction works, to avoid noise related impacts from construction traffic: <ul style="list-style-type: none"> <li>▪ Vehicles will not wait or queue up with engines running on the site or the public highway;</li> <li>▪ Vehicles will be properly maintained to comply with noise emissions standards;</li> <li>▪ Deliveries will be restricted to be within working hours of the site; and</li> <li>▪ Design and routing of access routes will minimise vehicle noise and the need to perform reversing manoeuvres.</li> </ul> </li> <li>- All hazardous materials (such as fluorescent tubes, fridges and air conditioning units) will be identified and removed, and any live services will be terminated, before the soft stripping of the buildings and subsequent removal of internal debris commences.</li> </ul>		
<b>DUST MANAGEMENT PLAN</b>		
<p>The following is a set of best-practice measures from the Institute of Air Quality Management (IAQM) guidance (IAQM, 2016) that should be incorporated into the specification for the works. These measures should ideally be written into a Dust Management Plan. Some of the measures may only be necessary during specific phases of work, or during activities with a high potential to produce dust, and the list should be refined and expanded upon in liaison with the construction contractor when producing the Dust Management Plan.</p> <p><b>Communications</b></p> <ul style="list-style-type: none"> <li>- Develop and implement a stakeholder communications plan that includes community engagement before and during work on site;</li> <li>- Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environmental manager / engineer or the site manager; and</li> <li>- Display the head or regional office contact information.</li> </ul> <p><b>Dust Management Plan</b></p> <ul style="list-style-type: none"> <li>- Develop and implement a Dust Management Plan (DMP) approved by WBC which documents the mitigation measures to be applied, and the procedures for their implementation and management.</li> </ul> <p><b>Site Management</b></p> <ul style="list-style-type: none"> <li>- Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken;</li> <li>- Make the complaints log available to WBC when asked;</li> <li>- Record any exceptional incidents that cause dust and/or air emissions, either on- or off- site, and the action taken to resolve the situation in the log book; and</li> <li>- Hold regular liaison meetings with other high risk construction sites within 500m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport / deliveries which might be using the same strategic road network routes.</li> </ul> <p><b>Monitoring</b></p> <ul style="list-style-type: none"> <li>- Undertake daily on-site and off-site inspections where receptors (including roads) are nearby, to monitor dust. Record inspection results, and make the log available to WBC when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100 m of the site boundary, with cleaning to be provided if necessary;</li> <li>- Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to WBC when asked;</li> <li>- Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions; and</li> <li>- Agree dust deposition, dust flux, or real-time PM<sub>10</sub> continuous monitoring locations with WBC. Where possible, commence baseline monitoring at least three months before work commences on site or, if it is a large site, before work on a phase commences. Further guidance is provided by IAQM on monitoring during demolition, earthworks and construction (IAQM, 2018).</li> </ul> <p><b>Preparing and Maintaining the Site</b></p> <ul style="list-style-type: none"> <li>- Plan the site layout so that machinery and dust-causing activities are located away from receptors, as far as is possible;</li> <li>- Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site;</li> <li>- Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period;</li> </ul>	<p><i>ES Volume 1, Chapter 8: Air Quality</i>  <i>ES Volume 2, Appendix: Air Quality (Annex 6 – Construction Mitigation)</i></p>	<p>Planning Condition</p>

ENVIRONMENTAL MITIGATION	ES REFERENCE	PROPOSED MECHANISM TO SECURE
<ul style="list-style-type: none"> <li>- Avoid site runoff of water or mud;</li> <li>- Keep site fencing, barriers and scaffolding clean using wet methods;</li> <li>- Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below; and</li> <li>- Cover, seed, or fence stockpiles to prevent wind whipping.</li> </ul> <p><b>Operating Vehicle / Machinery and Sustainable Travel</b></p> <ul style="list-style-type: none"> <li>- Ensure all vehicles switch off their engines when stationary – no idling vehicles;</li> <li>- Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery-powered equipment where practicable;</li> <li>- Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on un-surfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate);</li> <li>- Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials; and</li> <li>- Implement a Travel Plan that supports and encourages sustainable staff travel (public transport, cycling, walking, and car-sharing).</li> </ul> <p><b>Operations</b></p> <ul style="list-style-type: none"> <li>- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems;</li> <li>- Ensure an adequate water supply on the site for effective dust / particulate matter suppression / mitigation, using non-potable water where possible and appropriate;</li> <li>- Use enclosed chutes, conveyors and covered skips;</li> <li>- Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate; and</li> <li>- Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.</li> </ul> <p><b>Waste Management</b></p> <ul style="list-style-type: none"> <li>- Avoid bonfires and burning of waste materials.</li> </ul> <p><b>Measures Specific to Demolition</b></p> <ul style="list-style-type: none"> <li>- Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust);</li> <li>- Ensure effective water suppression is used during demolition operations. Hand held sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition, high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground;</li> <li>- Avoid explosive blasting, using appropriate manual or mechanical alternatives; and</li> <li>- Bag and remove any biological debris or damp down such material before demolition.</li> </ul> <p><b>Measures Specific to Earthworks</b></p> <ul style="list-style-type: none"> <li>- Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable;</li> <li>- Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable; and</li> <li>- Only remove the cover from small areas during work, not all at once.</li> </ul> <p><b>Measures Specific to Construction</b></p> <ul style="list-style-type: none"> <li>- Avoid scabbling (roughening of concrete surfaces), if possible;</li> <li>- Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place;</li> <li>- Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery; and</li> <li>- For smaller supplies of fine powder materials ensure bags are sealed after use and stored appropriately to prevent dust.</li> </ul> <p><b>Measures Specific to Trackout</b></p> <ul style="list-style-type: none"> <li>- Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use;</li> <li>- Avoid dry sweeping of large areas;</li> <li>- Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport;</li> <li>- Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable;</li> <li>- Record all inspections of haul routes and any subsequent action in a site log book;</li> <li>- Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems or mobile water bowsers, and regularly cleaned;</li> <li>- Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable);</li> <li>- Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits; and</li> <li>- Access gates should be located at least 10m from receptors, where possible.</li> </ul>		
<b>NEIGHBOUR AND PUBLIC RELATIONS STRATEGY</b>		
<p>Implementation and compliance with the approved 'Neighbour and Public Relations Strategy', to include the following minimum requirements:</p> <p><u>Initial Contact:</u></p> <ul style="list-style-type: none"> <li>- Once full planning permission has been obtained and contractors have been appointed, formal contact will be established with the nearest neighbours and those who could potentially be affected by the construction works;</li> </ul> <p><u>Contact during Works Period</u></p> <ul style="list-style-type: none"> <li>- A single point of contact for neighbour and public relations will be established, with a senior member of the project staff nominated for the role. Contact details for this single point of contact will be displayed on the site hoarding. Outside normal working hours, site security will act as the main point of contact via a dedicated phone number. Security will alert the staff contact if necessary (available 24 hours). Should there be any complaints, these will be logged, fully investigated and reported to the relevant department within WBC as soon as possible. The complainant will be informed as to what action has been taken; and</li> </ul>	<p><i>ES Volume 1, Chapter 5: Demolition and Construction</i></p>	<p>Planning Condition</p>



ENVIRONMENTAL MITIGATION	ES REFERENCE	PROPOSED MECHANISM TO SECURE
<ul style="list-style-type: none"> <li>- Contact with neighbours and the general public throughout the construction programme will be pro-actively maintained, with regular meetings held on no less than on a quarterly basis to update neighbours and the general public. Brief news sheets will be issued that will report on progress of construction works and will be maintained on site hoarding.</li> </ul>		
<b>SITE WASTE MANAGEMENT PLAN</b>		
<p>Implementation and compliance with the approved SWMP, adhering to the following minimum requirements:</p> <ul style="list-style-type: none"> <li>- A 'just-in-time' material delivery system to avoid materials being stockpiled and spoiling during bad weather;</li> <li>- Development of a logistics plan for the project, to ensure that due consideration is given to material requirements throughout the construction phase. This will enable efficient management of the delivery and storage of materials and will ensure that the most effective logistic methods are adopted;</li> <li>- Appropriate handling and disposal of pile arisings, concrete, pastes and/or grouts during the laying of foundations will be undertaken;</li> <li>- Consideration of material quantity requirements to avoid over-ordering and generation of waste materials;</li> <li>- Designated storage area for new building materials, to reduce the risk of contamination / spoiling;</li> <li>- Undertake a Waste Characterisation assessment as part of remediation works if the Remediation Strategy identifies this is required.</li> <li>- Aim to maximise the use of reclaimed or recycled materials throughout the design where feasible;</li> <li>- Segregation of waste at source where practical;</li> <li>- Segregation of waste streams. At a minimum, containers/skips for hazardous/non-hazardous waste and plasterboard waste should be provided on-site;</li> <li>- Skips will be clearly colour-coded and signposted to reduce risk of cross contamination;</li> <li>- Provision of training for site personnel regarding the correct disposal of materials;</li> <li>- All waste generated will be stored in designated areas isolated from surface drainage;</li> <li>- Waste containers will be covered, to prevent dust and litter from escaping and rainwater from accumulating;</li> <li>- Regular inspection of waste containers, and replacement when full;</li> <li>- Agreements with material suppliers to reduce the amount of packaging or to participate in a packaging take-back scheme;</li> <li>- Engage with the supply chain to source products and materials that use minimal packaging and segregate packaging for re-use;</li> <li>- Re-use of materials onsite wherever feasible, in line with the Waste Hierarchy;</li> <li>- Re-use and recycling of materials off-site where re-use on-site is not practical (e.g. through use of an off-site waste segregation facility and re-sale for direct re-use or re-processing);</li> <li>- Engage with the supply chain to source products which use minimal packaging, and segregate packaging for re-use;</li> <li>- Risk of infestation by pests or vermin is to be minimised by making adequate arrangements for the disposal of food and other material that may attract pests;</li> <li>- Burning of wastes or unwanted materials will not be permitted on-site.</li> <li>- All liquids and solids of a potentially hazardous nature (e.g. diesel fuel, oils and solvents) are to be stored in designated locations with specific measures to prevent leakage and release of their contents, include the siting of storage area away from surface water drains, on an impermeable base with an impermeable bund that has no outflow and is of adequate capacity to contain 110% of the contents, in accordance with the EA's requirements. Any tanks storing more than 200 litres of oil on-site, would have secondary bunding.</li> </ul>	<p><b>ES Volume 1, Chapter 5: Demolition and Construction</b></p>	<p>Planning Condition</p>
<b>NOISE AND VIBRATION</b>		
<p>Typical best practicable means measures would be considered, where reasonably practical, such as:</p> <ul style="list-style-type: none"> <li>- Plan working hours to take account of the effects of noise and vibration upon persons in areas surrounding site operations and upon persons working on-site;</li> <li>- Where reasonably practicable, adopt quiet working methods, using plant with lower noise emissions;</li> <li>- Where reasonably practicable, adopt working methods that minimise vibration generation;</li> <li>- Locate plant away from noise and vibration sensitive receptors, where feasible;</li> <li>- Use silenced and well-maintained plant conforming with the relevant EU directives relating to noise and vibration;</li> <li>- Avoid unnecessary revving of engines and switch off equipment when not required;</li> <li>- Keep internal haul routes well maintained;</li> <li>- Use rubber linings for chutes and dumpers to reduce impact noise;</li> <li>- Minimise drop height of materials;</li> <li>- Start-up plant and vehicles sequentially rather than all together;</li> <li>- Carry out regular inspections of noise mitigation measures to ensure integrity is maintained at all times;</li> <li>- Provide briefings for all site-based personnel so that noise and vibration issues are understood, mitigation measures are adhered to;</li> <li>- Manage plant movement to take account of surrounding noise sensitive receptors, as far as is reasonably practicable;</li> <li>- Carry out compliance monitoring of on-site levels to ensure that the agreed noise and vibration limits are being adhered to;</li> <li>- Wherever possible, demolition chutes would be located inside the existing building rather than outside at street level;</li> <li>- Community liaison and communication regarding construction works would be undertaken throughout the demolition and construction stage to provide information to people residing in properties located in the vicinity of the construction works and reduce the likelihood of adverse effects on the local community which could result in potential noise complaints. The level of engagement required would vary during the construction period, depending upon the expected effects experienced by individual receptors due to the construction works;</li> <li>- Details relating to liaison with the local community would be managed by the contractor. It is envisaged that community liaison would provide local residents with the following information in relation to the construction works: <ul style="list-style-type: none"> <li>▪ The nature of the works being undertaken;</li> <li>▪ The expected duration of the works;</li> <li>▪ The contractor's working hours;</li> <li>▪ Mitigation measures that have been adopted to minimise noise and vibration, as detailed in the CEMP; and</li> </ul> </li> </ul>	<p><b>ES Volume 1, Chapter 9: Noise and Vibration</b></p>	<p>Planning Condition</p>

## Woking Football Club Chapter 15: Mitigation and Monitoring Schedule

ENVIRONMENTAL MITIGATION	ES REFERENCE	PROPOSED MECHANISM TO SECURE
<ul style="list-style-type: none"> <li>- Contact details in the event of a noise disturbance.</li> </ul>		
Standard attenuation measures (appropriate selection and design) of fixed plant installations.		
It is assumed that trade contractors will comply with all legislation relevant to the control of noise and vibration from construction works.		
<p>The predictions of potential demolition and construction noise and vibration effects have assumed the following:</p> <ul style="list-style-type: none"> <li>- The adoption of a minimum 2.4m high, solid perimeter hoarding around the site;</li> <li>- Demolition and construction plant that is compliant with the sound and vibration levels published within BS 5288;</li> <li>- Stationary demolition and construction plant such as concrete crushers, will be positioned behind screens and positioned away from the receptors;</li> <li>- The use of hand-held tools when used for a prolonged period will be adequately screened;</li> <li>- The two piling rigs will be positioned at opposing sides of the site when used; and</li> <li>- Mobile plant will move across the site equally during the demolition and construction period.</li> </ul>		
<p>BS 5228 indicates that construction activities (particularly piling) generally only generate vibration impacts when they are located less than 20m from sensitive locations. The magnitude of impact depends on the type of piling, ground conditions, and receptor distance.</p> <p>It is not possible to estimate the levels of vibration with any certainty. Instead, it is proposed that limits are placed on the vibration at sensitive buildings (receptors) and therefore vibration levels will need to be monitored during construction. BS 5228-2 states that vibration PPV levels are tolerable within residential properties when they do not exceed 1.0mm/s and prior warning is given.</p>		
<p>Additional mitigation measures that the contractor/s shall be required to explore and implement include:</p> <ul style="list-style-type: none"> <li>- The production of a construction noise and vibration report that evaluates the construction activities and provides specific best practice measures to reduce noise and vibration;</li> <li>- Limiting high impact activities (e.g. piling) to specific times during the day, e.g. 1 hour on – 1 hour off, or 09:00-12:00 and 14:00-17:00;</li> <li>- Plant is to be properly maintained and operated in accordance with manufacturer’s recommendations. Electrically powered plant is preferred, where practicable, to mechanically powered alternatives;</li> <li>- Where feasible, all stationary plant would be located so that the noise effect at all occupied residential and commercial properties is minimised and, if practicable, every item of static plant when in operation is to be sound attenuated using methods based on the guidance and advice given in BS 5228;</li> <li>- Trade contractors would at all times apply the principle of Best Practicable Means as defined in Section 72 of the COPA and carry out all work in such a manner as to reduce any disturbance from noise and vibration to a minimum; and</li> <li>- The timing of building operations will be critical in avoiding noise and vibration nuisance to surrounding areas and premises. The contractor would identify particularly sensitive periods in the works so that the potential problems can be minimised and that early and good public relations with the adjacent occupants of buildings are maintained.</li> </ul>		
<p>The primary method for the control of noise and vibration being a Section 61 agreement under the Control of Pollution Act 1974 (COPA) with WBC being established.</p> <p>A Section 61 agreement under the COPA will contain appropriate noise and vibration limits at the nearby properties. These limits are recommended to be monitored and reported. The reports and monitoring will highlight when it is likely that the construction limits will be exceeded, so that construction activities can be effectively altered.</p> <p>In addition, a Section 61 agreement also sets out a dispensation and variation procedure under which consent can be applied for to carry out works which would potentially exceed the agreed noise and vibration limits or must occur at times when such work is otherwise not approved. Such dispensation/variations would be applied for where there are good engineering, safety or practical reasons for undertaking the works at these times. The selected contractor should adopt measures, including site supervision arrangements, to reduce noise and vibration to a minimum in accordance with Best Practicable Means (BPM), as defined in Section 72 of the COPA.</p>		
<b>HIGHWAYS AND TRANSPORT</b>		
<p>A Construction Traffic Management Plan will be prepared by the contractor prior to the commencement on-site to control the potential impacts of the construction process. A draft CTMP is included as part of the planning application supporting documents (refer <b>ES Volume 3, Appendix: Highways and Transport (Annex 5)</b>).</p> <p>The provision of a CTMP would ensure that a strategy for planning the dismantling and construction access routes will be implemented, to take into account current legislation, and the feedback from consultation with relevant stakeholders.</p> <p>The strategy for planning the dismantling and construction access routes will be regularly reviewed and would typically include details of the following:</p> <ul style="list-style-type: none"> <li>- Temporary traffic control measures (if required);</li> <li>- Timing controls (e.g. limiting peak period vehicle movements);</li> <li>- Temporary and permanent access to the works for personnel/vehicles;</li> <li>- Traffic management procedures for waste disposal vehicles;</li> <li>- Personnel and vehicle segregation;</li> <li>- Traffic Management Equipment, e.g. road cones, temporary fencing and signage etc.;</li> <li>- Provision would be made to ensure that vehicles can be loaded and unloaded off the public highway where possible;</li> <li>- The site labour force would be encouraged to use public transport to travel to and from the site where possible. There would only be limited vehicle parking permitted on-site for visitors;</li> <li>- HGV wheels will be washed prior to vehicles leaving the site;</li> <li>- Road sweepers will be used on adjacent roads at an appropriate frequency depending on the stage of construction to keep the roads clean and free from mud etc. (if necessary);</li> <li>- Traffic management plans would be implemented to minimise the potential effect of the works. This would include ensuring that any lane closures (following approval) are undertaken outside of peak hours where considered necessary and appropriate; and</li> <li>- Pedestrian and cycleways would be temporarily diverted during the public highway works where necessary (following approval).</li> </ul> <p>These measures would be included within a CTMP, to be secured by means of an appropriately worded planning condition.</p>	<b>ES Volume 1, Chapter 7: Highways and Transport</b>	Planning Condition
<b>WATER RESOURCES, DRAINAGE AND FLOOD RISK</b>		
<p>Construction vehicles will be properly maintained to reduce the risk of hydrocarbon contamination and will only be active when required. Construction materials will be stored, handled and managed with due regard to the sensitivity of the local aquatic environment and thus the risk of accidental spillage or release will be minimised.</p>	<b>ES Volume 1, Chapter 12: Water Resources, Drainage and Flood Risk</b>	Planning Condition

ENVIRONMENTAL MITIGATION	ES REFERENCE	PROPOSED MECHANISM TO SECURE
<p>In accordance with the Control of Pollution (Oil Storage) (England) Regulations 2001XI, any tanks storing more than 200 litres of oil will have secondary bunding. Bunding will be specified to have a minimum capacity of "not less than 110% of the container's storage capacity or, if there is more than one container within the system, of not less than 110% of the largest container's storage capacity or 25% of their aggregate storage capacity, whichever is the greater." Above ground storage tanks will be located on a designated area of hardstanding. No underground storage tanks will be used during the construction period. Storage of liquids such as degreasers, solvents, lubricants and paints will be in segregated, banded enclosures.</p> <p>Where required, oil interceptors will be regularly inspected, cleaned and maintained. Full records will be kept of inspections, maintenance works and measures undertaken to sustain equipment performance. These provisions should ensure no significant impacts occur on water quality. The use of settlement facilities will aid the removal of any contaminated particulate material that might be derived from construction materials.</p> <p>The construction drainage system will be designed and managed to comply with BS6031:2009 'The British Standard Code of Practice for Earthworks', which details methods that should be considered for the general control of drainage on construction sites. Further advice is contained within the British Standard Code of Practice for Foundations (BS8004: 2015).</p> <p>Ponded water from excavations will be pumped into temporary (baffled) holding tanks within the site to remove suspended sediment before discharge to surface water or to ground. If oil is observed in the water from the excavation sites, it will be diverted through temporary oil interceptors prior to being discharged. Dewatering activities may require a temporary abstraction licence and this would need to be discussed with the Environment Agency prior to commencement of construction works; however, given the underlying geology, excavations are not expected to require dewatering apart from accumulated rainfall.</p> <p>Construction of the basements will need to incorporate flood resistant techniques to ensure that the basement would remain free from groundwater flooding. Techniques will likely include a cofferdam around the perimeter of assessment to prevent lateral ingress of groundwater; dewatering of the excavation for the Proposed Development; and retaining walls within the basement levels.</p>		
<b>ARBORICULTURE</b>		
<p>The following includes all recommended tree works required, in order to facilitate proposed construction works, as well as works recommended for health and safety reasons, and arboricultural good practice:</p> <p><u>Removal</u></p> <ul style="list-style-type: none"> <li>- Removal of trees to facilitate construction works, as displayed in the Tree Retention and Removal Plan (Appendix 3): T5, T6, T7, T8, T9, T10, T11, T12, T13, T14, T15, T33, T34, T46 T47, T48, T49, T51, T52, T53, T54, T55, T56, T57, T58, T59, T60, T61, T64, G1, G10, G11, G12, G13, G14, G18;</li> <li>- Partial removal of groups facilitate construction works and indicative areas to be removed, displayed in the Tree Retention and Removal Plan (Appendix 3): G4 (35%), G7 (40%), G16 (85%), G17 (30%), G20 (40%), G21 (35%), G22 (15%);</li> <li>- Removal for health and safety reasons: T67, T68;</li> </ul> <p><u>Pruning</u></p> <ul style="list-style-type: none"> <li>- Pruning to facilitate demolition and construction works: T58, T64, T65, G17, G20, G21;</li> <li>- Remedial works to tree for health and safety reasons, and removal of deadwood and/or broken branches: T3, T4; and</li> </ul> <p><u>Monitoring / Inspection</u></p> <ul style="list-style-type: none"> <li>- Removal of ivy and re-inspection: T13, T24, T25, T26, T27, T36, T41, T42, T64, T66, G2.</li> </ul> <p>As detailed in Table 4, the following tree pruning operations will be required in order to facilitate access for development:</p> <ul style="list-style-type: none"> <li>- Tree T65 and group G17 will require lower lateral branches in their northern canopy quadrants to be reduced in length by 1.5m.</li> <li>- T66 will require lateral branches in its western canopy quadrant to be reduced in length by 1.5m.</li> <li>- Tree groups G20 and G21 will require lower lateral branches in their western canopy quadrants to be crown lifted to a height of 5m above ground level.</li> <li>- Weeping willow T58 will require lower lateral branches in its north and west canopy quadrants to be crown lifted to a height of 5m above ground level.</li> </ul> <p>All tree pruning should be carefully planned and undertaken in accordance with BS 3998: 2010 Recommendation for Tree Works. Any recommendations highlighting the management of potentially hazardous trees should be reviewed as soon as is practically possible.</p> <p>The removal and partial removal of 28 individual trees and 14 tree groups to facilitate access for construction represents a cumulative loss of approximately 3,000m<sup>2</sup> of canopy area, representing approximately half of the total canopy cover on site. Proposed new tree planting will mitigate this loss in canopy cover by providing a range of sizes and species, with details on individual species selected to be confirmed subject to planning condition. When established, the proposed planting scheme will provide an overall increase in tree quality.</p> <p>The tree selection should be appropriate to the site and chosen from a species palette in accordance with local tree planting policies, as well as being in accordance with any recommendations provided in the Preliminary Ecological Appraisal (The Ecology Consultancy, 2019) and any subsequent ecology reports.</p> <p>The positioning of mitigation planting in relation to new or existing buildings should take full account of the final canopy height and spread of all trees included in the planting scheme. Buildings should ideally be located a sufficient distance from the predicted canopy line and RPA to avoid future pressure to undertake remedial pruning or tree removal.</p> <p>It is recommended that specifications on aftercare and maintenance, including irrigation, as well as protection and formative pruning during establishment are included as part of the finalised tree planting strategy. Recommendations should be appropriate to the proposed planting and should be in compliance with Section 11 of BS 8545:2014 Trees from nursery to establishment in the landscape - Recommendations.</p> <p><b>Issues for the Arboricultural Method Statement</b></p> <p>Installation of new hardstanding and curb edges adjacent to T58 should require minimal excavation into its RPA. Levels of existing hardstanding of road and carparking surfaces should be retained. Wherever possible, existing sub-base layers should be re-used for any new surfaces to be installed to ensure minimal changes to below ground conditions. Where soil regrading is unavoidable, final levels should be informed by trial excavations to establish the depth and size of existing roots within the RPA of the tree, ensuring adequate growing media for nutrient uptake and anchorage is retained.</p> <p>The design and layout of new buildings should take into consideration the maximum canopy height and width of all trees to be retained. Buildings should ideally be located beyond the RPAs of the trees to be retained and allow sufficient distance from the existing canopy line to avoid future pressure to undertake remedial pruning or tree removal. Where the location of buildings inside the RPA is unavoidable, special engineering of foundations will be required and presented in a future method statement.</p> <p>In order to minimise disturbance in the RPAs of retained trees, excavation into the soil or soil regrading should not be a requirement of finalised construction layouts, existing levels should remain intact and should be protected from overloading to prevent soil compaction.</p> <p>Protective fencing should be installed accordance with figure 2 of BS 5837:2012 to enable the safe retention of trees to be retained. The positioning of tree protection and the establishment of construction exclusion zones (CEZ) should initially be based upon the root protection areas as described in Appendix 1 and should be in place prior to the commencement of works.</p> <p>All works should be undertaken from outside the RPA wherever possible. Where working in an RPA is unavoidable, ground protective measures fully compliant with section 6.2 of BS 5837: 2012 and agreed by the consulting arboriculturalist should be implemented.</p>	<p><b>Arboricultural Impact Assessment</b> (standalone report)</p>	<p>Planning Condition</p>



ENVIRONMENTAL MITIGATION	ES REFERENCE	PROPOSED MECHANISM TO SECURE
<p>Where construction of new buildings or hardstanding inside RPAs is likely to significantly impact a trees physiological or structural condition, specialist methods of construction should be developed and specified as part of the Arboricultural method Statement</p>		
<b>ECOLOGY</b>		
<p><b>Constraints and Mitigation / Compensation</b></p> <p><u>Designated Nature Conservation Sites</u> The Applicant will need to make the appropriate payment into SANG provision in order to ensure protection of the Thames Basin Heaths SPA.</p> <p><u>Habitats</u> The existing outgrown hedgerow with native species on the north-eastern boundary should be retained within Proposed Development, as hedgerows are listed as a priority habitat for Woking Borough (Surrey Nature Partnership, 2018). Impacts on this habitat should be avoided during development in line with national and local policy. The areas of introduced shrub on the site boundaries which form a green corridor should also be retained on site where possible, to retain the commuting corridor for wildlife around the site. Where this is not possible, compensatory replacement habitat of equivalent but ideally greater value should be included within the designs for the Proposed Development, with at least twice the area being lost to be planted, to account for the time required for trees and shrubs to grow. Scattered trees on site and along Kingfield Road should also be retained and protected within the development where possible. The current proposals include the removal of existing trees from site. Each tree removed should be replaced on site with at least two comparable trees. Environmental best practice measures, in accordance with British Standards Institution (2012) guidelines, should be implemented during the management works to protect trees.</p> <p><u>Bats</u> All British species of bat are listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of the Conservation of Habitats and Species Regulations 2017. Under this legislation it is an offence to deliberately capture, kill, disturb and damage or destroy a bat roost. Some species of bat are also Species of Principal Importance for Woking Borough (Surrey Nature Partnership, 2018). To ensure that the construction and operational phase of development does not cause any disruption to bat commuting routes, it is recommended that the final lighting scheme be designed to minimise any light spillage to the soft landscaped areas and trees on the site (BCT, 2018). The new lighting planned for the construction and operational phases of the development should be carefully designed to ensure that there is no additional light spill onto adjacent habitats, to ensure there will be no disruption to existing commuting routes and foraging areas. The existing areas of introduced shrub and outgrown hedgerow on the boundaries of the site that form a green corridor around the site, linking green areas should be retained within the development. The current proposals for the site retain much of the existing boundary planting, and the proposed landscaping on the boundaries of the site should include species that are of value to foraging bats. It is also recommended that measures are implemented to avoid night-time lighting of features that could provide important flight lines and foraging habitats for bats, such as the introduced shrub and outgrown hedgerow on the boundaries of the site.</p> <p><u>Great crested newt</u> Whilst the site was considered unlikely to support great crested newt, if any unexpected discoveries of this species are made on site during the proposed works, then all activities in the immediate vicinity should be halted and further advice sought from a suitably qualified ecologist.</p> <p><u>Widespread reptiles</u> Widespread reptiles are protected under the Wildlife and Countryside Act 1981 (as amended). The site contains some suitable habitat to support widespread reptile species, such as the continuous scrub which under the current proposals will be lost from the site. The majority of the habitats present on site are unsuitable to support reptiles. Consequently, there is limited potential for reptiles to be present at the site and any populations present are likely to be small and comprised of widespread species such as slow-worm. It is not necessary to carry out reptile surveys but precautionary working practices are required to protect any reptiles using the site (should they be present), and to comply with legislation. Areas of shrubs and scrub that may provide cover or hibernation sites must be carefully removed by hand and with hand-held tools. Prior to this, a suitably experienced ecologist will carry out a hand search of suitable habitat, and any possible refugia for reptiles will be moved. The vegetation clearance will comprise the clearance of vegetation above ground level, to a minimum height of 10 centimetres (cm), in the direction of retained habitat. This will encourage reptiles to be displaced to adjacent retained habitats. After 24 hours, vegetation clearance to ground level will be undertaken in the same direction. Any vegetation of value to breeding birds should be removed outside of the main breeding bird season, otherwise this work should be carried out when reptiles are active i.e. March to September.</p> <p><u>Breeding birds</u> All wild birds and their nests are protected under the Wildlife and Countryside Act 1981 (as amended). Any tree and vegetation removal work should be carried out September to February inclusive, to avoid any potential offences relating to breeding birds during their main breeding season (Newton et al., 2011). If vegetation removal during the breeding season is unavoidable then potential nesting habitat must be inspected before work commences to identify active birds' nests. Should they be present, the nest and a suitable buffer of habitat around it must be retained until the young have left the nest. The bird nest box identified on the north-western elevation of B16 has potential to support nesting birds. It is recommended that the nest box on B16 is relocated or replaced on a tree that will be retained on site within the proposals. This should be carried out September to February inclusive, to avoid any potential offences relating to breeding birds during their main breeding season (Newton et al., 2011). If the nest box is removed/ moved during the breeding season, it must be checked before work commences to identify any active birds' nests. Should they be present, the nest box must be retained in situ on B16 until the young have left the nest.</p> <p><u>Hedgehog</u> Scrub and areas of introduced shrub on site have potential to support hedgehog. Hedgehog are an SPI and are listed as a priority species for Woking Borough (Surrey Nature Partnership, 2018), making them a material consideration for planning, and as such should be protected as part of the development and habitats enhanced for these species. Hedgehog are also protected against intentional acts of cruelty under the Wild Mammals (Protection) Act 1996. Ground level vegetation clearance of the scrub and introduced shrub should be undertaken outside of the hibernation period (November – March inclusively), during the hedgehog active season, following the methodology provided for widespread reptiles above. Any fencing to be included within the Proposed Development has the potential to fragment areas of foraging and nesting habitat of value to hedgehogs. Connectivity is to be maintained between the Proposed Development and adjacent habitats by installing wildlife-friendly fencing, with gaps or tunnels in the bottom panels/gravel boards to allow easy passage for small mammals to continue foraging in this area. This can be achieved for example by cutting a hole (approximately 10x 10cm) in certain gravel boards, which is large enough for small mammals to pass through, but small enough to contain pets.</p> <p><u>Fox and rabbit</u> Potential fox dens and rabbit burrows were identified on site (Appendix 1, TN1 and TN3). All wild mammals are protected against intentional acts of cruelty under the Wild Mammals (Protection) Act 1996. To avoid possible contravention, due care and attention should be taken when carrying out works with the potential to impact on the suspected fox den and rabbit burrows. All active holes that will be impacted by the proposed development should be carefully dug out using hand tools, outside of the breeding season (March to July) and the area made inhospitable to encourage animals to relocate off site. Heavy plant machinery should not be tracked over the area where active holes are present until confirmed that any foxes have moved off site.</p> <p><u>Other protected species</u> In the unlikely event that any other protected species are found during management works on site, the works must stop immediately and advice sought from a suitably qualified ecologist on how to proceed.</p>	<p><i>ES Volume 3, Appendix: EIA Methodology (Annex 9 – Updated Preliminary Ecological Appraisal)</i></p>	<p>Planning Condition</p>

## Woking Football Club Chapter 15: Mitigation and Monitoring Schedule

ENVIRONMENTAL MITIGATION	ES REFERENCE	PROPOSED MECHANISM TO SECURE
<b>ARCHAEOLOGY</b>		
A watching brief in accordance with an approved Written Scheme of Investigation (WSI) during ground works.	<i>ES Volume 3, Appendix: EIA Methodology (Annex 10 – Historic Environment Assessment)</i>	Planning Condition
<b>CLIMATE CHANGE</b>		
<p>Procurement of sustainable materials, with consideration to the carbon footprint of the material from the extraction of raw materials, to production of construction products and the transport of products from factory to site. ES Volume 1, Chapter 15: Mitigation and Monitoring presents the environmental management and mitigation measures that the Applicant is committed to implementing throughout the demolition and construction works to, either eliminate, or reduce the significant of any likely environmental effects.</p> <p>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 the site enabling works will be explored and exploited where available.</p> <p>The selection of sustainable material with a low environmental impact and their sustainable procurement are to be a key parameter in the specification of material, together with their end-of-life disposal. 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.</p> <p>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.</p>	<i>ES Volume 3, Appendix: EIA Methodology (Annex 4 – Greenhouse Gas Emissions Assessment)</i>	Planning Condition

Table 15.2 Mitigation and Monitoring Schedule – Completed Development

ENVIRONMENTAL MITIGATION	ES REFERENCE	Proposed Mechanism to Secure
<b>SOCIO-ECONOMICS</b>		
<p>The Applicant will be required to pay the Community Infrastructure Levy (CIL) to WBC as part of the development proposed. WBC's Regulation 123 List and Infrastructure Development Plan (IDP) identify that £16,088,227 of the CIL contributions collected in the Borough (c. 30%) will go towards funding committed education provision projects between 2012 and 2022.</p> <p>The purpose of CIL contributions is to offset the negative impacts on existing local infrastructure (as a result of anticipated new development coming forward in an area) by identifying and making provision for funding of key infrastructure provision, to help support the regeneration of an area and the resulting increase in demand on existing social facilities. It is, therefore, assumed that CIL funds collected by WBC will support the mitigation of the potential for adverse impacts on existing social infrastructure (i.e. primary and secondary education) by funding the provision of new infrastructure (i.e. infrastructure as identified in the Regulation 123 List and IDP).</p>	<p><b>ES Volume 1, Chapter 6: Socio-Economics</b></p>	<p>Planning Obligation</p>
<b>HIGHWAYS AND TRANSPORT</b>		
<p><b>Travel Plan</b></p> <p>A Residential and Stadium Travel Plan will be produced to encourage the use of non-car modes of travel and ensure the sustainability of the Proposed Development. A draft Travel Plan is appended to the Transport Assessment (Annex 5). The Travel Plan has been developed in accordance with guidance issued by SCC.</p> <p>A Travel Plan sets out the tools and measures deemed necessary to enable residents of the site to make informed decisions about their travel, with the ultimate objective of reducing single occupancy vehicle trips. The travel plan includes targets to reduce travel by single occupancy vehicles, and a commitment to monitor travel against these targets through a series of travel surveys.</p> <p><b>Delivery and Servicing Management Plan (DSMP)</b></p> <p>A DSMP is provided in the Transport Assessment (refer Annex 5). The DSMP aims to:</p> <ul style="list-style-type: none"> <li>- Rationalise / minimise the number of servicing trips generated by the Proposed Development;</li> <li>- Avoid peaks in demand for servicing activity;</li> <li>- Minimise deliveries during peak hours and maximise deliveries during off peak hours;</li> <li>- Ensure a fast turnaround for delivery vehicles;</li> <li>- Increase building security; and</li> <li>- Provide feedback / monitoring to ensure that the servicing area operates effectively</li> </ul> <p>The final DSMP is proposed to include the following information:</p> <ul style="list-style-type: none"> <li>- Delivery pre-booking: Deliveries will be scheduled to be spread across the peak activity. All commercial and refuse deliveries will be scheduled and allocated a time slot to arrive;</li> <li>- Goods in authorisation procedure: To ensure the rapid turnaround of delivery vehicles it is expected that service area personnel will be authorised to receive goods for all tenants;</li> <li>- Key staff to manage the service area; and</li> <li>- Monitoring: Servicing area activity will be regularly monitored to ensure that it is operating in an efficient way.</li> </ul> <p><b>Event Management Plan</b></p> <p>An EMP is provided in the Transport Assessment (refer Annex 5). The EMP aims to set out an overarching strategy to ensure that travel made by spectators to the site is carried out in the most sustainable and efficient means possible and minimise any disruption in the local area on match days.</p> <p>The EMP provides information on the existing accessibility of the stadium and the way in which sustainable transport can be promoted. The main aim of the EMP is to minimise disruption in the local area and allow visitors to make informed decisions about their travel.</p> <p><b>Mobility Strategy</b></p> <p>The Proposed Development is supported by a Mobility Strategy which includes:</p> <ul style="list-style-type: none"> <li>- Active travel corridors internally within the site, providing safe and convenient movement for pedestrians and cyclists;</li> <li>- Potential participation in a bike sharing scheme, and the provision of a fold up bike to each new household upon first occupation;</li> <li>- Provision of car club membership to each resident and car club priority parking spaces provided within the Proposed Development;</li> <li>- The development of a carpooling platform (Faxi) to promote car sharing;</li> <li>- Improvements to matchday public transport to deliver a higher capacity bus service which will operate pre and post-match, and the potential to contribute to the on-going provision on existing bus services serving the site;</li> <li>- The provision of electric vehicle charging points; and</li> <li>- A Community Hub and Community Concierge Team, acting as a focal point for all Mobility services, and a Transport Information Centre and Micro Consolidation Centre.</li> </ul>	<p><b>ES Volume 1, Chapter 7: Highways and Transport</b></p>	<p>Planning Condition</p>
<b>AIR QUALITY</b>		
<ul style="list-style-type: none"> <li>- Installation of low NOx boilers only, with emission rates below 40 mg/kWh;</li> <li>- Use of Air Source heat Pumps (ASHP) to provide heat and hot water to the Proposed Development;</li> <li>- Running of the boiler flues to 1.5 m above roof level to promote dispersion; and</li> <li>- Use of exhaust flues for the boilers and emergency generators that discharge vertically upwards, unimpeded by any fixture on top of the stack (e.g. rain cowls).</li> </ul>	<p><b>ES Volume 1, Chapter 8: Air Quality</b></p>	<p>Planning Condition</p>
<b>NOISE AND VIBRATION</b>		
<p>Noise levels from building services plant associated with the Proposed Development will be controlled to ensure that it would not have an effect on nearby noise sensitive premises. Criteria for the assessment are set in accordance with BS 4142.</p>	<p><b>ES Volume 1, Chapter 9: Noise and Vibration</b></p>	<p>Planning Condition</p>
<p>The baseline noise levels recorded at positions representative of the locations of sensitive receptors surrounding the Proposed Development have been used to set noise limits for the building services plant.</p>		

ENVIRONMENTAL MITIGATION	ES REFERENCE	Proposed Mechanism to Secure
<p>Crowds entering the stadium will be encouraged into the concourse areas, which will serve food and beverages prior to the match and at half time. There will be no confectionary or temporary food and beverage facilities outside the stadium. Supporters will not be re-admitted to the stadium once they leave.</p> <p>Venues where entertainment takes place more than once per week are recommended to comply with the following:</p> <ul style="list-style-type: none"> <li>- The <math>L_{Aeq}</math> of the entertainment noise should not exceed the representative background noise level LA90 (without entertainment noise); and,</li> <li>- The <math>L_{10}</math> of the entertainment noise should not exceed the representative background noise level L90 (without entertainment noise) in any 1/3 octave band between 40 Hz and 160 Hz.</li> </ul> <p>The precise design details of the façade and the ventilation provisions will be finalised as the design progresses. However, Table 9.19 demonstrates that appropriate glazing specifications are available and that these coupled with an appropriate ventilation strategy, can meet the required internal noise criteria.</p> <p>The bar and hospitality spaces will be mechanically ventilated and comfort cooled, so that the façade will remain closed when it is occupied.</p> <p>Music noise levels within the spaces are to be controlled so that they do not exceed <math>L_{Aeq}</math> 90 dB, and 90 dB and 85 dB at 63 Hz and 125 Hz (bass frequencies) respectively.</p> <p>The façade of the bar and hospitality spaces are to achieve <math>R_w + C_{tr}</math> 42 dB. With this level of sound insulation provided the predicted music noise emissions will be below the background noise levels, which would correspond with a Very Low magnitude of impact. The façade sound insulation requirement corresponds with Glass Type 6 referenced in Table 9.40.</p> <p>The external Public Address System will be used purely for emergency announcements. On this basis its use during regular testing has been considered. The precise details of the arrangement are unknown, though it will only be tested during the daytime, with the level high enough to comply with the relevant standards .</p> <p>Based on the baseline background noise levels, the total noise from building services plant will be limited in line with the noise levels detailed in <i>Chapter 9: Noise and Vibration</i> at a position 1m from all nearby façades.</p> <p>Mitigation, in the form of appropriately specified façades, is to be adopted for the introduced receptors.</p> <p>Additional crowd management measures, as required, will be identified through monitoring of crowd dispersion when in operation.</p> <p>Ancillary activities, such as smoking areas and taxi pickups, will need to be appropriately positioned and managed so that noise emissions to the existing and introduced receptors are controlled.</p> <p>The public address system, when tested, is assumed to achieve the limits listed – this is likely to be secured through a planning condition by WBC.</p> <p>The building services plant will be designed to the limits listed. Reviews of the expected building services plant indicates that the proposed building services plant noise limits are achievable, and, on this basis, no further mitigation measures are currently proposed.</p>	<p><i>ES Volume 1, Chapter 9: Noise and Vibration</i></p>	<p>Planning Condition</p>
<b>WIND</b>		
<p><b>WIND MITIGATION MEASURES</b></p> <p>The following measures have been incorporated into the design of the Proposed Development to improve wind conditions:</p> <ul style="list-style-type: none"> <li>- The addition of a 3m tall, 1.5m wide, solid side screen to canopies above entrances at the western façade of Block 5, at the southern façade of Block 2 and at the southern façade of Block 1 (probe locations 21, 67, and 95);</li> <li>- The addition of two, 2m tall, 2m wide 50% porous screens located either side of entrances at the north-west of Block 4 (probe location 35);</li> <li>- The addition of three, 3m tall, 2m wide, 50% porous baffles with a 3m ground clearance placed at the north west corner of the proposed stadium and spaced 4m apart running south along the proposed stadium façade;</li> <li>- The recessing of entrance locations at the eastern façade of Block 4, the northern façade of Block 2, and the eastern façade of the proposed stadium (probe locations 19, 91, and 128) by 1.5m;</li> <li>- The addition of two, 5m tall deciduous trees in the amenity space to the south of Block 3 and to the west of Block 4 (north of probe location 40);</li> <li>- The addition of three, 5m tall deciduous trees at ground level to the south-east of Block 4;</li> <li>- The addition of a 3m tall, 50% porous screen separating entrances at the south façade of the eastern most block of Block 4;</li> <li>- The addition of a 3m tall, 5m wide, 50% porous screen extending eastward from the eastern façade at the south-east of Block 4 spanning the entire width of the podium level;</li> <li>- The addition of a single 3m tall deciduous tree at the south-east corner of Block 1; and</li> <li>- The addition of a 3m tall, 4m wide, 50% porous screen at the eastern end of the podium level at the south façade of Block 1.</li> </ul>	<p><i>ES Volume 1, Chapter 10: Wind Microclimate</i></p>	<p>Planning Condition</p>
<b>DAYLIGHT, SUNLIGHT, OVERSHADOWING, LIGHT POLLUTION &amp; SOLAR GLARE</b>		
<p><b>Light Pollution:</b> the lighting levels should reflect those presented in the British Standards for lighting of car parks with Medium Traffic (BS 12464-2:2007 table 5.9) and obtrusive light controlled by the levels controlled by Environmental Zone E3 (suburban / medium district brightness) (BS 12464-2:2007 chapter 4.5).</p>	<p><i>ES Volume 3, Appendix: Daylight, Sunlight, Overshadowing and Solar Glare (Annex 6)</i></p>	<p>Planning Condition</p>
<b>WATER RESOURCES, DRAINAGE AND FLOOD RISK</b>		
<p>The Proposed Development will incorporate green roofs on all residential blocks, bio-retention areas (incorporating tree-pits and rain gardens), as well as lined permeable paving. Surface water will be discharged to the public sewer, which ultimately discharges to the Hoe Stream and will be controlled by a hydro-brake. The drainage arrangement for the Proposed Development will limit runoff for all events up to and including the 100 year plus 40% climate change to approximately 80% of the 1 year rate of runoff from the site i.e. to a rate of 30 l/s. This surface water runoff is likely to be much less than the existing runoff rates for storms in excess of the 1 in 15 year return period and will not adversely affect the site.</p> <p>The Drainage Strategy (incorporated as part of the Proposed Development) would ensure that the surface water runoff rates would be reduced or not increase beyond the existing rates for the operational lifetime of the Proposed Development.</p>	<p><i>ES Volume 1, Chapter 12: Water Resources, Drainage and Flood Risk</i></p> <p><i>ES Volume 3, Appendix: Water Resources, Drainage and Flood Risk (Annex 2 – Flood Risk Assessment and Drainage Strategy)</i></p>	<p>Planning Condition</p>



ENVIRONMENTAL MITIGATION	ES REFERENCE	Proposed Mechanism to Secure
<p>All surface runoff will be stored within the site and will discharge to the Hoe Stream, as detailed within the Surface Water Drainage Strategy. Therefore, there is the potential for the Paper Court SSSI to be affected by surface water runoff from the site, should runoff on-site not be properly treated. However, the proposed Drainage Strategy will ensure that all runoff from the site will receive an appropriate level of treatment in accordance with the SuDS Manual.</p> <p>Water quality treatment will be provided by ensuring all runoff is routed through appropriate treatment. There are a range of SuDS proposed to improve water quality, these include; green roofs, bioretention (rain gardens), permeable paving and tree pits. The level of treatment provided is appropriate for the use of the area. The location and types of SuDS features are shown on the Drainage Strategy layout included in the FRA. Appendix D within the FRA includes a table which identified that the proposed SuDS will provide sufficient water quality treatment for the expected contamination based on the proposed site uses.</p> <p>The use of SuDS techniques for drainage pollution control will ensure that surface water discharged from the Proposed Development will be of a sufficient quality in accordance with latest guidance.</p> <p>The buildings have been designed to maximise water efficiency through measures such as using alternative sources of water, such as rainwater and greywater harvesting, where possible. Water butts could be installed to residential properties to provide water for external irrigation, with larger rainwater harvesting units for commercial and industrial development, where appropriate.</p>	<p><i>ES Volume 1, Chapter 12: Water Resources, Drainage and Flood Risk</i></p> <p><i>ES Volume 3, Appendix: Water Resources, Drainage and Flood Risk (Annex 2 – Flood Risk Assessment and Drainage Strategy)</i></p>	<p>Planning Condition</p>
<p><b>ECOLOGY</b></p>		
<p><b>Opportunities for Ecological Enhancement</b></p> <p><u>Green roof / biosolar</u></p> <p>It is recommended that the proposed buildings incorporate areas of biodiverse roof where possible. To demonstrate the highest feasible and viable sustainability standards in line with London Plan Policies (GLA, 2016) it is recommended that a specification for a biodiverse roof be drawn up by a company with a proven track record in delivering these features in London. Any biodiverse green roof should support at least 25 plant species.</p> <p>A biodiverse green roof would provide additional benefits such as protecting and prolonging the life of the roof membrane, reducing building energy use by insulating the building in winter and keeping it cooler in summer, providing a SuDS function by reducing storm water run-off from the roof, reducing the urban heat island effect and local air/noise pollution. Combining a biodiverse roof with PV panels (biosolar roof) would also provide further benefits, such as the cooling effect the vegetation has on the PV cells, increasing their productivity in hot weather, as well as resulting in a more efficient use of roof space.</p> <p>The green roof should follow UK standards (GRO, 2014) and include additional habitat features such as deadwood, varying substrate depths and areas of bare rocky substrate. This will provide good habitat for a range of invertebrates and birds including Surrey Biodiversity Action Plan species such as stag beetle.</p> <p><u>Provision of bird nesting and bat roosting opportunities</u></p> <p>The provision of bird boxes would be appropriate at this site. Many different designs are available including boxes to support colonial species such as house sparrow, a Species of Principal Importance for Woking Borough. Woodcrete bird boxes are recommended as they are long lasting compared to wooden boxes, insulate occupants from extremes of temperature and condensation and are available in a broad range of designs.</p> <p>The provision of artificial bat roosting opportunities will also be appropriate at this site. These roosting opportunities may include bat boxes located on any retained mature trees on the boundaries of the site, or incorporated into the design of the new buildings, adjacent to suitable foraging and commuting habitats for bats. Bat boxes should be positioned between 3-5m above ground level facing south-east to south-west, in a location that will not be lit by artificial lighting. When incorporating more than one box, they should be placed apart from one another, ideally on different building facades. Models from Schwegler such as 1FF Flat Bat Box are appropriate for use on retained trees, suitable for the species potentially utilising the site, and do not require any cleaning. Integrated bat features such as Schwegler Bat Tube 1FR should be included within the designs of the new buildings, and are maintenance free. More information regarding the bat boxes are available through the Schwegler website.</p> <p><u>Dead wood habitats</u></p> <p>It is recommended that, where possible, deadwood habitats are included on site. New log piles using untreated timber can be created within any public landscaped areas of the site to enhance the site, providing habitat for stag beetle and other invertebrates and fungi.</p> <p><u>Sustainable Drainage System (SuDS)</u></p> <p>SuDS comprise a linked system of soft landscaping, green roofs, rain-water harvesting technologies including ponds, below ground drainage and porous surfacing which can be designed into a development to intercept and attenuate surface water and prevent flooding. Design of a SuDS would be appropriate to this development and should be considered as part of the site master plan. A SuDS would also increase biodiversity, for example by providing a series of habitats for wildlife to use, if appropriately planted – see below.</p> <p><u>Wildlife planting</u></p> <p>Any new landscaping within the proposed development should comprise wildlife planting, and should include native species and/or species of recognised wildlife value. The use of nectar-rich and berry producing plants will attract a wider range of insects, birds and mammals and continue to accommodate those already recorded at the site.</p> <p>Good horticultural practice should be utilised, including the use of peat-free composts, mulches and soil conditioners, native plants with local provenance and avoidance of the use of invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).</p> <p>Any areas of amenity grassland should use a flowering lawn mixture such as Emorsgate EL1 Flowering Lawn Mixture. These contain slow growing grasses with a selection of wild flowers that respond well to regular short mowing.</p>	<p><i>ES Volume 3, Appendix: Ecology (Annex 10 – Updated Preliminary Ecological Appraisal)</i></p>	<p>N/A</p>
<p><b>CLIMATE CHANGE</b></p>		
<p>A Residential Travel Plan (RTP) has been developed for the Proposed Development which sets out an overarching strategy; “to ensure that travel made by residents and visitors of the site is carried out in the most sustainable means possible.”</p> <p>A Matchday Travel Plan has also been produced to “to reduce the proportion of travel undertaken by single occupancy cars, thus increasing travel by sustainable modes (including car sharing)”.</p> <p>The Proposed Development will achieve an overall total on-site carbon reduction of 25.8% relative to Part L of the Building Regulations, which complies with the Part L1A and L2A building regulations. To achieve to reductions, the following measures are proposed to minimise energy consumption, as set out in the Energy Strategy<sup>17</sup> and Sustainability Statement :</p> <p>The proposed building fabric is designed to exceed the minimum fabric requirements of Building Regulations Part L, where possible and feasible. Building fenestration balances the need of good daylight, without leading to excessive summertime solar gain;</p> <p>The project is designed for natural ventilation, when climate allows, with mechanical ventilation with heat recovery (MVHR) systems providing ventilation when natural ventilation is not appropriate; and a range of low and zero carbon technologies will be implemented including Air Source Heat Pumps and photovoltaics.</p> <p>Within the flexible use elements of the Proposed Development, spaces will be constructed to include very high levels of insulation and low air leakage, and a BREEAM rating of “Very Good” is targeted.</p> <p>Facilities throughout the Proposed Development will be provided with recycling facilities that will allow for source separation of waste within dwellings and non-residential buildings. This will cause indirect reductions in GHG emissions through reduced GHG emissions within the manufacturing process of goods.</p>	<p><i>ES Volume 3, Appendix: EIA Methodology (Annex 4 – Greenhouse Gas Emissions Assessment)</i></p> <p><i>Energy Strategy (standalone report submitted to accompany the planning application)</i></p> <p><i>Sustainability Strategy (standalone report submitted to accompany the planning application)</i></p>	<p>Planning Condition</p>