

Table 10.2: Summary of Surface Water Resources Receptors

Water feature	Location description	Watercourse classification	WFD water body and current status	WFD 2027 status objective (identified in RBMP)	Designations	Receptor value / sensitivity
Moselle Brook	Culverted watercourse under High Road along western side of Project Site.	Main River	Moderate (ecological), Heavily Modified Water Body	Good (ecological) (potential)	Main River	Current – Low

Table 10.3: Summary of Groundwater Resources Receptor

Geology	Location	Description	Aquifer Classification	WFD current status	WFD 2027 status objective	Designations	Receptor value / sensitivity
Superficial Deposits							
Alluvium	Underlying entire Project Site.	Clay silts and sand	Secondary	Not assessed	N/A	None	Low
Bedrock							
London clay over CHALK,	Underlying entire Project Site.	Permeable chalk	Principal	Poor	Poor (chemical)	The Project Site is partly in the outer zone of an Environment Agency groundwater vulnerability zone, as defined by the Environment Agency web site.	High

Table 10.4: Surface Water Drainage and Flood Risk Construction Residual Effects

Environmental Effect	Sensitivity of Receptor	Nature of Impact	Impact Magnitude	Significance	Additional Mitigation	Residual impact Magnitude	Residual Significance of Effect
Suspended Sediment into Moselle Brook and shallow aquifer	Low	Positive	High	Moderate	Controlled surface water releases; Clean site; Settlement tanks;	Very Low	Minor-neutral
Oil and hydrocarbons into Moselle Brook and shallow aquifer.	Low	Positive	High	Moderate	Store hydrocarbons in bunded tank in designated area; Valves protected against vandalism; Drip trays for plant; Emergency Spillage	Very Low	Minor-neutral

					action plan in place.		
Concrete and cement products in to Moselle Brook and shallow aquifer	Low	Positive	High	Moderate	Pre-mix and delivered from off-site source; Designated impermeable areas; Water for washing down will be tankered to licensed waste operator; Use of precast concrete units.	Very Low	Minor-neutral
Contaminated Land affecting Moselle Brook and shallow aquifer.	Low	Positive	High	Moderate	Regular monitoring; If discovered, stop work, treat contaminated soil; or remove off-site to licensed Waste operator.	Very Low	Minor-neutral
Physical Disturbance to chalk aquifer	High	Positive	High	Moderate	Monitoring to ensure confining impermeable clay layer, approx. 10m thick, to the chalk aquifer remains intact.	Very Low	Minor
Preferential pathways to surface water drainage system and shallow aquifer	Low	Positive	High	Moderate	Decommissioning of Boreholes to satisfaction of EA; Dewatering of excavations to approved repository; All existing utilities will be identified and marked prior to work commencing; any damage to the drainage network will be immediately repaired.	Very Low	Minor-neutral
Flood Risk to surrounding area	High	Positive	High	Moderate	The discharge rates into Moselle Brook and Thames Water Sewers will be regulated to an agreed rate ensuring no increase in flood risk.	Very Low	Minor

Table 10.5: Surface Water Drainage and Flood Risk – Operational Residual Effects

Environmental Effect	Sensitivity of Receptor	Nature of Impact	Impact Magnitude	Significance	Additional Mitigation	Residual impact Magnitude	Residual Significance of Effect
Leaks, spillage, application of fertilisers and pesticides – risk of contaminating surface water	Low	Positive	High	Moderate	Emergency spill response; Vehicle speed limits; Management plan for use of fertilisers etc. Hydrocarbons and silt removed from runoff before entering the receiving water body.	Very Low	Minor-neutral
Contamination for insitu materials.	Low	Positive	High	Moderate	Building above damp-proof course hence isolated from underground strata and groundwater; New drainage will be constructed to meet Building Regulations Part H.	Very Low	Minor-neutral
Flood risk to surrounding area.	High	Positive	High	Moderate	The Project does not increase the impermeable area; The discharge from the Project will be attenuated by storage tanks and discharged at agreed rates; Design is for the 1:100 year plus climate change event to be stored in the underground storage tanks and oversized pipes in excess of the agreed discharge rates. The drainage system will be regularly maintained and back up pumps will be available.	Very Low	Minor
Flood risk to the Project Site.	Low	Positive	High	Moderate		Very Low	Minor-neutral

11. Ground Conditions and Hydrogeology

11.1 Introduction

11.1.1 This chapter of the ES has been produced by Buro Happold and addresses the potential effects the Project may have on the ground conditions of the Project Site and surrounding area. The assessment describes the potential and known sources of contamination within and around the Project Site, current conditions, those aspects of the Project that could affect, or be affected by soil and water contamination or the physical ground conditions, associated potential impacts, mitigation measures and residual impacts following mitigation.

11.2 Assessment Criteria and Methodology

11.2.1 The methodology for impact prediction is based on assessing both the magnitude of the changes expected and the sensitivity of the receptors. Criteria for assessing the significance of potential human and environmental impacts are based upon:

- (i) a qualitative assessment of the magnitude of the impact (or how far the impact deviates from the baseline condition); and
- (ii) the receptor sensitivity.

11.2.2 The resources/receptors and the main potential effects considered in this assessment are outlined in Table 11.1.

Table 11.1: Receptors and Potential Effects

Receptor	Effect
Construction Workers	Health effects due to the direct dermal contact or indirect inhalation or ingestion of contaminated soil and groundwater.
Future Site Users (residents/workers/visitors)	Health effects due to dermal contact with or the direct or indirect ingestion of any residual contaminated soil, inhalation of contaminated dusts and/ or hazardous fibrous substances, Health effects due to the presence of flammable or asphyxiating ground gases in enclosed spaces Health effects due to inhalation of vapours (volatile compounds) indoors and outdoors
Surrounding Land Users (neighbours)	Health effects due to inhalation of wind-borne contaminated dusts and/ or hazardous fibrous substances [mainly during construction but also in operation] Health effects due to inhalation of vapours (volatile compounds) that migrate via permeable strata and in air
Controlled Waters (groundwater)	Contamination of water resources by contaminated run-off or migration of leachable mobile determinands via permeable strata.
Ecology	Phytotoxic effects on plant health and growth Toxic effects on the health of fauna Indirect impacts on aquatic flora and fauna via contamination of water resources
Built Environment	Chemical attack on buried concrete structures Tainting of water supply by contaminant permeation of plastic pipelines

- 11.2.3 Receptors are considered to have varying degrees of sensitivity to contamination potentially present beneath the site, based on the potential scale of exposure and the integrity of any site specific exposure pathways. The scale of receptor sensitivity is defined in Table 11.2.

Table 11.2: Criteria for determining receptor sensitivity

Sensitivity	Description
Very High to High	People (on site or on neighbouring properties) occupying land in residential use with gardens, or using allotments, children's play areas etc. Construction workers engaged in extensive earthworks Principal aquifer of regional importance used for potable water supply. Highly ecologically sensitive watercourse or water bodies Nationally or internationally designated ecological sites Buildings of high historic or local importance
Medium	People (on site or on neighbouring properties) occupying land in residential use without gardens, or using public areas of soft landscaping / open spaces Construction workers engaged in moderate earthworks Secondary aquifer, local watercourse or non-designated water bodies not used for large scale human consumption which can be used for industrial purposes; may be important for local recreational purposes Locally designated ecological sites Buildings, including services and foundations
Low	People (on site or on neighbouring properties) occupying or using commercial or industrial buildings, car parking, hard landscaping Construction workers site but with minimal disturbance to the ground Non-potable water resources, water body of low recreational qualities Sites of low ecological value and flora and fauna occupying non-designated open areas Infrastructure (e.g. roads, highways and railways)
Very Low	Land with no access to people and no neighbouring properties Construction workers on site, but with no disturbance to the ground on site Non-aquifer, no nearby watercourses or water bodies within 1km No sites of significant ecological value and no built development within 1km

- 11.2.4 The criteria used to assess the magnitude is based on a qualitative assessment of the potential seriousness of the effect or how far the effect deviates from the baseline condition and the period of time that the effect could last, as shown in Table 11.3.

Table 11.3: Criteria for determining magnitude of potential effects

Magnitude	Description
Substantial	Short term (acute) or long term (chronic) adverse effects on human health, broadly equivalent to "significant harm" as defined by the Environmental Protection Act 1990 Persistent and extensive pollution of water resource or ecosystem equivalent to Category 1 pollution incident (major pollution release) Catastrophic damage to crops / building / infrastructure
Moderate	Short term (acute) or long term (chronic) adverse effects on human health but not equivalent to "significant harm" as defined by the Environmental Protection Act 1990 Non-persistent pollution of water resource or ecosystem equivalent to Category 2 pollution incident (moderate pollution release) Significant damage to crops / buildings / infrastructure (on or off site)

	Contamination of off-site soils
Minor	Easily preventable, non-permanent health effects on humans Minor, low-level, localised, temporary pollution of water resources or ecosystem Easily repairable damage to crops / buildings / infrastructure Easily preventable, permanent health effects on humans Localised damage to buildings / infrastructure (on or off site)
Neutral	No discernible negative or positive effects

11.2.5 The combination of the sensitivity of the receptor and the magnitude of the impact provides an indication of the level of contamination on the Project Site, and the nature of the severity of possible effects. It should be noted that both rankings may vary in accordance with the different scenarios being considered (i.e. baseline, construction and operation). Positive or negative effects during construction and when the site is operational will be identified. The positive effects are associated with the mitigation of risks associated with contamination. The negative effects are temporary during the construction phase and relate to the increased potential for contaminant exposure (e.g. from the generation of contaminated dusts) and long term from the use of the site during the operational phase (and any residual contamination if remediation was inadequate or not carried out).

11.2.6 The assessment of potential and residual impacts will therefore use the scale of significance set out below. Effects can also be described as:

- Adverse or beneficial
- Direct or indirect
- Temporary or permanent
- Reversible or irreversible
- Cumulative

Table 11.4: Matrix for Determining Significance of Effects

Criteria			Receptor Sensitivity				
			VH	H	M	L	VL
Impact Magnitude	Beneficial	VH	Substantial	Substantial	Major	Moderate	Moderate
		H	Substantial	Major	Moderate	Moderate	Minor
		M	Major	Moderate	Moderate	Minor	Minor
		L	Moderate	Moderate	Minor	Minor	Minor-Neutral
		VL	Moderate	Minor	Minor	Minor-Neutral	Minor-Neutral
	Negligible		Neutral	Neutral	Neutral	Neutral	Neutral
	Adverse	VL	Moderate	Minor	Minor	Minor-Neutral	Minor-Neutral
		L	Moderate	Moderate	Minor	Minor	Minor-Neutral
		M	Major	Moderate	Moderate	Minor	Minor
		H	Substantial	Major	Moderate	Moderate	Minor
		VH	Substantial	Substantial	Major	Moderate	Moderate

Methodology

- 11.2.7 A source-pathway-receptor analysis of the site (in accordance with good practice documents) will be undertaken. The Conceptual Site Model considers its environmental features, alongside the expected interaction of potential contamination sources with the environment. These terms are defined below:
- Sources: Potential or known sources of contamination associated with historic or recent/current land uses (e.g. Victorian factories, brewery use, fuel storage, spills, leaks);
 - Pathways: mechanisms / systems through which exposure of a receptor to a contaminant could occur e.g. direct contact with contaminated soils, migration through air, over land or via permeable ground; and
 - Receptors: of varying sensitivity that could be adversely affected by contact (direct or indirect) with a contaminant. e.g. people living, working or visiting the site, groundwater and surface water bodies, ecological resources (flora and fauna).
- 11.2.8 Where a source and receptor are linked by an exposure pathway, a 'pollutant linkage' is present, whereby there is a circumstance through which some level of environmental harm could occur which has to be assessed and mitigation identified as appropriate.

Cumulative

- 11.2.9 Cumulative impacts from other developments have been considered and discounted as other developments are too distant from the site to have an impact on the sites ground conditions and hydrology.

Previous Assessment

- 11.2.10 A previous assessment had been undertaken in May 2010.

Scoping Opinion

- 11.2.11 Although a formal Scoping Opinion was not sought the Scope of the EIA was based on the technical scope for the original 2010 ES and the Southern Addendum. A draft Scoping Report was sent to the Council on the 19th June 2015, for their informal comments and discussion. No informal comments were received in relation to the Ground Conditions and Hydrology assessment.

Consultation

- 11.2.12 Consultation with the Local Authority officer responsible for ground contamination has been undertaken to ensure agreement with the proposed remedial and works approach.

Planning Policy and Guidance

- 11.2.13 Land contamination is regulated under several regimes, including environmental protection, pollution prevention and control, waste management, planning and development control and health and safety legislation. The primary regulatory regimes under which contaminated land are managed in the UK are: the planning process described in the National Planning Policy Framework (DCLG, 2012) and Part 2A of the Environmental Protection Act (DEFRA, 1990).
- 11.2.14 The framework for the assessment of potential land contamination adopted in this assessment will be based on current guidance documents regarding the implementation of these regimes and the assessment of potentially contaminated land, with particular reference to: the Environment Agency Model

Procedures (Environment Agency, 2004) and their Guiding Principles on Land Contamination; and the relevant British Standard 10175 (British Standards Institute, 2011).

- 11.2.15 Reference will also be made to regional planning policy, namely the London Plan and Spatial development strategy for Greater London, July 2011 (Greater London Authority, 2013). The London Borough of Haringey Core Strategy was reviewed, however, no comment on contaminated land was included within the document.

Baseline Data Collection

Geographical Scope

- 11.2.16 This Chapter covers the red line area as defined in Appendix 1.1.

Assumptions and Limitations

- 11.2.17 None

11.3 Baseline Conditions

- 11.3.1 This section provides a description of the current baseline environmental conditions of the site with respect to contamination. The area covered within the report includes the land within the site boundary, and any surrounding land which could impact the Project or be susceptible to impact as a result of development.

Site History

- 11.3.2 With reference to historical maps, the site was occupied by residential dwellings, orchards and open space since at least 1867 until 1896 when the orchards had been cleared, and buildings constructed along Tottenham High Road. Following construction of the football stadium in 1899, other parts of the site have been occupied by various commercial/industrial land uses including, but not limited to, engineering works, a brewery, industrial units, a machinery manufactory, bottling stores, paper works, a shoe factory, garages, a piano works, milk depot, warehouses, electrical substations, and a surgery until reaching its existing condition in 1999.
- 11.3.3 Numerous commercial/industrial uses have surrounded the site for varying periods since at least 1881 including a gas works (approximately 1km northeast), Great Eastern Railway lines, and various engineering and industrial works. A more detailed description of the site history is given in Section 3.2 of the Buro Happold Desk Study Report (Appendix 11.1).

Geology and Hydrology

- 11.3.4 According to the geological maps for the area the sequence of strata beneath the site consists of the Kempton Park Gravel Formation underlain by London Clay, the Lambeth Group (formerly Woolwich and Reading Beds) and Thanet Sands. The Thanet Sands are underlain at a depth of about 60m below ground level (bgl) by the Upper Chalk.
- 11.3.5 The southeast corner of the site is recorded to be underlain by the Enfield Silt Formation (brickearth) which overlies the Kempton Park Gravels. The groundwater table is likely to sit within the Kempton Park Gravels forming an un-confined aquifer, designated by the Environment Agency as a Minor Aquifer. A

deeper aquifer is also likely to be present within the deposits of the Lambeth Group and Thanet Sand Formation, confined by the overlying London Clay.

- 11.3.6 The Lambeth Group and the Thanet Sand Formation are also classified by the Environment Agency as Minor Aquifers. Groundwater located within the underlying Chalk is designated as a Major Aquifer that is of very high importance to the regional water supply. The nearest recorded groundwater abstraction is located 285m north-east of the site at 881 Tottenham High Road. The abstraction license is owned by Cannon Automotive Ltd, with groundwater utilised for general cooling purposes. The nearest recorded groundwater abstraction licence for potable supply is located 898m east of the site. The license is owned by Thames Water Utilities Limited. The aquifer that both these abstraction licenses penetrate is unknown but is likely to be the Chalk. The majority of the site, excluding the northwest corner, is located within a Groundwater Source Protection Zone (SPZ) II (Outer Protection Zone).

Hydrology

- 11.3.7 The nearest surface water feature is the River Moselle. The river is located approximately 360m to the west of the site before it enters a culvert and runs below ground along the western edge of Tottenham High Road, adjacent to the western boundary of the site. At Scotland Green the river bends eastwards towards Tottenham Marshes. The western boundary of the site lies within a Zone 2 fluvial floodplain.

Ground Investigations

- 11.3.8 Table 11.5 provides a summary of all of the ground investigations that have been carried out at the Project Site. The reports from historical investigations (Soil Mechanics and Soiltechnics) have been reviewed in detail and the results presented in Section 6 of the Buro Happold Desk Study Report (Appendix 11.1). The main findings of these investigations have been summarised in the following sections. The Soiltechnics investigation was limited to the central portion of the site and assessed potential contamination of soil, groundwater and ground gas. The Geotechnics/Buro Happold investigation assessed potential contamination within the northern and central portion of the site.

Table 11.5: Summary of ground investigations on/or adjacent to the Project Site

Company/Date		Report	Investigation Detail
Jan-93	Soil Mechanics	Site Investigation for North Stand Roof Towers, Tottenham	Two Boreholes (up to 30m bgl) Two trial pits (up to 2.6 bgl) Standpipe piezometers installed in both boreholes
Dec-93	Soil Mechanics	Site Investigation for Tottenham Hotspur Football Club South Stand	Three boreholes (up to 30m bgl) Three trial pits (up to 3.4m bgl) Standpipe and pneumatic piezometers installed in two boreholes
Oct-05	Soiltechnics	Proposed Residential Redevelopment on land off Pacton Road, Tottenham - Ground Investigation Report and Report on the Classification of waste soils for off site disposal	Eight boreholes (up to 25 bgl) Three window samples (up to 4m bgl) Three trial pits (up to 3.6 bgl) Gas monitoring standpipes installed in 8 window samples Groundwater monitoring standpipes

			installed in 5 window samples and 5 boreholes
Nov-09	Geotechnics	Northumberland Development Project - Volume 1 Factual Report and Volume 2 Photographs	Nineteen boreholes (up to 43.8m bgl) Nine window sample holes (up to 5.0m bgl) Three trial pits (up to 3.6m bgl) Gas monitoring standpipes installed in 8 window samples Groundwater monitoring standpipes installed in 5 window samples and 5 boreholes
Nov-09	Buro Happold	023971 Northumberland Development Project - Phase 1 Geoenvironmental Interpretative Report	Interpretative report (including GQRA) for northern development area based on investigation carried out by Geotechnics Nov 2009
Jan-10	Buro Happold	Northumberland Development Project - Geoenvironmental Phase 2 Letter	Letter report detailing contamination results for stadium development area based on investigation carried out by Geotechnics Nov 2009

Ground Conditions

- 11.3.9 The ground investigations detailed in Table 11.5 have shown that the geological sequence beneath the Project Site is generally as predicted from published geological data and previous ground investigations. This sequence comprises Made Ground overlying Kempton Park Gravel, London Clay, Lambeth Group and Thanet Sands. Chalk was not encountered; however gravels of flint were recorded at the base of BH09-09A (43.8m bgl) which may indicate the top of the Chalk. Table 11.6 provides a summary of the geology beneath the site.

Table 11.6: Summary of Geology and Hydrology

Name	Description	Thickness	Aquifer Type
Made Ground	Brown/grey sand and gravel with brick and cobble overlying soft brown grey slightly sandy gravelly clay containing brick, cobbles, porcelain, ceramics, plastic, clinker, concrete, coal, ash pockets and flint	0.7-2.8m (ave 2.3m)	Unclassified
Gravelly Clay*	Stiff reddish brown slightly sandy slightly gravelly clay. Laterally discontinuous	0.35-1.7m (ave 0.8m)	
Kempton Park Gravels	Dense brown sandy gravel of quartz and flint	2.1 - 3.5m (ave 2.6m)	Minor Aquifer
London Clay	Stiff fissured grey slightly gravelly clay containing lenses of slightly sandy gravel. Rare shell remains at depth	14.2-16.1m (ave)	Non Aquifer

		15.9m)	
Lambeth Group	Very stiff fissured bluish grey mottled red and brown sandy clay becoming a soft gravelly sandy clay with depth. Sandy clayey gravel overlying purple ironstone (1.1m thick) present at base	7.3-10.4 (ave 9.0m)	Minor Aquifer
Thanet Sands	Very dense light brown mottled grey fine to medium sand	15m??	Minor Aquifer
Chalk		unproven	Major Aquifer

11.3.10 Firm to stiff silty clay (Enfield Silt) was recorded beneath the Made Ground, and interbedded with Kempton Park Gravels in the south-eastern portion of the site by Soil Mechanics. From observations made in the field and monitoring data, it appears that in some locations groundwater is perched within the Made Ground with the main groundwater body located within the Kempton Park Gravel. Monitoring data suggests that groundwater with the Kempton Park Gravel is flowing in a southerly direction. As part of the Phase 1 Ground Investigation for the site long-term groundwater monitoring has been carried out within the area of the new pitch for the proposed stadium development. This monitoring is intended to determine how quickly the water levels change in response to weather conditions, and to determine maximum water levels for consideration in setting the final pitch level and design of the pitch build-up. Water level data loggers were installed in October 2009 within three boreholes (BH09-07, BH09-11 and BH09-12) within the proposed pitch area. Groundwater levels appear to fluctuate consistently over time within each borehole, ranging between approximately 8.8m AOD and 9.8m AOD within the Kempton Park Gravel.

11.3.11 Underground petroleum storage tanks were noted beneath the former petrol station (central portion of site along Tottenham High Road), however their location and size was unknown. It was reported that these tanks and their fuel lines had been foam filled during the station decommissioning. The petroleum section of the London Fire and Emergency Planning Authority does not hold records on whether these tanks were foam filled. However the Authority does hold plans from September 2006 showing the location of five proposed 35,000L tanks, with indication that previous tanks were to be excavated and removed.

Soil Contamination

11.3.12 A moderate hydrocarbon odour and oil sheen was observed on the surface of groundwater purged from BH09-12 during sampling. No distinguishable odour, visible sheen or evidence of LNAPL/DNAPL was observed on water purged from any of the other boreholes. Leachate results show metals in Made Ground are reasonably leachable. Some exceedances of screening criteria were recorded in groundwater samples. Of note were elevated concentrations of TPH which were recorded in groundwater from BH09-12. The source of this contamination is likely to be a tank recorded on historical maps and requires further investigation. Groundwater within the former petrol station has not been analysed.

Ground Gas

11.3.13 Ground gas monitoring was carried out in three boreholes on one occasion. Carbon dioxide was recorded at concentrations of up to 12%v/v and methane up to 24.5%. The high methane concentration is likely to be associated with hydrocarbon contamination within the Terrace Gravels. Although no visual or olfactory evidence of hydrocarbon contamination was recorded on the borehole log by Soiltechnics, this borehole is located in close proximity to BH09-12 which recorded elevated concentrations of TPH in groundwater. Low flow rates (0 l/hr) were recorded. Boreholes were screened within the Made Ground and Kempton

Park Gravels.

Potential Sources of Contamination

- 11.3.14 The potential sources of contamination identified from both the desk study information and ground investigations are summarised in Table 11.7.

Table 11.7: Potential Sources of Contamination

Potential Source	Location	Potential Contaminants of concern
Made Ground (demolition debris, in filled cellars, former and current industrial land uses inc. steelworks, car workshops & engineering works etc)	Site Wid	Heavy metals, other inorganic contaminants, asbestos, total petroleum hydrocarbons (TPH), polycyclic aromatic hydrocarbons (PAHs), semi-volatile and volatile organic compounds (SVOC & VOC), PCB oils), carbon dioxide, methane gases
	Northern Development Area	Described as sand and gravel with brick and cobble overlying soft slightly sandy gravelly clay containing brick, cobbles, porcelain, ceramics, plastic, clinker, concrete, coal, ash pockets and flint. Occasional concentrations of heavy metals (Cu, Pb, Zn) and B(a)P elevated above screening criteria. No asbestos recorded. Maximum concentrations not highly elevated. Soil leachability low Elevated CO ₂ (max 10.8%). Very slightly elevated methane (max 0.1%) Consistently low flow rates (<0.1 l/h). Characteristic Situation 2.
	Stadium Development Area	Described as sand and gravel with brick and cobble overlying soft slightly sandy gravelly clay containing brick, cobbles, porcelain, ceramics, plastic, clinker, concrete, coal, ash pockets and flint. Occasional concentrations of heavy metals (Cu, Pb) and B(a)P elevated above screening criteria. No asbestos recorded. Maximum concentrations not highly elevated. Soil leachability moderate Elevated CO ₂ (max 12%) and methane (max 24.5%). Consistently low flow rates (<0.1 l/h).
Former Fuel Station	Stadium Development Area	Hydrocarbons (TPH, BTEX), PAHs, MTBE, heavy metals, VOCs, SVOC, methane and carbon dioxide gases A slight hydrocarbon odour from the Kempton Park Gravels was noted at 2.6, bgl.

Tanks, oil drums (including Diesel, unknown storage)	Site Wide	Numerous fuel storage areas (potential tanks as identified by historical maps, observed above ground storage tanks & oil drums) located across the site. Not all locations have been investigated due to ownership issues or site constraints. Heavy metals, other inorganic contaminants, total petroleum hydrocarbons (TPH), polycyclic aromatic hydrocarbons (PAHs), carbon dioxide, methane, semi-volatile and volatile organic compounds (SVOC & voc), PCB oils and solvents.
	Northern Development Area	Moderate hydrocarbon odour and staining observed at water table in soil within TP09-02. Slight oil odour (similar to tarmac) noted in Made Ground within WS10. All TPH & BTEX concentrations recorded < residential and commercial industrial screening criteria. Occasional B(a)P concentrations > residential screening criteria but not within hotspot locations. Slight oil sheen observed on purged ground water from BH09-01 location in close vicinity to oil drums and above ground storage tank. Elevated TPH concentrations recorded in groundwater sampled from BH09-04. B(a)P and PAH (DW4) concentrations > UK DWS in WS10.
	Stadium Development Area	Elevated concentration of TPH were recorded in groundwater from BH09-12
Electrical Substations	Site wide	PCBs and Mineral Oils Not all substation locations have been investigated due to access constraints.
	Northern Development Area	No visual/olfactory evidence of PCB contamination observed in soil or groundwater. PCB concentrations recorded below laboratory detection limit in soil samples analysed.
	Stadium Development Area	No visual/olfactory evidence of PCB contamination observed in soil or groundwater. PCB concentrations recorded below laboratory detection limit in soil samples analysed.

11.4 Inherent Design Mitigation

- 11.4.1 The design calls for excavation of a basement and lowering of current site levels as part of the construction works. Complete removal of the near surface Made Ground in the area of the basement and partial removal in other areas will likely remove significant areas of Made Ground with the potential to be impacted by the sources identified in Table 11.7.

11.5 Potential Environmental Impacts and Effects

- 11.5.1 The potential impacts of the potential presence of contaminants within and around the site are considered for both construction and operational phases. The potential impacts in both of these phases are assessed against the pre development situation.

Construction

- 11.5.2 Conditions during the construction phase differ from the current situation and operation phases in that materials could be exposed to agents such as water and air that could lead to dispersion of contaminants in the environment and to direct contact with construction personnel. Site specific source pathway receptor linkages for the construction stage of the Project have been considered with respect to the identified contamination sources, the future uses of the Project Site and the potential linking pathways. Site specific receptors and pathways for the construction are described in Table 11.8.

Table 11.8: Potential contamination receptor pathways - construction

Receptor type	Receptor	Pathway
Human Health	Construction Workers	Direct contact and dermal uptake, soil and dust ingestion, dust and vapour inhalation (outdoor air), gas migration/accumulation.
	Site users (commercial and industrial)	Vapour/gas/dust inhalation (indoor and outdoor air) and gas migration/accumulation.
	Adjacent site users (residential, schools, commercial/industrial) and members of the public	Vapour/gas/dust inhalation (indoor and outdoor air) and gas migration and accumulation.
Natural Environmental	Kempton Park Gravels (Minor Aquifer)	Vertical migration via permeable strata.
	River Mousell	Vertical and lateral migration via permeable strata.
	Flora (offsite)	Plant uptake due to dust generation.

Note: The Chalk Major Aquifer has not been included as a potential receptor within the impact assessment given its depth (40m bgl) and the significant thickness of impermeable London Clay (20-25m) separating it from the Minor Aquifer. There is therefore no plausible pollutant linkage between any near surface contamination and the Chalk Major Aquifer.

- 11.5.3 During the development of the Project Site, construction workers could come into contact with potentially contaminated Made Ground and natural soils/ strata. Fire and explosion hazards are also present due to the potential presence of ground gas (methane, carbon dioxide).
- 11.5.4 Site users, adjacent residents and members of the public could be affected by contaminated dust generated by the Project development works on site unless appropriate mitigation measures are employed. Fire and explosion hazards are present due to the potential migration and accumulation of ground gas (methane, carbon dioxide) both on and offsite. Similarly there is a potential that offsite flora could also be affected by deposition of dust generated on site.
- 11.5.5 The Kempton Park Gravels Minor Aquifer could be affected by the increased leaching of contaminants

from the Made Ground and contaminated natural soil material if it is disturbed, or the cover thickness is reduced as part of the construction process. It may also be impacted during piling via the creation of preferential pathways, or the driving of contaminants down into the aquifer. Where excavated, contaminated soil is stockpiled on site, rainwater could percolate through the stockpile and leach contaminants increasing the contaminant loading within the underlying groundwater.

11.5.6 The use of fuel for machinery and vehicles, paints and other chemicals/solvents during construction poses a risk to groundwater from potential spills.

11.5.7 The significance of these identified potential impacts is outlined below Table 11.9.

Table 11.9: Potential construction impacts before mitigation

Receptor	Receptor sensitivity	Impact	Magnitude of change	Significance of impact
Construction workers	Medium	Health impacts from direct contact, dermal uptake, soil & dust ingestion, gas vapour inhalation, migration & accumulation.	Small	Minor (adverse)
Adjacent site users and members of the public	High	Health impacts from inhalation and ingestion of contaminated dust particles.	Small	Moderate (adverse)
Site users (commercial)	Medium	Health impacts from inhalation and ingestion of contaminated dust particles.	Small	Minor (adverse)
Minor Aquifer	Medium	Degradation of groundwater via increased leaching and mobilisation of contaminants.	Small	Minor (adverse)
Minor Aquifer	Medium	Degradation of groundwater via the creation of temporary preferential pathways, or the driving of contaminants down into the aquifer.	Small	Minor (adverse)
Minor Aquifer	Medium	Degradation of Minor Aquifer and River Mousell via fuel spills & other chemicals (eg paints & solvents)	Small	Minor (adverse)
River Mousell	Low	Degradation of water quality via increased leaching and mobilisation of contaminants within shallow groundwater.	Small	Minor (adverse)
Adjacent Flora	Low	Exposure to phytotoxic contaminated materials (deposited as dust) that could inhibit / prevent plant growth.	Small	Minor (adverse)

Occupation

11.5.8 The Project will comprise a stadium at the centre, with residential elements (hotel and apartments), car parking and retail within the southern part of the site. Various other retail and commercial buildings are proposed across the site. The Project will also include infrastructure, including roads and pavements, car

parking areas/buildings, service/ utility installations and drainage systems. There is minimal soft landscaping proposed with a few trees across the site. A two storey basement car park is proposed beneath the apartments at the south of the site and beneath the north, east and west stands of the stadium. Site specific receptors and pathways are described in Table 11.9.

Table 11.9 Potential contamination receptor pathways – operational phases

Receptor Type	Receptor	Pathway
Human Health	Site end users – Residential (without plant uptake), Stadium users, maintenance workers and commercial/industrial.	Vapour/gas inhalation, migration & accumulation (indoor and outdoor air), direct contact, dermal ingestion.
	Adjacent site users – Residential (with plant uptake), school users, and Commercial/industrial.	Vapour/gas inhalation, migration & accumulation (indoor and outdoor air)
Natural Environment	Kempton Park Gravel Minor Aquifer	Vertical migration via permeable strata
	River Mousell	Vertical and lateral migration via permeable strata
Built Environment	Underground services, structures	Direct contact

- 11.5.9 The Project introduces a new receptor (residential users) to the southern portion of the site. Future site users (including maintenance workers) could be adversely impacted due to gas migration/accumulation into new buildings onsite. Maintenance workers could also be adversely impacted by ingestion of contaminated dust/soil or dermal contact. As the majority of Project will be hard standing (soft landscaping comprises of a few trees only) the source receptor pathway is broken, and hence there is limited potential for uncontrolled exposure with contaminated soil for future site users.
- 11.5.10 Built structures and infrastructure of the project could be affected by the presence of contaminants in the underlying soils, particularly aggressive determinands (e.g. sulphates, chlorides, acids) certain organic contaminants, soil gases and volatile organic compounds. Typically, where these contaminants are encountered at elevated concentrations, significant erosion of concrete and steel foundations can occur along with the deterioration of plastic services such as water supply pipework etc.
- 11.5.11 Similarly future activities of the Project during the operation could impact on soil and groundwater conditions beneath the site. Examples of this include the potential for spillage and/or loss from heating and cooling units, fuel storage, electricity substations, and the subsequent contamination of underlying soils and groundwater.
- 11.5.12 As part of the Project, any below ground storage tanks encountered (including those associated with the former fuel station) will be removed. By removing these potential sources of contamination, this will provide a minor beneficial impact to the Minor Aquifer.
- 11.5.13 The significance of the potential impacts associated with the operational stage of the Project is presented in Table 11.10.

Table 11.10 Potential operational impacts (before mitigation)

Receptor	Receptor Sensitivity	Impact	Magnitude of change	Significance of impact
Site users (residential)	High	Health impacts from gas/vapour inhalation. Fire and explosion from gas migration/ accumulation.	Medium	Major (adverse)
Site users (stadium users)	Medium	Health impacts from gas/vapour inhalation. Fire and explosion from gas migration/ accumulation.	Medium	Moderate (adverse)
Site users (commercial)	Medium	Health impacts from gas/vapour inhalation. Fire and explosion from gas migration/ accumulation.	Medium	Moderate (adverse)
Adjacent site users (residential/school users)	High	Health impacts from gas/vapour inhalation. Fire and explosion from gas migration/ accumulation.	No Change	Negligible
Adjacent site users (commercial)	Medium	Health impacts from gas/vapour inhalation. Fire and explosion from gas migration/ accumulation.	No Change	Negligible
Site users (residential)	High	Health impacts from direct contact, dermal uptake, soil ingestion and dust.	No Change	Negligible
Site users (commercial)	Low	Health impacts from direct contact, dermal uptake, soil ingestion and dust.	No Change	Negligible
Maintenance workers	Medium	Exposure to contaminated materials beneath hardstanding and within service trenches during future services construction . Health impacts from direct contact, dermal uptake, soil ingestion and dust. Fire and explosion from gas migration/ accumulation.	Small	Minor (adverse)
Minor Aquifer	Medium	Ongoing degradation of groundwater quality from existing contamination.	Small (beneficial)	Minor (beneficial)
Minor Aquifer	Medium	Degradation of groundwater quality via creation of permanent preferential pathway during piling.	Small	Minor (adverse)
Minor Aquifer	Medium	Leaching of stored chemicals, fuels, oils in commercial eg substations)	Small	Minor (adverse)
Minor Aquifer	Medium	Degradation of groundwater via fuel spills in carparking areas.	Small	Minor (adverse)
River Mousell	Low	Degradation of water quality via	Small	Minor

		leaching of contamination in groundwater from fuel spills in car parking areas, chemical storage areas etc.		(adverse)
River Mousell	Low	On-going degradation of water quality via leaching of existing contamination in groundwater.	No change	Negligible
Proposed Buildings	Low	Potential corrosion / damage of building materials and services. Fire and explosion from gas migration/ accumulation.	Small	Minor (adverse)

11.6 Additional Mitigation, Compensation and Enhancement Measures

11.6.1 Mitigation measures have been derived by assessing the risks to human health and the environment identified in previous ground investigations in accordance with CLR11.

11.6.2 It is recognised that there will always be an element of uncertainty about the ground conditions including contamination. This potential for currently undetected contamination to be present must therefore be taken into account in the impact assessment presented here.

Construction

11.6.3 The following mitigation measures (Table 11.11) will be managed through the site specific Construction Environment Management Plan (CEMP) which will need to be completed by the contractor prior to construction.

11.6.4 The mitigation strategies implemented should be reviewed regularly to best suit the practices currently being undertaken on site.

Table 11.11 Construction impact mitigation measures

Risk	Mitigation measures
Direct contact with contaminants in the Made Ground and potential contaminated soil during site development	Appropriate use of personal protective equipment (PPE) and safe working procedures. Construction workers should remain vigilant of ground conditions at all times and should report any suspect areas of potential contamination.
Health impacts from inhalation and ingestion of contaminated dust particles Impacts to adjacent flora from exposure to phytotoxic contaminated dust particles	During both demolition and construction phases of work, dust suppression measures will be employed by the contractor when necessary to prevent the potential generation of contaminated dust particles and migration off site.
Gas migration/ accumulation	Site investigation data suggests there is potential for exposure to low levels of CO2 in any confined spaces in the northern Project area, There is limited potential for accumulation to hazardous concentrations due to consistently low flow rates and the nature/extent of Made Ground.

	Historical site investigation data (Soiltechnics) suggests there is potential for exposure to moderate levels of CO₂ and CH₄ in the stadium Project area. Further investigation in this area will be carried out prior to Project development. Appropriate use of PPE and safe working procedures in any below ground/confined space work.
Degradation of Minor Aquifer and River Mousell via increased leaching and mobilisation of contaminants	Excavation associated with basement carpark, infrastructure and pile caps so stockpiling of soil is likely. Where excavation of grossly contaminated soils (if encountered) is required (as part of remedial measures) stockpiling of this material will be avoided if possible. Stockpiles will be covered when not in use and placed on impermeable sheeting/hardstanding. Pollution control measures will be implemented by the contractor where required and spillage containment will be present on site at all times.
Degradation of Minor Aquifer via creation of temporary preferential pathway or driving of solid contaminants into the underlying aquifer during piling.	Development of a foundation works risk assessment and the adoption of appropriate piling methods/design to mitigate risk. The impact to the Chalk Major Aquifer from piling has not been assessed. This is because piles will not breach the Lambeth Group, the nature and extent of expected contamination, and the depth of the Major Aquifer. There is therefore no requirement for a Foundations Work Risk Assessment as outlined in NGWCLC Report NC/99/73.
Degradation of Minor Aquifer and River Mousell via fuel and chemical spills.	Control measures will be implemented by the contractor on re-fuelling activities, storage of fuels and chemicals and vehicle movements and parking. Spill response measures will be implemented by the contractor and spillage containment will be present onsite at all times.

Operation

- 11.6.5 In order to avoid, reduce and minimise any significant adverse effects related to the ground conditions across the site, mitigation controls must be considered from the beginning of the detailed design phase. This will enable mitigation to be embedded in the design and therefore minimise the need for active controls during occupation. Based on the current information, the following measures (Table 11.12) to mitigate operational impacts have been proposed.

Table 11.12 Operational mitigation measures

Risk	Mitigation measures
Health impacts, explosion & fire from gas/vapour inhalation, migration & accumulation.	Adoption of appropriate remedial action/ design required prior to development. Incorporation of gas protection measures where building design does not provide sufficient mitigation i.e. basement car park areas Site investigation data suggests there is potential for exposure to moderate levels of CO ₂ and CH ₄ in the stadium Project area.
Health impacts from direct contact, dermal uptake, soil ingestion.	Adoption of appropriate remedial measures required prior to development. Construction of clean backfill service trenches, and provision of PPE where required.
On-going degradation of Minor Aquifer and River Mousell via leaching existing contamination	Adoption of appropriate remedial measures required prior to development.
Degradation of Minor Aquifer via creation of permanent preferential pathway during piling.	Foundation works risk assessment and the adoption of appropriate piling methods/design to mitigate risk. The impact to the Chalk Major Aquifer from piling has not been assessed. This is because piles will not breach the Lambeth Group the nature and extent of expected contamination, and the depth of the Principal Aquifer. There is therefore no requirement for a Foundations Work Risk Assessment as outlined in NGWCLC Report NC/99/73.
Potential corrosion/damage of building materials and services	Adoption of appropriate remedial measures required prior to development. Specific mixes of concrete could be required for building foundations where the underlying ground conditions are identified as being potentially corrosive to concrete. Specific pipe materials may be required where the underlying ground conditions are identified as being potentially toxic, corrosive or high in organic contaminants. Consultation with Thames Water will be carried out in order to determine suitable pipe materials for water supply.
Degradation of Minor Aquifer and River Mousell via leaching of stored chemicals and fuels in commercial areas.	All fuels and chemicals used within the proposed development will be stored and used in accordance with current regulatory and industry guidance. For example, all fuels will be stored within 110% bunded areas, all chemicals will be stored on appropriately sized drip trays located on hardstanding within dedicated chemical storage areas as a minimum and safe working procedures will be adopted to minimise spillage through accidents etc. Adoption of safe working procedures. All electricity

	substations etc to be installed and maintained appropriately.
Degradation of Minor Aquifer and River Mousell via fuel spills in car parking areas	An oil/water interceptor and surface water drainage system in accordance with current regulatory and industry guidance to be installed within all new car parking areas.

11.7 Assessment Summary and Residual Environmental Impacts and Effects

- 11.7.1 Potential adverse impacts identified have been addressed and mitigation measures proposed to minimise the scale of any impact on the receptors. For all of the adverse impacts identified, the residual impact after mitigation has been incorporated will be negligible.
- 11.7.2 Steps will be taken to ensure that good practice procedures both in construction and health and safety during the Project site development and any required remediation will be adhered to. Environmental management procedures should be outlined in a site specific Environmental Management Plan (EMP) to be agreed with the Environment Agency and Haringey Council prior to commencing the works.
- 11.7.3 No cumulative impacts have been identified that require mitigation.
- 11.7.4 A summary of residual impacts is set out in Table 11.13.

Table 11.13: Ground Conditions and Hydrogeology Residual Effects

Environmental Effect	Sensitivity of Receptor	Nature of Impact	Impact Magnitude	Significance	Additional Mitigation	Residual impact Magnitude	Residual Significance of Effect
Construction Effects							
Direct contact with contaminants in the Made Ground and potential contaminated soil during site development	High	Negative	Medium	Moderate	Appropriate use of personal protective equipment (PPE) and safe working procedures. Construction workers should remain vigilant of ground conditions at all times and should report any suspect areas of potential contamination.	Very Low	Minor
Health impacts from inhalation and ingestion of contaminated dust particles. Impacts to adjacent flora from exposure to phytotoxic contaminated dust particles	High	Negative	Medium	Moderate	During both demolition and construction phases of work, dust suppression measures will be employed by the contractor when necessary to prevent the potential generation of contaminated dust particles and migration off site.	Very Low	Minor
Gas migration/accumulation	High	Negative	Medium	Moderate	Site investigation data suggests there is potential for exposure to low levels of CO ₂ in any confined spaces in the northern Project area. There is limited potential for accumulation to hazardous concentrations due to consistently low flow rates and the nature/extent of Made Ground. Historical site investigation data (Soiltechnics) suggests there is	Very Low	Minor

					potential for exposure to moderate levels of CO₂ and CH₄ in the stadium Project area. Further investigation in this area will be carried out prior to development. Appropriate use of PPE and safe working procedures in any below ground/confined space work.		
Degradation of Minor Aquifer and River Mousell via increased leaching and mobilisation of contaminants	Medium	Negative	Medium	Moderate	Excavation associated with basement carpark, infrastructure and pile caps so stockpiling of soil is likely. Where excavation of grossly contaminated soils (if encountered) is required (as part of remedial measures) stockpiling of this material will be avoided if possible. Stockpiles will be covered when not in use and placed on impermeable sheeting/hardstanding. Pollution control measures will be implemented by the contractor where required and spillage containment will be present on site at all times.	Low	Minor
Degradation of Minor Aquifer via creation of temporary preferential pathway or driving of solid	Medium	Negative	Medium	Moderate	Development of a foundation works risk assessment and the adoption of appropriate piling methods/design to mitigate risk. The	Low	Minor

contaminants into the underlying aquifer during piling.					impact to the Chalk Major Aquifer from piling has not been assessed. This is because piles will not breach the Lambeth Group, the nature and extent of expected contamination, and the depth of the Major Aquifer. There is therefore no requirement for a Foundations Work Risk Assessment as outlined in NGWCLC Report NC/99/73.		
Degradation of Minor Aquifer and River Mousell via fuel and chemical spills.	Medium	Negative	Medium	Moderate	Control measures will be implemented by the contractor on re-fuelling activities, storage of fuels and chemicals and vehicle movements and parking. Spill response measures will be implemented by the contractor and spillage containment will be present onsite at all times.	Very Low	Minor

12. Townscape and Visual Amenity

12.1 Introduction

12.1.1 This chapter of the ES has been produced by The Landscape Partnership to assess the suitability of the Project in relation to the effects it would have on the landscape character and features of the Project Site, the local and wider landscape character and changes to views.

12.1.2 In defining 'landscape' reference is made to the adopted definition agreed by the European Landscape Convention (Florence: Council of Europe 2000), which states that the landscape is 'an area, as perceived by people whose character is the result of the action and interaction of natural and/or human factors'. Given the predominance of human factors over natural factors within the Project Site, and that the term 'landscape' is most commonly used to relate to areas of land beyond built up areas, the term 'townscape' is used instead. The Chapter provides a description of: the existing townscape and built features within the Project Site and immediate vicinity; the key characteristics of the local townscape character and how these relate to the Site; the contribution that these features have within views; and the presence of statutory or local townscape and visually related designations.

12.1.3 The assessment will also set out the following:

- the loss or damage to natural and built features and the perceived change to the character of the townscape resulting from the Project;
- the capacity of the townscape to accommodate the type of Project;
- the extent to which the Project would be visible; and
- where visible, assessing how the view would change in relation to a range of visual receptors.

12.2 Assessment Criteria and Methodology

Previous Assessment

12.2.1 As part of the Environmental Statement (ES) prepared for the planning application (HGY/2010/1000) submitted in May 2010, and consented in September 2011, a townscape and visual assessment was undertaken. This incorporated the assessment of 30 viewpoints and 10 townscape character areas to ascertain the effects of construction of the proposed stadium, Northern Development (existing Sainsbury's Store), and Southern Development (enabling residential development). The assessment concluded that the existing townscape was of variable quality and sensitivity, with the only location of high sensitivity being Tottenham High Road, which itself was of relatively poor condition. In the main the proposals were considered a beneficial change to the townscape, improving the public realm, increasing permeability, enhancing townscape character, and introducing a distinctive landmark buildings. The nature and extent of view afforded varied noticeably depending on the street scene and the presence of public open space. The presence of detractive built features and overall visual cohesiveness of the features within the view, influenced whether proposals would be experienced as a beneficial or neutral (i.e. an equal balance of beneficial and adverse changes to the view). The only adverse changes to views recorded would be during the construction phase in Year 1 from Viewpoint 10. The significant changes to

views would occur along Tottenham High Road or adjoining streets (Whitehall Street, Brereton Road, Bromley Road, Vicarage Road/Park Lane, Trulock Road, Worcester Avenue), and from limited locations with Bruce Castle Park, Tottenham Marshes, and open space adjacent to Lea Valley School. A number of other viewpoints were assessed as either not being affected or negligibly effected (2, 3, 4, 5, 6, 10, 12, and 30).

- 12.2.2 An Addendum to the ES was submitted in December 2011 to cover the proposed changes to the Northern Development, which included the extension of the existing floorspace above the foodstore and the addition of a further floor. A further Addendum to the ES was submitted in December 2011 for the proposed changes to the Southern Development. The proposed redesign and reconfiguration of the proposed building made a number of changes that would have a localised effect on townscape character and views. The two Addendums included the assessment of the effects on the townscape and views that would result from the proposed changes compared with the 2011 consented development. The Addendums concluded that for the Northern Development the effects were geographically constrained and limited to a medium-low neutral significance, and for the Southern Development the effects would largely be of medium neutral significance, but highly beneficial from certain locations.

Scoping Opinion

- 12.2.3 Although a formal Scoping Opinion was not sought the Scope of the EIA was based on the technical scope for the original 2010 ES and the Southern Addendum. A draft Scoping Report was sent to the Council on the 19th June 2015, for their informal comments and discussion. No informal comments were received. However, a note setting out the proposed approach to the identification of viewpoints and the visual assessment was issued to the Case Officer at LB Haringey on 26/06/15. The case officer responded on 10/07/15 stating that the viewpoints were acceptable.

Legislative Context

- 12.2.4 There is no specific legislation relating to landscape and visual assessments or statutory landscape or visual designations that would be affected by the Project. Listed buildings and conservation areas are assessed within Chapter 8.
- 12.2.5 Trees protected by Tree Preservation Orders (TPOs) are covered by Part VIII of the Town and Country Planning Act 1990 and as amended by the Town and Country Planning (Tree Preservation) (England) Regulations 2012. Further minor amendments have been included within the Planning Act 2008 and Localism Act 2011. TPOs provide a mechanism for trees of public amenity value to be protected by a Local Planning Authority (LPA), and can cover individual trees, groups of trees or woodlands. An Order prohibits: cutting down; topping; lopping; uprooting; wilful damage; and wilful destruction, without the written consent of the LPA or as deemed consent where forming part of approved planning application. Similar status and protection is given for trees within conservation areas that are not protected by a TPO, as covered under the provisions of Section 211 of the Town and Country Planning Act 1990.

Planning Policy and Guidance

National Planning Policy

- 12.2.6 The National Planning Policy Framework (NPPF), March 2012 states a presumption in favour of

sustainable development, defined as a 'golden thread running through both plan-making and decision-taking', with a requirement for Local Planning Authorities (LPAs) to positively meet the development needs within their area. To achieve this, support is given to sustainable developments that make a positive improvements to the quality of the built, natural and historic environment, including replacing poor design with better design and widening the choice of high quality homes. This is also further reinforced within paragraph 49 with regard to housing applications. Reference is also made to the important role that leisure facilities and residential developments play in the vitality of town centres. Provision of shared space and community facilities, including sports venues, are also identified as enhancing the sustainability of communities and residential environments.

- 12.2.7 The guidance puts an emphasis on the importance of up-to-date Local Plan policies in which developments should be determined. Where this is absent, permission should be granted unless there should be a clear indication that adverse impacts would significantly outweigh the benefits or otherwise indicated within the NPPF.
- 12.2.8 There is a need for the planning system to contribute to the protection and enhancement of the natural, built and historic environment and for sustainable development to respond positively to this objective. Developments should protect and enhance valued landscapes and areas of scenic beauty. Developments should also seek to provide a design that takes account of the character of different areas and the intrinsic beauty of the countryside and landscape designations in a manner appropriate to their significance. Encouragement is given to the re-use of previously developed land, provided that this is not of high environmental value.
- 12.2.9 Proposed developments should be based on good design and appropriate landscaping, in particular ensuring the integration of the development into the natural, built and historic environment. Development should be designed to function well and add to the overall quality of the area, optimising the ability to accommodate the development.
- 12.2.10 Planning Practice Guidance (PPG) provides current guidance by the Department for Communities and Local Government, based on the NPPF. The need for good design to form integral part of sustainable developments is reinforced, delivered through Local Planning Authorities (LPAs) giving greater weight to innovative designs that help raise standards in the locality. Good design should be multifunctional, sympathetic blending of uses, and enhance buildings and spaces through form and function. Development design should seek to promote or enhance the character of the townscape, including responding to and reinforcing locally distinctive patterns of development, local heritage and culture, whilst not discouraging appropriate innovation.
- 12.2.11 The PPG on the Natural Environment provides a broad recognition of the role played by the intrinsic character and beauty of the countryside, and not just designated landscapes. Landscape character assessments are identified as providing an important tool in defining what features contribute to the local distinctiveness of the landscape.

Local Planning Policy

Current Planning Policy: London Plan, July 2011

- 12.2.12 The London Plan in conjunction with Haringey Council's Development Plan Documents (DPDs) forms part of Haringey's development plan for the borough. The relevant London Plan policies include:

- **Policy 2.18 Green Infrastructure:** The Network of Open and Green Spaces: promotes the expansion, quality and management of a network of multifunctional green infrastructure;
- **Policy 3.5 Quality and Design of Housing Developments:** defines for the need for developments to the highest quality and relate to their context and wider environment. Proposals should enhance the residential environment and provide attractive places to live. This should be achieved through design that relates to and enhances: quality of local places; physical context; local character; density; tenure and land use mix; and provision of public open space;
- **Policy 7.1 Building London's Neighbourhoods and Communities:** sets out objective of creating good quality environments, where neighbourhoods are formed that local communities can relate to and understand. Developments should be designed to provide a mix of uses with layouts that interface with local surroundings to improve access to local infrastructure, including green spaces and the Blue Ribbon Network. It should be noted that part of the Blue Ribbon Network follows the High Street near to the western boundary of the Site, due to the presence of the Moselle Brook. However, the Brook is underground within a culvert that extends the length of the High Street affected, including adjoining streets and would not form a relevant part of this assessment. A clear sense of space should be provided that is safe and secure and meet the principles of lifetime neighbourhoods. New buildings and their interspace, should be designed to 'reinforce or enhance the character, legibility, permeability and accessibility of the neighbourhood';
- **Policy 7.4 Local Character:** defines the need for development to have regard to the character of the locality in which it is set i.e. through form, function, pattern, scale, mass and orientation of buildings. Developments should provide a high quality design that responds to these aspects and creates a positive relationship between the urban structure and natural landscape features. In areas of poor or ill-defined character, development should 'build on the positive elements that can contribute to establishing an enhanced character for the future function of the area'. Developments should relate at a human scale establishing a positive relationship with street level activity and comfortable surroundings. To help define a sense of space and positive future character, proposed buildings should relate to buildings and structures that provide a positive contribution and be informed by the surrounding historic environment. It is recognised that in some locations, the character is well preserved and clear, but in others it is undefined or compromised by unsympathetic development. Characterisation studies can be used to identify the existing character, characteristics of value and a strategy for improving the character of a place;
- **Policy 7.5 Public Realm:** seeks to maximise the benefits of the public realm in terms of their quality as spaces, accessibility, contextual relationships, and maintenance. Developments should make the public realm relate to the human scale, providing gateways, focal points/landmarks, and high quality landscape treatment, street furniture and infrastructure;
- **Policy 7.7 Location and Design of Tall and Large Buildings:** provides a careful management of the location and design of tall buildings. Tall buildings will generally be limited to the Central Activity Zone, but can be considered outside this Zone, where the scale and mass of the building would not

adversely affect the character or the area. Particular consideration should be given where Metropolitan Open Land, conservation areas and listed buildings would be affected. The proposed buildings should relate well to the form, proportion, composition, scale and character of the surrounding buildings, urban grain and public realm, particularly at street level. The design should improve legibility, permeability, incorporate the highest standard of architecture and materials, provide a positive street relationship, and emphasise a point of civic and visual significance, enhancing the skyline and image of London. The proposals should make a significant contribution to local regeneration;

- **Policy 7.11 London View Management Framework:** provides a set of strategic views which are to be protected, with developments assessed for its impact on the designated view if falls within the foreground, middle ground or background of the view. Designated View 1 Alexandra Palace to Central London, is designated as a London Panorama. Alexandra Palace is assessed as a view as part of this assessment, with the proposed development occurring in a completely different sector of the wide panoramic view available i.e. due east as opposed to due south;
- **Policy 7.17 Metropolitan Open Land (MOL):** provides protection from development that have an adverse impact on the openness of an MOL; and
- **Policy 7.21 Trees and Woodlands:** covers the protection, management and planting of trees. Existing trees of value should be retained and any removal should be replaced with appropriate trees, and where suitable with large canopy tree species.

Current Planning Policy: Haringey's Local Plan Strategic Policies 2013-2026, March 2013

12.2.13 The adopted Local Plan: Strategic Policies is the renamed version of the submitted Core Strategy to comply with the NPPF. This forms part of the Local Development Framework (LDF) which provide the policy documents for guiding future growth and development in Haringey. Tottenham Hotspur Football Stadium is identified as one of the local landmarks of the Borough. White Hart Lane and Northumberland Park Neighbourhood forms part of the north-west of the Borough, in which the Site and the adjoining urban areas, between the London Overground railway to the west and another section of London Overground railway to the east, are identified as being an 'Area of change'. This includes reference to the benefit that will arise from the major redevelopment and expansion of the Tottenham Hotspur Football Club (THFC), which will form part of the regeneration of the wider Northumberland Park area. The Local Plan: Strategic Policies includes the following relevant policies:

- **SP0 Presumption in Favour of Sustainable Development:** sets out the principles contained within the NPPF in relation to considering sustainable development proposals;
- **SP1 Managing Growth:** development will be promoted within Areas of Change, including Northumberland Park and the redevelopment of THFC stadium;
- **SP11 Design:** emphasis is placed on new development enhancing and enriching the built environment, by creating buildings and places of high quality that are attractive and sustainable. This should be achieved through a combination of factors, including: designs that respect the local context, character and historic significance, and contributing to the creation and enhancement of a sense of

place and identity; public realm that is well connected and of high quality; provision of high quality landscaping, including improvements to existing streets and public spaces;

- **SP12 Conservation:** refer to Cultural Heritage (see Chapter 8 of ES). It should also be noted that the policy makes reference for the need to protect the Strategic View from Alexandra Palace to St Paul's Cathedral as part of the London Mayoral 'London View Management Framework' Revised SPG, July 2010 and other key local views. Viewpoint 1 provides a view from Alexandra Palace towards the Site. The proposed development lies due east in a completely different sector of the broader views from Alexandra Palace and would not affect the Strategic View to St Paul's Cathedral, which lies due south. Consideration will also be given to local views, in particular locally important view that contribute to the interest and character of the borough. This could include: from large parks and open spaces e.g. Alexandra Palace and Finsbury Park; historic parks and gardens; Conservation Areas; and views of listed and landmark buildings and monuments. The Council will consider the effect of a development on local views in terms of the compatibility of its setting, scale and massing in relation to the local townscape, landscape and skyline.

Current Planning Policy: Haringey Unitary Development Plan Saved Policies, Adopted July 2006 (policies saved March 2013)

- 12.2.14 The Unitary Development Plan (UDP) forms part of the adopted Local Plan until the remaining documents of the LDF are completed and adopted. Some policies have been superseded by the Local Plan: Strategic Policies, but other policies have been retained as 'saved policies'. The relevant saved policies are as follows:

- **UD3 General Principles:** requires development proposals to complement the character of the surrounding area and take the opportunity to provide planting and retention of vegetation, in particular trees.
- **OS17 Tree Protection, Tree Masses and Spines:** seeks to improve and protect the contribution that trees make to the local character, including: the use of Tree Protection Orders (TPOs); replacement of non-protected trees were affected by a development; and encouraging tree planting in locations that do not damage underground utilities.

Emerging Planning Policy: Draft Development Management Policies, Consultation Document, March 2013

- 12.2.15 The Development Management Policies (DMP) will form part of the Haringey Local Plan. This is at relatively early stage of preparation, with first part of the consultation process having now been completed, with the next stage of consultation due to take place this autumn.

Emerging Planning Policy: Site Allocations DPD, January 2014

- 12.2.16 Consultation on the Draft Site Allocation DPD was completed in March 2014. The Proposed Submission of the Site Allocation DPD is due to be published this autumn, followed by examination in public and adoption sometime in 2015. The following are relevant to the site:

- **Site Allocation NT2:** Tottenham Hotspur Stadium provides an allocation for the proposed development of the site, based on the consented planning application for the redevelopment of the existing stadium to increase capacity and provision of other ancillary uses, with residential and community/leisure facilities to the south. Beyond the site to the north, inclusion is provided for retail (existing Sainsbury's Store), education and community uses. Reference is made for need to provide high quality and durable materials for the public realm, and that proposals need to integrate and complement with development within the adjacent site allocations, in terms of coordination of design, massing, materials etc.
- **Site Allocation NT3:** High Road West lies to the west of the site and provide an allocation for a residential-led mixed use development incorporating leisure, retail, employment and open space. This is to be based around the identity established by THFC.
- **Site Allocation NT4:** Estate Renewal in North Tottenham recognises the need for regeneration within North Tottenham, to the north and east of the site, to improve the existing poor quality housing stock and enhance housing choice and overall housing supply. This would include providing improved east-west connections between Tottenham and the Lea Valley Regional Park and review of the existing employment land.

12.2.17 A broader area defined as the Tottenham High Road Area of Change, identifies various improvement areas, including the Bruce Grove/Tottenham High Road District Centre and Tottenham High Road Historic Corridor.

Guidance: Supplementary Planning Guidance (SPG) 1c Strategic Views

12.2.18 Published by the London Borough of Haringey to provide detail on the protection required for the strategic views between St Paul's Cathedral and Alexandra Palace. It identifies four zones of the strategic view for protection: the Viewing corridor; the wider setting; the mid-ground; and the foreground. The Site falls outside all four of these zones.

Tottenham High Road Historic Corridor Conservation Area Character Appraisal

12.2.19 The revised appraisal was approved and adopted by the London Borough of Haringey on 9 March 2009. The site falls within the North Tottenham Conservation Area, which forms part of the Tottenham High Road Historic Corridor. The Appraisal document identifies buildings and groups of buildings, which have historic interest and contribute to the character of the Conservation Area.

12.2.20 Specifically in relation to the site, the document identifies that within the North Tottenham Conservation Area the existing football stadium is visible from High Road, in the vicinity of Paxton Road and Park Lane. The large numbers of visitors to the site, particularly on match days, are also seen as significantly influencing the character of the area.

Conservation Area Appraisal: North Tottenham THI Sub Area, October 2014

12.2.21 The Appraisal provides an assessment of the architectural and historical interest of the northern part of the Tottenham High Road Historic Corridor, to identify the defining features and elements that make the

THI (Townscape Heritage Initiative) Sub Area distinctive, the value of the historic assets, and to provide guidelines for Local Planning Authorities in terms of planning future change and management. The Appraisal also provides a detailed photographic record and information regarding building condition. The THI Sub Area is composed of Grade II and II* Georgian buildings, interspersed with Victorian locally listed buildings and a mixture of other non-listed buildings, including infill 20th century buildings. Most of the buildings are of architectural interest, but many have been unsympathetically altered, including poorly integrated frontages. However, it is recognised that these mixed commercial premises create a diversity and sense of vibrancy that provides a positive contribution to the character of the area. The Sub Area is generally in poor condition, due to neglect, and is considered fragile and will continue to deteriorate without appropriate management. The new Tottenham Hotspur Football Stadium and the proposed regeneration to the west of the stadium, known as the High Road West Plan, are identified as challenges and opportunities for the historic fabric. There is a recognition that conservation should be a balance of preserving local distinctiveness and character, whilst responding to local communities needs and providing active living spaces. The historic fabric should form the inspiration and cultural capital to provide locally distinctive regeneration.

- 12.2.22 One of the distinctive aspects is that the Conservation Area forms part of a long established and well-defined corridor. The linear form allows for a sequence of vistas travelling both the north and the south. The busy and sometimes hectic road corridor High Road is experienced together with the varied architectural composition of buildings framing the route.

Baseline Data Collection

- 12.2.23 Baseline data was collected using a mixture of desk-top collation of available data and field survey work. Data was obtained from available online sources. This included: the MAGIC website (www.magic.gov.uk), a geographical based information service for the natural environment, managed by Natural England; planning data from Haringey Council (www.haringey.gov.uk). Field surveys involved walking and visiting the areas and viewpoints assessed.

Assessment Methodology

- 12.2.24 In order to understand how townscape features, townscape character and views would be affected, the assessment uses an objective approach based on the Guidelines for Landscape and Visual Impact Assessment (GLVIA)³⁸. The detailed application of these Guidelines, and the criteria and categories used, are set out in Appendix 12.1: Townscape and Visual Amenity Methodology. The assessment approach determines the significance of the changes to the townscape and views, should the Project proceed. This is achieved by first understanding the relative sensitivity of the site feature, character of the townscape, and the view being experienced, and then combining this with the magnitude or extent of change that would result from the Project. As set out in Chapter 2, changes can be experienced as an adverse or beneficial. In addition, for landscape/townscape and visual assessments, a further category is introduced, that of neutral influence. Neutral effects are regarded as those that would maintain, on balance, the existing levels of the quality, integrity or key characteristics of the landscape and/or visual resource. A neutral effect may therefore arise where beneficial effects offset adverse effects or where the value

³⁸ Guidelines for Landscape and Visual Impact Assessment, The Landscape Institute and Institute of Environmental Management and Assessment, 3rd Edition, April 2013

judgement would consider the change to be different, but neither a deterioration or an enhancement. Chapter 2 refers to the use of 'neutral' in terms of significance of effect. To avoid confusion, the term neutral in Chapter 2 is replaced in this Chapter with either 'negligible' or 'no change'.

- 12.2.25 The GLVIA advises that level of detail provided should be to a reasonable level sufficient to determine the likely significant effects. This should be 'appropriate and proportional to the scale and type of development and the type and significance of the landscape and visual effects likely to occur'.
- 12.2.26 Whilst the process of assessment is often referred to as a Landscape and Visual Impact Assessment, it is important to understand the difference between 'impact' and 'effect'. 'Impact' is defined as the action being taken and 'effect' as the change resulting from the action. The changes resulting from the implementation of the Project, form the main consideration of this assessment and thus the word effect is mainly used. The two main components are:
- landscape/townscape effects - assessing effects on the landscape/townscape as a resource in its own right;
 - visual effects - assessing effects on specific views and the general amenity of the view.

Geographical Scope

- 12.2.27 An approximate 2km study area was defined to assess the effects of the Project, with this being extended where required to cover elevated prominent locations, as is this case for Viewpoint 1, which is over 4kms from the Site. Geographical Scope is often determined through the use of Zones of Theoretical Visibility (ZTVs), using 3D terrain models to determine where a development potentially could be visible or Zone of Visual Influence (ZVI) an approximation of the extent of visibility based on field survey work to define a region or zone in which it would be possible to view the Project. However, within a major urban conurbation, with complex arrangement of built forms and varying heights, a digital terrain model would be of little use without model data of the existing built form. It is considered impractical and of limited value to create a sufficiently large digital model of all the existing built form to provide an accurate ZTV. Similarly, it would be very difficult to define a ZVI that provides a meaningful representation of the ZVI. Consequently, reliance is placed on the field survey work undertaken for the ES submitted as part of the 2010 planning application, to determine an approximate extent of visibility and reliance on a number of representative viewpoints to illustrate the effects from a range of geographical locations and extents.

Temporal Scope

- 12.2.28 Assessment of the effects on the townscape and views is provided for both the Construction Phase and the Operational Phase, based on the periods set out in Chapter 2. During the Operational Phase, temporal effects are considered at Year 1 (fully operational) and Year 15. This is provided to enable the predicted changes arising from the growth of vegetation to be taken into consideration most notably that provided as part of the Project.

Assumptions and Limitations

- 12.2.29 The following assumptions have been made in respect to the assessment of effects:

- the assessment Baseline Year is 2015, Year 1 is 2022 (fully operational) and Year 15 is 2037;
- the Project is regarded as being permanent in landscape and visual terms due to the length of operation. The Project would involve a permanent loss of most existing Site features. Although the urban fabric does not change for long periods of time, buildings are replaced and urban regeneration periodically occurs, as demonstrated by the Project. Consequently, the Project is reversible, but to take account of relatively low likelihood of being reversed, the assessment is based on the Project being partially reversible.
- professional judgement is made on the surveyor's experience of undertaking LVIA's and predicting the extent of change that could be expected. To assist with this process, the buildings within the Site and study area include features of known height, in which the height of the proposals can be assessed against. This provides a reasonable confidence in the predicted effect;
- existing vegetation will continue to grow at rates appropriate to the location, species and maturity of the vegetation. Other future changes, such as loss of vegetation through weather damage or disease, or future proposed development that have not been given consent at the time of assessment, cannot be predicted and thus do form part of the assessment. Consequently, the assessed effects on site features, landscape character and views are considered as having a high probability of occurring;
- the proposed tree planting would grow at a rate of approximately 400mm/year, based on the average expected growth rates for the selected species growing on imported loamy soils of high fertility. Predicted growth is also based on the assumption that no growth will take place in the first year, as the plants adjust to their new growing environments. This provides a reasonable confidence in the predicted effect;
- the receptor for a view from public road, public open space and within a residential property is an adult standing with an eye height of 1.6m;
- visual effects are assessed on the basis of good visibility. Visual effects can be expected to vary e.g. poor visibility at times of low cloud, rainfall and dusk. At these times a reduction in visual clarity, colour and contrast would be experienced. Reduced visibility would limit the extent of view possible particularly from mid to long distance views. Consequently, the assessment of effects is based on the worst case scenario, where the Project would be most visible; and
- extent of use of public rights of way is based on: known information e.g. if the right of way forms part of a promoted route at a local or national level, signage and; and circumstantial evidence at the time of the survey, e.g. recent disturbance of grass and crops, a clearly defined path, extent of wear, and the number of people using the right of way at the time of the survey. The extent of use of a road is based on the number of vehicles observed using the road at the time of the survey and as could reasonably be expected for the class of road.

12.2.30 In undertaking the assessment, other than the Project Site, private property has not been accessed, as it is generally considered impractical to seek approval to gain access to residential properties or other buildings to assess the effect on views from windows in a property or adjoining land. Assessment is therefore based on the nearest publicly accessible location, which will usually be a road or public right of

way or from views within the Site looking outwards. Professional judgement is therefore required as to what the likely effect on views would be from windows, making allowances for changes in height e.g. from a first or upper floor windows.

Townscape

- 12.2.31 The townscape character assessment describes the underlying topography and broad characteristics of the built environment and the impact that the Project would have on this character. It assesses the effect on the various components, which contribute to the overall urban environment such as buildings, townscape and visual characteristics, within a defined local urban area surrounding the site up to 1km from the Project Site.
- 12.2.32 The physical boundary for the townscape study was established by walking and driving throughout the locality and establishing appropriate edges. The appropriate extent of the study area was as follows:
- To the north: Up to Bridport Road, Shaftesbury Road and Brantwood Road;
 - To the south: 200m south of Junction of Bruce Grove with High Road;
 - To the west: Bruce Castle Park and Tottenham Cemetery; and
 - To the east: Watermead Way.
- 12.2.33 The methodology for the townscape assessment has been drawn from some of the terminology and guidance found within two further documents:
- CABE By Design (May 2000); and
 - Guidance on the Methodology for Multi-Modal Studies (GOMMMS).
- 12.2.34 'By Design' aims to promote higher urban design, by supporting existing planning guidance. As part of this process, it sets out the basis for defining the fundamental elements that create the urban form. GOMMMS aims to set out a methodology for undertaking studies into transport issues, so that transport problems can be effectively identified and analysed and appropriate solutions defined for an integrated approach to transport and land use. Within this, GOMMMS provides a basis for assessing townscape. This is similar to those used in 'By Design', but also includes 'townscape indicators', which can be used as a way of determining townscape value. Whilst intended for transport projects, GOMMMS does provide some useful guidance for assessing townscape.
- 12.2.35 The baseline study for the townscape assessment identifies specific and distinct aspects of townscape character, in terms of the following:
- **layout: structure & urban grain** – urban structure is the framework of routes and spaces, and the way developments, routes and open spaces relate to each other, and includes density and mix of uses. Urban grain measures the pattern of street blocks and plots and is assessed in terms of fine and coarse grain;
 - **scale: size and massing** – the size of buildings in relation to their surroundings, in particularly to a person at ground level, and the massing of buildings, expressed through arrangement, volume and shape;

- **appearance & aesthetic quality: details and richness** – facades, styles, fenestrations, building techniques, decoration, rhythm and pattern, materials (local/regional, colour, texture, pattern, etc.), and the amount to which they are used to create visual interest and create aesthetic quality; and
- **natural features** – landform, vegetation, watercourses, wildlife, setting and form, and microclimate.

12.2.36 Description of the Townscape Character Areas also consider and use the following terminologies:

- **definition and permeability** – the extent and definition of edges and building lines within townscapes, the continuity and co-ordination of character that is created by built form in relationship with each other and the spaces they surround, and the permeability of the townscape, measured in the amount of gaps and openings, that effect the sense of enclosure, and the ease of movement;
- **legibility** - the existence of notable landmarks, focal points, gateways, skylines or vistas, can help to create a sense of place and identity within an urban form. The form, layout, definition, design and signage all influence the way spaces and townscapes are experienced and how easy they are to interpret, both in terms of use and movement, all of which affect their functionality and enjoyment;
- **the quality of the public realm** – the extent, layout, design, appearance and materials used, both in terms of hard materials and vegetation, determines the quality of public spaces, including pavement and roads. Public spaces are usually how towns are experienced, and so have an important influence on the user's experience;
- **adaptability** – the extent to which a townscape can adapt to changing circumstances;
- **areas of historic importance** – areas of archaeological importance, listed buildings and conservation areas, etc, will not only be important in their own right from an historical and cultural perspective, but will have influenced the way an urban area has formed, and will underlie its character and its cultural relevance.

12.2.37 The impact of the Project has been assessed in terms of the height, mass and appearance of the proposed buildings on the wider urban context and the impact of the buildings on the immediate townscape environs in terms of the particular qualities, character and structure of the areas identified in the baseline study.

12.2.38 It should be noted that a general assessment of impact on the character of Conservation Areas has been undertaken in this section of the ES, however a more detailed analysis of the effect on the historical aspect of the Conservation Area and effects on any associated listed buildings is covered under Chapter 8, Cultural Heritage.

Views

12.2.39 To assist the reader, viewpoints are provided to demonstrate the range of available views for a variety of receptors, and geographical locations. The GLVIA refers to three types of viewpoint, which are set out and utilised as described below.

- **Representative Viewpoint** – provides a viewpoint that may be considered as typical or similar to a

particular location and where the significant effects are unlikely to differ. It therefore can be considered as being representative of other views e.g. from a Public Right of Way (PROW) or group of houses. Where the viewpoint is not representative of a neighbouring visual receptor, and there would be different significant effects, this is stated.

- **Specific Viewpoint** – illustrates a particular noteworthy or key view. This may be a promoted viewpoint or from a specific visitor attraction, tourist destination, statutory landscape designation, or particular locally valued recreational or cultural landscape associations.
- **Illustrative Viewpoint** – provided to demonstrate particular features, effects or issues. These are used to illustrate: particular Site features; the extent of visibility from within the Site from non-publicly accessible locations; or features that prevent views from certain locations.

12.2.40 The visual assessment undertaken for the ES in 2010 ascertained identified 30 viewpoints. The assessment for the Project utilises the same viewpoint locations, to assist with the comparison of the consented scheme and the current Project. These become the 29 Representative Viewpoints and Viewpoint 1 which is a Specific Viewpoint. Photographs of the existing views are provided within Appendix 12.5 and locations shown on Figures 12.1, 12.2 and 12.3. It should be noted that 7 additional viewpoints have been prepared (Viewpoints 31-37), but these have been prepared for the assessment of effects on cultural heritage and are referred to in Chapter 8. These viewpoints deal with specific issues relating cultural heritage, and whilst providing an additional reference for views, do not provide any substantive additional information in understanding whether the effects on townscape and views would be significant, relative to the previously utilised 30 viewpoints, and are therefore not assessed as part of this Chapter.

12.2.41 Viewpoints typically represent the local geographical area of the vicinity of the viewpoint and different receptor types. The selected viewpoint typically provide the worse-case scenario for a given location, and thus will usually be the same or less. The table also indicates where residential and commercial properties lie adjacent to the viewpoint, but due to the constrained and oblique view that would occur from windows, the direct view provided by the viewpoint would not be representative of the view from the window. Nevertheless, the view can be used as a reference, but with the knowledge that the views from these properties would much less effected or not all.

12.2.42 In order to help determine whether features of the Project would be visible from mid to long distance views, existing buildings and taller residential tower blocks within the vicinity of the Site were used as reference points and binoculars used during site visits to help determine the relative scale to features within the Site and the proposed built features.

12.2.43 Assessment of the predicted views was further assisted through the use of 3D modelling, wireframes, photomontages, and elevations of the Project. From the 30 viewpoints, 21 wireline Accurate Visual Representations (AVRs) and 9 photorealistic AVRs were produced, and are incorporated within Appendix 12.5. The additional Viewpoints 31-37 prepared for the assessment of cultural heritage are also provided in Appendix 12.5. These images have been produced by INK, a specialist consultant in visualisations, and the methodology for the production of these images is provided in Appendix 12.2. In addition to provide a comparison with the previously consented scheme a blue line has been added to the AVRs to indicate the outer profile/roofline of the built form of the consented scheme.

12.2.44 It should be noted that the representations used for the Southern Development outline application, are only illustrative to help the reader understand how the proposals could appear and provide a greater level of confidence in the commitment to provide a high quality development. However, detailed aspects and appearance of this part of the Project illustrated within the AVRs would be subject to further change.

12.2.45 The assessment of views includes the detailed consideration of:

- the proximity of the visual receptor to the Project;
- the extent of visibility or proportion of the Project visible within the wider context of the view;
- the nature and complexity of the existing view and any changes that would affect the skyline;
- elements within the view that may detract from or add to its quality;
- the extent to which the Project occupies the view, and whether a framed view, glimpsed or panoramic view; and
- whether the view would be experienced from a specific fixed location or whether it would form part of a sequence of views when the viewer would be moving, and if from a fixed location, such as a window, whether the Project would form the central focus of the view or a more oblique outlook.

12.2.46 A variety of visual receptors are assessed with a focus on those who are most likely to be concerned about changes to views.

Significance

12.2.47 The following table defines the categories that are used to determine the significance of effect.

Table 12.1: Significance Matrix

Criteria		Sensitivity				
		Very High	High	Medium	Low	Very Low
Magnitude	Very High	Substantial	Substantial	Major	Moderate	Moderate
	High	Substantial	Major	Moderate	Moderate	Minor
	Medium	Major	Moderate	Moderate	Minor	Minor
	Low	Moderate	Moderate	Minor	Minor	Negligible
	Very Low	Moderate	Minor	Minor	Negligible	Negligible

12.2.48 Refer to Chapter 2 for definitions of the different significance categories, noting that where Neutral is used in Chapter 2 this equates to Negligible in Table 12.1 above.

12.2.49 The assessment also considers the following aspects, as set out below.

- **Direct and Indirect:** direct effects relate to the changes on the Project Site including re-contouring of landform, loss and addition of vegetation, removal or inclusion of built structures and surface

treatments, etc. Direct effects are also experienced where there are changes to the character of the townscape, where the Project is physically located within a townscape character area. Effects on views are always considered direct. Indirect effects occur where the character is influenced by consequential changes in a neighbouring townscape character area.

- **Seasonal Variation and Duration:** due to the role that vegetation can play in preventing or limiting views, or influencing the character of the townscape, the difference between winter and summer needs to be considered. This is considered by assessing impacts in winter (in the first year following completion) and in summer (after fifteen years).
- **Beneficial, Neutral or Adverse Effects:** adverse effects are those that would be damaging to the quality, integrity or key characteristics of the townscape and/or visual resource. Beneficial effects are those effects that would result in an improvement in the quality, integrity or key characteristics of the landscape and/or visual resource. Neutral effects are those where the effect would be neither beneficial nor adverse or a balance of adverse and beneficial influences.

Cumulative Development

12.2.50 Major applications within Tottenham, South Tottenham and Haringey, that have been approved or pending a decision in the last five years, have been considered as part of this chapter of the ES. Most of these developments would involve demolition of existing buildings and replacing with buildings that would mainly affect their immediate local context, but would have little material difference in the context of the assessment of the Project. Some of the developments retain the existing façades, and the conversion or partial demolition of parts of the building that would predominantly not be visible to the public and thus would have little or no bearing in a townscape and visual context. There are several developments within the High Road corridor which would largely retain the same or similar building line and form and would have little cumulative effect with the Project. These include:

- **624 High Road:** the height, scale and massing are proportionate to the existing street scene, with a small frontage on the High Road, and sufficiently distant from the Project at approximately 600m to have limited effect;
- **596-606 High Road:** is slightly further to the south from 624 High Road and similarly replaces a building of similar size, scale and mass to that proposed, likewise with a small frontage on to the High Road, and sufficiently distant from the High Road to have limited effect; and
- **638 High Road:** this is an important location within the Conservation Area and on the corner of the key junction of the High Road and Lansdowne Road, that incorporates a former art deco style building from the 1930s and that was severely fire damaged during the Tottenham riots. This has been replaced with a building of similar style and appearance and re-establishes an important local built feature within the street scene. The building has been completed and occupied and forms part of the baseline condition and Viewpoint 15;

12.2.51 The other main developments within or in relatively close proximity to the Project on the High Road are:

- **Former Cannon Rubber Factory:** the existing industrial buildings have been replaced with 5, 6, 9

and 22 storey residential buildings, which have a noticeable influence on local townscape and views of the High Road within the vicinity. The development has now been completed and forms part of the baseline conditions. The changes are largely considered to be beneficial and, where relevant, are referred to as part of the assessment of townscape and views; and

- **Northumberland Development Project:** this is the former consented development for the proposed site and is referred to within the baseline conditions. A comparison with the proposed Project is provided within viewpoint photographs in Appendix 12.5 and referenced within Section 12.7.

12.2.52 The most notable development of significant size, that has a similar scale to the Project, is the former GLS Depot located approximately 1.5km to the south. This major redevelopment involves the demolition of the existing buildings, replacing with mixed uses (residential, student accommodation, hotel, offices, retail, health facilities and school) and the erection of 1 to 18 storey buildings. The development has now largely been completed and provides an important beneficial effect to the local townscape and visual built character. The development has been incorporated as part of the baseline conditions. The changes are sufficiently distant from the Project to have little cumulative effect and is not visible within any of the representative viewpoints, although both developments would be visible from some parts of the Lee Valley Regional Park. Nevertheless, the development does increase the awareness of further tall buildings being introduced into the wider context of the site, and is referred to where relevant within the assessment of effects of the Project.

12.3 Baseline Conditions

Introduction

- 12.3.1 This section sets out the existing situation in relation to townscape and views, including changes since the submission of the ES for the consented development. The baseline therefore includes the built elements of the Northern Development (Application Number HGY/2011/2350) including the foodstore (operated by Sainsbury's), educational facilities, stadium related uses and associated facilities. A description of the Project Site is set out in Chapter 3.
- 12.3.2 It is also considered appropriate to give regard to the unimplemented development relating to the consented stadium and Southern Developments, which together cover most of the current Project Site application boundary. The stadium was granted full planning consent and the Southern Development was granted outline planning consent in September 2011 (Application Number HGY/2010/1000). A further outline planning application (Application Number HGY/2011/2351) was submitted in December 2011 revising the proposals for the Southern Development and was consented, subject to Reserved Matters, in March 2012. The baseline situation has changed since the approvals as a result of the demolition of existing buildings to facilitate the construction of the stadium. It is considered appropriate to give regard to the existing consents for the stadium and Southern Development as they represent an approved design against which the current application can be compared. The majority of the text and focus in this Chapter assesses the current proposals in their own right. However, a comparison with the consented development is also provided within Section 12.8.
- 12.3.3 There are no statutory or local landscape or visual designations within the Project Site or local context. However, there are a number of designations that are of relevance to the assessment of townscape and views. These include: Lee Valley Regional Park; Metropolitan Open Land; Significant Open Land; Green

Chase Open Space; Conservation Areas and Public Rights of Way (refer to Figure 12.2 for location and extent).

Townscape Site Features

- 12.3.4 A number of changes have occurred to Project Site features since the consented scheme. The most notable change is the completion of the Northern Development and the operational use of the Sainsbury's Store. In addition the remaining buildings within the former Wingate Trading Estate, to the south of the Northern Development, have been demolished leaving the land open in readiness for redevelopment.
- 12.3.5 Table 12.2 describes the Project Site features and their relative value, susceptibility to change and sensitivity.

Table 12.2: Townscape Site Features Sensitivity

Site Feature	Description	Townscape Sensitivity: Value	Townscape Sensitivity: Susceptibility to Change	Overall Landscape Sensitivity
Landform	The landform is largely flat, with little visible discernible variations across the site. Landform does not form a defining feature of the site.	Low	Medium	Low
Vegetation	There is very little vegetation within the site. This is limited to the following: ▪ six sycamore trees of 7-8 metres in height on the eastern side of Worcester Avenue. These are grouped closely together in the tarmac pavement, and are of average to poor quality; ▪ a 6m Norway maple with broad canopy to the south west of the site outside the Spurs Store, of moderate condition, but currently of limited visual value; ▪ a 14m sycamore on Park Lane of average condition. Limited space and previous canopy lifting has created a tree of relative poor form. ▪ five relatively young trees planted within the pavement along High Road. Whilst these currently provide limited visual influence within the street scene, they are in good condition and have the potential to provide future value; ▪ a 22m London plane on the western side of the High Road forms a prominent tree in good condition and high quality, that	Medium	Medium	Medium

Site Feature	Description	Townscape Sensitivity: Value	Townscape Sensitivity: Susceptibility to Change	Overall Landscape Sensitivity
	provides an important local contribution to the street scene; - five trees of 8-15m within the rear gardens of 800-810, including Red Horse chestnut, sycamore, Lawson cypress and eucalyptus. Generally of variable condition, average value and provide no visual contribution to the High Road street scene; and - few small trees in the rear gardens of 26-32 Worcester Avenue. With the exception of the single mature London plane on the High Road, the trees within the site are no more than of average value and provide limited visual contribution to the street scene.			
Built Form	Following the demolition of many of the buildings within the site, the centre of the site has a very open appearance, replacing the previously intensely built character of the site. This creates an open street frontage to the High Road, Paxton Road and Worcester Avenue and much greater visual presence to the stadium within the High Road. The remaining buildings incorporate the following: Stadium: predominantly comprises four stands enclosing a playing pitch. The 1920s north and south stands with open metal-framed gantry roof structure built in the 1990s reach 25m in height. The 21m high east stand built in 1934 and 24m high west stand was completed in the 1982 fronted by mainly 3 storey brick built 17th to early 20th century structures. The structure and appearance reflects the various additions and changes, providing a functional character and a relatively discordant architectural mix. The building presents a large prominent built form with little visual relief; High Road (southern section): composed of Warrington House, a Grade II listed building, as well as other locally listed buildings that are primarily three storey	Medium	High	Medium

Site Feature	Description	Townscape Sensitivity: Value	Townscape Sensitivity: Susceptibility to Change	Overall Landscape Sensitivity
	Victorian buildings, and in fairly poor visual condition. The one storey Spurs Shop completes the group of buildings; ▪ High Road (northern section): group of buildings coherent and attractive frontage of Grade II or II* Georgian terrace properties, which provide a distinct character to this part of the High Road and Tottenham High Road Historic Corridor. These comprise 790 to 802, 804 & 806 High Road. Although a number are in a relatively poor visual condition they form an important historic and visual part of the street scene; and ▪ 20-32 Worcester Avenue: row of mid twentieth century bay windowed terraced residential properties providing a unified residential character and appearance to north end of the road.			
Free Standing Built Structures	Low brick walls and railings define the boundaries with the front gardens of residential properties along Worcester Avenue and Park Lane. These contribute to the street scene, but are general of average appearance and condition. Low brick walls and railings form part of the street frontage of 808-810 and 790-802 High Road. These form an important feature to these group of listing buildings, are of good condition and appearance, and provide an important local contribution to the street scene.	Medium	Medium	Medium
Land Use	Mixed use, incorporating the existing stadium, commercial properties, public houses, residential properties and vacant land.	Medium	High	Medium
Public Access	Public access is restricted to the streets of the High Road, Worcester Avenue, Park Lane and Paxton Road.	Medium	High	Medium

Townscape Character

- 12.3.6 Ten Townscape Character Areas have been defined within the study area (refer to Figure 12.4). A description of each TCA is set out in Appendix 12.3. The sensitivity of the TCAs is set out in Table 12.3.

Table 12.3: Townscape Character Sensitivity

Townscape Character Area	Landscape Sensitivity: Value	Landscape Sensitivity: Susceptibility to Change	Overall Landscape Sensitivity
1: THFC Stadium	Low	Low	Very Low
2: Tottenham High Road:	High	High	High
3: North Tottenham Low Level Industrial Estates	Low	Low	Very Low
4: West Tottenham Large Scale Residential	Medium	Low	Low
5: West Tottenham Linear Residential	Medium	Medium	Medium
6: East Tottenham Mixed Linear Residential	Medium	Medium	Medium
7: Northumberland Park Discordant Residential	Low	Medium	Low
8: Bruce Castle Mixed Open Space	High	Very High	High
9: Lee Valley Large Scale Industrial	Low	Low	Very Low
10: East Tottenham Large Scale Mixed Development	Low	Medium	Low

Views

Local Context

- 12.3.7 The site lies within and adjacent to a number of contrasting townscape areas as described in the previous section. The range of views are illustrated in Viewpoints 1 – 30, with the Viewpoint locations indicated on Figures 12.1, 12.2 and 12.3 and are described in Appendix 12.4. Each Viewpoint is also illustrated by a wireline AVR or photorealistic AVR of the Project (refer to Appendix 12.5). Wirelines indicates the outline of the whole Project to illustrate the location and the extent to which the Project would occupy the view. The AVRs provide a true representation of the change to the view resulting from the Project and are provided to illustrate fully what the change to the view would be.
- 12.3.8 A fuller description from each of the viewpoints is set out in Appendix 12.4. In terms of the immediate environment adjoining the site this can be summarised as follows:
- to the east there are a number of education uses. These include St Paul's and All Hallows Junior School, which is largely single storey. There are a number of mature trees in the school grounds. Immediately to the north of this school is Northumberland Park Community School, which includes 2 storey buildings and 'all weather' playing pitch surface. A high solid wall marks the school boundary. These educational uses define much of the eastern boundary of the site. Residential properties along local roads include terraced houses, such as along Almond Road, and semi-detached houses with bay windows, such as along Worcester Avenue. Within these roads there are views along the streets

towards the existing stadium as illustrated by Viewpoints 17 and 19;

- to the south on Park Lane the land use is mainly residential with a number of late Victorian terraced houses, some later 20th century flats and a community centre. Residential properties directly opposite the site currently face the existing stadium providing a dominant feature within the existing view, as typified by Viewpoint 21 (taken from the corner of Park Lane and Vicarage Road). Further west along Park Lane, views from residential properties towards the site become more oblique. Nevertheless, when the site is viewed along the line of the road by pedestrians, cyclists and vehicle users, the existing stadium remains as a dominant feature within the view in winter. Set back from Park Lane, Bromley Road (adjacent to the site), feeds off from Park Lane in an arced alignment allowing prominent views to the top of the South Stand of the existing stadium from various properties and along the alignment of the road, as illustrated in Viewpoint 22;
- to the west the High Road is the main feature, as defined by Viewpoints 16, 23 and 27. On the opposite side of the road there is a mix of uses. The St Francis de Salles Junior School and its playground are located to the south behind a narrow belt of semi mature trees. The red and buff brick Victorian gothic St Francis de Salles RC Church lies directly opposite Bill Nicholson Way and just to the north of this church a 5 storey blocks of flats with a library on the ground floor. Further to the north, there are terraced Victorian properties. These are three storeys high with a single storey section fronting the pavement comprising mixed retail outlets and the full three story element to the rear/west. Leading off the High Road are several minor roads orientated east-west, with views to the east along the roads being directly towards the site, with the properties along the High road defining and truncating the view. Such views are defined by viewpoints 24, 25, 26 and 29; and
- to the north and north-east the residential properties of Northumberland Park and minor roads that feed off this link road define the local visual context, as typified by Viewpoints 17 and 18. There are few views into the site, from residential properties and roads, due to other intervening buildings.

Wider Visual Context

- 12.3.9 The dense urban character and tight confinement of built frontages to the streets in the wider area largely restricts views to the local street scene, so that even within a neighbouring adjacent parallel street, views towards the site can soon be contained or limited to glimpsed views between properties. Even taller buildings that are visible within a localised setting and relatively short distances are often screened within views, due to the tight context of built frontage to the street itself. Existing larger residential blocks, within the vicinity of the site, have been used within the assessment process to determine the likelihood of future development on the site being visible. In particular the 21-storey Brook House on Cannon Road, 19-storey residential block of Stella House on Tottenham High Road; the 17/19-storey residential block of Kenneth Robbins House on Northumberland Grove; the 10-storey blocks of Ermine House, Moselle House, and Charles House, between Whitehall Road and White Hart Lane; and the 10-storey residential block of Trulock Court on Trulock Road.
- 12.3.10 Beyond the local context, views of the site in the wider setting typically occur where a road is orientated, so that its axis is directly aligned with the site, as typified by Viewpoints 8 and 15. In areas of open space, where there is an absence of the tight confinement of built form, this opens up wider views, as indicated

in Viewpoint 11. Other viewpoints are included, where there are no views of the existing buildings on the site, but where there may be the potential to see the larger proposed buildings on the site and in terms of road alignment are represented by Viewpoints 4, 9, and 13, and from areas of open space by Viewpoints 5, 6, 7, 10, 12, 14 and 28.

Extensive Visual Context

- 12.3.11 Very long distance viewpoints have also been assessed from key areas of open space, including Alexandra Palace (Viewpoint 1), Parliament Hill (Viewpoint 2), Greenwich Park (Viewpoint 3), and Finsbury Park (Viewpoint 30). Only from Alexandra Palace can the existing stadium be viewed as an element within the view, and this as a barely discernible feature in a much wider panoramic view. With respect to Viewpoints 2, 3 and 30, the existing buildings within the site are not visible from these locations, due to the influence of the intervening changes in landform, buildings and vegetation.
- 12.3.12 Likewise, in other locations away from these Viewpoints, the changes in landform and built context essentially restricts views of the site in nearly all locations. From other areas of open space, the existing landform, presence of trees, woodland and other buildings largely precludes views of the site.
- 12.3.13 The sensitivity of each representative Viewpoint is set out in Appendix 12.4.

12.4 Inherent Design Mitigation

- 12.4.1 The main changes that have taken place during the design process to mitigate effects to views and the townscape, relate to the buildings to the south of the stadium and are set out below:
- **Residential Towers:** the location and heights have been changed to ensure that the tallest tower lies closest to the stadium and within the centre of the cluster of towers. To improve the visual massing of the cluster and heights of the towers, Tower C was reduced from 36 to 32 storey, and Tower A from 36 to 24 storey;
 - **Building Form:** the proposals reduce the rectilinear massing of the consented residential buildings, experienced from the east and west, by introducing residential towers of varying height, reducing the effect of shadow cast by the buildings onto the public realm; and
 - **Building Shape:** the use of a chamfered profile on the lower and upper parts of the towers. This would enable a greater efficiency of space and maximising of the public realm, but would also help reduce the visual massing of the towers. The chamfered profile would be applied to the most prominent outer elevation treatment that would be most visible. Within the top of the towers this would be combined with the garden roof terraces to establish a greater sense of openness, as well as visual interest.

12.5 Potential Environmental Impacts and Effects

Construction

12.5.1 A description of the construction works and phasing of the different elements of the Project is set out in Chapter 5. Impacts during construction of the proposed scheme are expected to involve the following:

- site access and construction traffic;
- demolition works;
- excavation works and material stockpiles;
- piling and pile drivers;
- construction equipment including cranes of varying height depending on structures and timing within the construction process;
- the progressive massing of development;
- utilities works to serve the Project;
- temporary parking;
- site accommodation;
- temporary hoarding and fencing;
- protection of existing features, structures and land uses; and
- lighting of the works.

12.5.2 The effects during the construction phase would not be substantively greater, in terms of size/scale and geographical influence, to that of the effects in Year 1. The main difference during the construction phase from with the occupation phase would be the process of continual change, visual disruption, movement, the visually intrusive appearance of the inner core of new buildings and partial demolition of the existing stadium, and the need for tall cranes to complete specific parts of the Project. With the exception of TCA 1: Stadium, the effects on townscape and views would be adverse. In the case of the former, the change is assessed as neutral, due to the extensive amount of demolition work that has already occurred and is ongoing, and the sense of transition that is taking place within the Area. Most of the removal of the existing townscape site features would occur early on in the construction phase, with the exception for parts of the existing stadium, where there would be a phased approach to its removal. Most of the changes during the construction phase would relate to the construction of the new buildings and the public realm. This would be phased in terms of completion, but would still represent a number of years of construction activity. However, in townscape and visual assessment terms this would be a relatively short period of time compared to the life expectancy of the Project.

12.5.3 The assessed effect on townscape site features, townscape character areas and viewpoints during the construction phase is incorporated within the Summary Table of Effects within Appendix 12.6.

Occupation: Townscape Site Features

12.5.4 Set out below are the effects on site features.

Site Feature Sensitivity	Landform		Description of Effect
	Low		
Year 1 – Winter	Size/scale	Negligible	Extensive areas of excavation will be required to construct the basements and building foundations. However, this would make very little visible difference once the Project is operational.
	Geograph.Inf.	Medium	
	Duration/Rev.	High	
	Magnitude	Low Adverse	
	Significance	MINOR ADVERSE	
Year 15 - Summer	Size/scale	Negligible	
	Geograph.Inf.	Medium	
	Duration/Rev.	High	
	Magnitude	Low Adverse	
	Significance	MINOR ADVERSE	

Site Feature Sensitivity	Vegetation		Description of Effect
	Medium		
Year 1 – Winter	Size/scale	Low	The trees within street pavement and rear gardens of 20-32 Worcester Avenue, and the tree in front of the Spurs Shop would be removed. These are relatively poor trees of limited public amenity value. The other existing trees are within parts of the site that will not change and are retained as part of the Project.
	Geograph.Inf.	Medium	
	Duration/Rev.	High	
	Magnitude	Low Beneficial	
	Significance	MINOR BENEFICIAL	
Year 15 - Summer	Size/scale	Medium	The Project would notably increase the number of trees. This would provide a beneficial effect to the site and public urban realm. The proposed trees would be planted at a large enough size to make an immediate effect that would become more effective with time as the trees mature.
	Geograph.Inf.	Medium	
	Duration/Rev.	High	
	Magnitude	Medium Beneficial	
	Significance	MODERATE BENEFICIAL	

Site Feature Sensitivity	Free Standing Built Structure		Description of Effect
	Medium		
Year 1 – Winter	Size/scale	Low	The Project would result in the additional loss of the locally listed Victorian terraced buildings of 746, 748 and 750 High Road and the twentieth century terraced residential properties of 20-32 Worcester Avenue. These would be detrimental losses. Within Worcester Avenue this would result in the reduction in the remaining residential part of the street scene and replaced with a three storey commercial building (North Building). Whilst of different character to the remaining residential
	Geograph.Inf.	Low	
	Duration/Rev.	High	
	Magnitude	Low Beneficial	
	Significance	MINOR BENEFICIAL	
Year 15 - Summer	Size/scale		
	Size/scale	Low	
	Geograph.Inf.	Low	
	Duration/Rev.	High	
	Magnitude	Low Beneficial	

	Significance	MINOR BENEFICIAL	properties, the proposed North Building would provide enclosure and redefinition of the street frontage. This is considered a relative minor change to the built form within the site overall. Whilst there is historical interest to 746, 748 and 750 High Road, the properties are visually in poor condition, providing a neglected appearance, with relatively limited value to the townscape. This is partly because of the current detached character of the properties as built forms and loss of identity in relation to the continuous frontage character of other parts of the street scene. Whilst there would be a detrimental loss, as buildings in the own right, the Project would retain Warrington House, and create a new three storey frontage to the High Road. The removal of the existing Spurs Store and the creation of a new built frontage, would provide a beneficial change. The introduction of retail units, café and museum would revitalise the space around a new plaza on the High Road, creating an active frontage. The proposed use of cast iron panels and glazing would enable a sympathetic blending of the historic architecture with the modern predominantly aluminium and glazed frontages of the stadium and hotel. The proposed stadium would create a building of large scale and massing, with a curved form, and cohesive and uniform appearance. The balanced mixture of glazing and cladding, with form and pattern varied on different elevations, and the use of varying degrees of perforation within the aluminium panels that express an outer skin would create a sense of lightness, free flowing shapes and animation to the elevations. This would also create visual interest and detailing that would help to reduce the awareness of the large extent of the building's scale and mass. The proposed hotel, extreme sports building and residential towers would constitute a major change to the built form, within the site and surroundings. These would introduce distinctive modern architectural buildings, which would define the site and form a catalyst for future urban regeneration within the locality. Within this context, this is considered a positive influence.
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			Whilst the presence of tall residential towers is becoming more evident within Tottenham within recently constructed and consented developments, the increase of the height of the proposed towers in the Southern Development is greater than currently exists in the locality. Despite the substantial increase in height and scale of buildings, the changes would provide buildings of high quality modern architecture and detailing, creating a positive attribute to the site. The buildings would become landmark features that evidently enhances the existing built quality in the site. With the exception of the front walls of 20-32 Worcester Avenue, which would be removed as part of the Project, all the existing walls and railings would be retained. The Project provides large open areas of public realm around the stadium to accommodate the flow of large numbers of fans on match days. The Project provides raised stepped areas of lawn, planting and water features on the southern part of the podium. These measures would help to improve microclimate conditions. The increased provision would have a beneficial effect on the site.
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Site Feature	Land Use		Description of Effect
Sensitivity	Medium		
Year 1 – Winter	Size/scale	Medium	The Project incorporates a new stadium, residential, hotel, extreme sports provision, retail, educational and health uses as part of the mixed used development. The Project would reflect the mixed land use present within local townscape. However, this would be provided in a more coherent and planned form, providing a new defined centre to Tottenham and catalyst for future urban regeneration. The Project would provide an efficient use of land, maximising capacity and accommodation, and providing of new public realm, which would create a beneficial effect to the site.
	Geograph.Inf.	High	
	Duration/Rev.	High	
	Magnitude	Medium Beneficial	
	Significance	MODERATE BENEFICIAL	
Year 15 - Summer	Size/scale	Medium	
	Geograph.Inf.	High	
	Duration/Rev.	High	
	Magnitude	Medium Beneficial	
	Significance	MODERATE BENEFICIAL	

Site Feature	Public Access		Description of Effect
Sensitivity	Medium		
Year 1 – Winter	Size/scale	Medium	The Project would remove Paxton Road and associated public access. Public access would be retained along the other streets within the site. The public realm would be significantly increased, improving access within the site and more than offsetting the loss of Paxton Road. The changes would be particularly beneficial for pedestrians, through the greater restriction of vehicular access on Worcester Avenue. The proposed public realm provides more usable and enjoyable space for pedestrians and fans on match days, as well as for the local community and visitors on non-match days. The proposals would result in a greatly enhanced legibility and movement, as well as providing areas for sitting and resting. The use of varying tones of granite and Yorkstone as paving materials, would create high quality and durable finishes to the new and existing areas of public access.
	Geograph.Inf.	High	
	Duration/Rev.	High	
	Magnitude	Medium Beneficial	
	Significance	MODERATE BENEFICIAL	
Year 15 - Summer	Size/scale	Medium	
	Geograph.Inf.	High	
	Duration/Rev.	High	
	Magnitude	Medium Beneficial	
	Significance	MODERATE BENEFICIAL	

Occupation: Townscape Character

12.5.5 Set out below are the effects on townscape character and are summarised in Appendix 12.6.

(Note: Yr = Year; Size = Size/Scale; Geo Inf = Geographical Influence; Dur/Rev = Duration/Reversibility; Mag = Magnitude; Sign = Significance)

Townscape	1: THFC Stadium		Description of Effect
Sensitivity	Very Low		
Year 1 – Winter	Size/scale	Very High	The Project would create a substantial change to the townscape character, introducing a very different scale, form and appearance. The stadium would relate effectively with its boundaries and neighbouring streets, and address an important aspect that is lacking with the existing stadium. The stadium would relate to the new Sainsbury's Store building, in terms
	Geograph.Inf.	Very High	
	Duration/Rev.	High	
	Magnitude	Very High Beneficial	

	Significance	MODERATE BENEFICIAL	form, massing and appearance, as originally envisaged as part of the consented development.
Year 15 - Summer	Size/scale	Very High	The stadium would introduce a new building of substantial mass, articulated to provide a curving form, enabling improved access and circulation. The elevation utilises a mixture of materials, but would be predominantly characterised by the use of glazing and aluminium. The expansive arched glazed curtain wall of the south elevation would provide visual openness and lightness to the elevation. The glazing would also form an important element of the west elevation, continuing a sense of openness and lightness to the structure. This would be emphasised by the sense of movement and drama on match days at different levels. The north and east elevations provide a balanced mixture of glazing and cladding. The variably perforated aluminium vertical panel skin, would give visual interest and diversity, whilst providing a unifying appearance that wraps around the whole stadium. The articulation of the elevations with a mix of solid panels, voids and varying degrees of perforation, as well as openings for vents, would provide visual relief and interest that also relates to pattern of fenestration within the neighbouring existing buildings. The curved standing seam roof edge would create a solidity to define the top of the stadium, providing continuity. the Project to the south of the stadium would introduce town houses along Park Lane that would provide a more appropriate townscape character and form comparison with the existing stadium by providing an active street frontage and a form and appearance that relates to the residential character of the street. The use of chamfered profile to the residential towers set above the townhouses, would enable an efficient use of space, enabling a greater depth of public realm. The residential towers provide a varied height and scale, but would be substantially larger than the adjoining residential buildings. Nevertheless, this would reflect the character of other residential towers present within the locality, and as demonstrated by the recently
	Geograph.Inf.	Very High	
	Duration/Rev.	High	
	Magnitude	Very Beneficial High	
	Significance	MODERATE BENEFICIAL	

			constructed Brook House at the former Cannon Rubber Factory. The vision for the design of the towers incorporates deep reliefs, balconies, garden roof terraces, a strong white masonry framework and balanced mixture of glazing and natural coloured terracotta panels. This would create strong architectural quality and detailing, providing an enhanced built quality and appearance to the townscape. The proposed extreme sports building would create a simple but distinctive form and articulation, which extends into the elevation treatments through the use contrasting tonal pre-cast concrete and glazing. This would provide a striking visual building offset between the proposed hotel and residential towers. The proposed public realm, would create a greatly enhanced area of pedestrian access, not only beneficial to fans on match days, but also to the wider local community and visitors at other times. This would improve legibility and movement, as well as providing dynamic spaces at different levels. Large paved areas would provide for access and movement of large numbers of people on match days predominantly at the podium level. The areas of public realm would also be extended along the High Road and Park Lane, and through the creation of a shared surface along Worcester Avenue. Raised planters would define space, and in association with areas of banked steps, which would retain and direct movement. Water jets on the southern part of the podium would create an area of visual diversity and focus for activity. Tree planting would be provided within the raised beds, and form new street trees along Worcester Avenue, Park Lane and the High Road, providing an important contribution to the townscape, which is largely lacking within the Area. These measures would also improve the local microclimate. The use of different tones of granite and Yorkstone paving would provide a high quality treatment to the public realm that extends into the envelope of the proposed stadium. Overall the Project would create a notable enhancement by providing a well-defined and
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			formed built character and public realm, utilising high quality architecture and materials. The design of the buildings creates a unity and consistency, whilst also providing visual diversity. The simplicity of form and shape provides complementary buildings, with well-proportioned and rhythmical detailing, whilst being sufficiently different to provide diversity and interest. The changes are seen as an important element in the proposed vision for the wider townscape regeneration that would extend the enhancements and improve the quality of the built character.
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Townscape Sensitivity	2: Tottenham High Road		Description of Effect
	High		
Year 1 – Winter	Size/scale	High	The Tottenham Experience and museum would create a new 3 storey built form that would introduce a distinctive new built material that uses cast iron panels to the facades. This approach would provide an association with the historic and contemporary use of metal as an elevation treatment to buildings. The treatment would be sympathetic, whilst also being clearly different to the historic built character of the retained Warmington House and other neighbouring buildings, enabling the existing historic buildings to be understood in the context of the new modern architecture. The fragmented nature of the existing built form, building line and character to the south-west of the site would be removed, and Warmington House integrated to provide a more clearly defined built form that visually connects the historic character with the proposed modern architecture. The poor visual appearance of some of the gable ends of existing buildings, the ordinary appearance of the existing Spurs Store and the random variation of set backs along the building line, would be removed, and replaced with a clearly defined layout form and appearance, creating a more integrated built character that links the High Road to an extensive area of public realm, whilst also providing a continuity and visual containment to the street built
	Geograph.Inf.	High	
	Duration/Rev.	High	
	Magnitude	High Beneficial	
	Significance	MAJOR BENEFICIAL	
Year 15 - Summer	Size/scale	High	
	Geograph.Inf.	High	
	Duration/Rev.	High	
	Magnitude	High Beneficial	
	Significance	MAJOR BENEFICIAL	

			frontage. The poor visual condition of Warrington House would be restored to its former historic appearance securing its future as an integral part of the streetscape. Beyond the immediate context of the site within the TCA, the effects would dissipate with distance. Within this context, the changes would largely be experienced as occurring beyond and separate from the High Road street frontage, thereby retaining the existing continuity and integrity of the built line and facades, whilst introducing a new focal feature to the streetscape. Within the immediate context of the site, the introduction of the proposed stadium and hotel, and the presence of the proposed Southern Development within the adjoining TCA 1, would significantly change the streetscape. The scale and mass would be much greater than the retained buildings along High Road. This would change the historical context of the street scene, in terms of the scale, form and appearance of the existing buildings that define its character. Nevertheless, the proposals would reflect the continually evolving character of the High Road, and whilst a major change, would create a significant new landmark feature along the High Road, defined by high quality architecture. The presence of THFC within Tottenham would more effectively engaged with the street scene of the High Road. The Project would create a major landmark feature and destination on the High Road that is currently lacking. The proposals also enable a more extensive area of public realm to be created along the High Road, within enhanced public access, movement and legibility, which extends into the adjoining parts of the site... The use of high quality paving materials, water features, raised planting beds, seating and additional new trees, would all enhance the character and appearance of this part of the TCA. The proposals would create a major change to the TCA within the local context of the TCA, but much reduced beyond. On balance,
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			the beneficial influences would notably outweigh the adverse effects that both helps secure and further enhance the condition and appearance of the TCA, as well as regenerate the urban fabric.
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Townscape	3: North Tottenham Low Level Industrial Estates		Description of Effect
Sensitivity	Very Low		
Year 1 – Winter	Size/scale	Medium	The Tottenham Experience and museum would create a new 3 storey built form that would introduce a distinctive new built material that uses cast iron panels, giving a creative approach that provides an association with the historic and modern use of metal as an elevation treatment to buildings. The treatment would be sympathetic, whilst also being clearly different to the historic built character of Warmington House and other neighbouring buildings, enabling the existing buildings to be understood in the context of the new modern architecture. The fragmented nature of the existing built form, building line and character to the south-west of the site would be removed, and Warmington House integrated to provide a more clearly defined built form that visually connects the historic character with the proposed modern architecture. The poor visual appearance of some of the gable ends of existing buildings, the ordinary and limited definition of the existing Spurs Store and the random variation of set backs along the built line, would be removed, and replaced with a more clearly defined layout form and appearance, creating a more integral built character that links the High Road to a more extensive area of public realm, whilst providing a continuity and visual containment to the street built frontage. The poor visual condition of Warmington House would be greatly enhanced, restoring its former historic appearance and securing its future as an integral part of the streetscape. Beyond the immediate context of the site within the TCA, the effects would dissipate
	Geograph.Inf.	Low	
	Duration/Rev.	High	
	Magnitude	Medium Beneficial	
	Significance	MINOR BENEFICIAL	
Year 15 - Summer	Size/scale	Medium	
	Geograph.Inf.	Low	
	Duration/Rev.	High	
	Magnitude	Medium Beneficial	
	Significance	MINOR BENEFICIAL	

		with distance. Within this context, the changes would largely be experienced as occurring beyond and separate from the High Road street frontage, thereby retaining the existing continuity and integrity of the built line and facades, whilst introducing a new focal feature to the streetscape. Within the immediate context of the site, the introduction of the stadium and hotel, and the presence of the buildings to the south of the stadium within the adjoining TCA 1, would significantly change the streetscape. The scale and mass would be much greater than the retained buildings along High Road. This would change the historical context of the street scene, in terms of the scale, form and appearance of the existing buildings that define its character. Nevertheless, the proposals would reflect the continually evolving character of the High Road, and whilst a major change, would create a significant new landmark feature within the High Road, defined by high quality architecture and use of materials, removing the existing hinterland character and enabling THFCs cultural presence within the community to be more evidently visually reflected and defined within the High Road. The Project would create a major landmark feature and destination on the High Road that is currently lacking. The proposals also enable a more extensive area of public realm to be created along the High Road, within enhanced public access, movement and legibility, which extends into the adjoining areas of land. The use of high quality paving materials, water features, raised planting beds, seating and additional new trees, would all enhance the character and appearance of this part of the TCA. The proposals would create a major change to the TCA within the local context of the TCA, but much reduced beyond. On balance, the beneficial influences would notably outweigh the adverse effects that both helps secure and further enhance the condition and appearance of the TCA, as well as restore the strength of the urban fabric.
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Townscape	4: West Tottenham Large Scale Residential		Description of Effect
Sensitivity	Low		
Year 1 – Winter	Size/scale	High	The effect of the Project on TCA 4, would be experienced as a change occurring beyond the immediate boundary of the High Road, creating a substantial change within the immediate locality. This would be understood as being a change separate and removed from the TCA, but nevertheless influenced by the changing characteristics within an adjoining TCA. The changes would not conflict with the diverse range of built form, scales and character of the TCA.
	Geograph.Inf.	High	
	Duration/Rev.	High	
	Magnitude	High Beneficial	
	Significance	MODERATE BENEFICIAL	
Year 15 - Summer	Size/scale	High	The TCA has a disjointed and mixture of urban form and layout, relatively poor inter-connectivity and aesthetically poor qualities of the built form. Despite the close proximity to the High Road, there is little visual relationship with it. Indeed the 'back of houses' appearance along Whitehall Street detracts from the character of the Area. The Project would introduce buildings of very different, but well defined, coherent and unified form and appearance, whilst introducing aesthetic visual diversity in a coordinated manner that is lacking within the TCA. This would form a landmark feature and catalyst for further high quality townscape regeneration within the TCA.
	Geograph.Inf.	High	
	Duration/Rev.	High	
	Magnitude	High Beneficial	
	Significance	MODERATE BENEFICIAL	

Townscape	5: West Tottenham Linear Residential		Description of Effect
Sensitivity	Medium		
Year 1 – Winter	Size/scale	Medium	The relatively narrow built area located between the railway and the open space of Bruce Castle Park and Tottenham Cemetery, is characterised by a strong linear pattern of roads and two storey terraced and semi-detached housing, densely arranged, providing a strong sense of visual enclosure and visual unity, but with few distinctive features or landmarks. The extent of enclosure reduces the extent to which the TCA would be influenced by the Project. An awareness of change would predominantly occur where streets are aligned east to west,
	Geograph.Inf.	Low	
	Duration/Rev.	High	
	Magnitude	Medium Beneficial	
	Significance	MODERATE BENEFICIAL	
Year 15 - Summer	Size/scale	Medium	
	Geograph.Inf.	Low	
	Duration/Rev.	High	
	Magnitude	Medium Beneficial	
	Significance	MODERATE BENEFICIAL	

			where the proposed stadium and residential towers would be partially visible as a focal feature at the end of the street scene. The TCA is separated from the site by the railway and TCA 2 and 4, and would be interpreted as a change occurring in a different part of the urban conurbation, creating a clearly different townscape character but unrelated and removed from TCA 5. The changes would be noticeable where visible, forming a new beneficial landmark feature, but throughout much of the TCA, the character would be unaffected.
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Townscape	6: East Tottenham Mixed Linear Residential		Description of Effect
Sensitivity	Medium		
Year 1 – Winter	Size/scale	Medium	The townscape character of the area is generally cohesive, defined by strong linear grid pattern, and continuity in built form with a high level of linear enclosure. This character would limit the awareness of change, due to the restrictive enclosure of the built form. The effect on the TCA would predominantly be restricted to the northern part of the TCA, particularly within the residential roads in close proximity to the Project and where aligned towards the Project. The changes would occur beyond the TCA boundary. The existing stadium in TCA 1 would be removed. The proposed residential elements of the Southern Development would reflect the predominantly residential character of the TCA, but the scale of the residential towers would noticeably contrast with the two storey houses in close proximity. This would have an adverse effect in close proximity, but would dissipate with distance, with the perception of scale becoming more in balance with the existing streetscape. For much of the TCA, the integral character of the unified streetscape would be retained, with the awareness of a more distant change within the urban conurbation. The appearance of the residential towers would provide a high quality built form and detailing. On balance the changes are considered
	Geograph.Inf.	Medium	
	Duration/Rev.	High	
	Magnitude	Medium Neutral	
	Significance	MODERATE NEUTRAL	
Year 15 - Summer	Size/scale	Medium	
	Geograph.Inf.	Medium	
	Duration/Rev.	High	
	Magnitude	Medium Neutral	
	Significance	MODERATE NEUTRAL	

		neutral.
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Townscape Sensitivity	7: Northumberland Park		Description of Effect
	Low		
Year 1 – Winter	Size/scale	Medium	The urban form of the TCA is depicted by an erratic and inconsistent layout, with piecemeal infill development, and discordant mixture of built scales, creating a poorly defined character.
	Geograph.Inf.	Medium	
	Duration/Rev.	High	
	Magnitude	Medium Beneficial	
	Significance	MINOR BENEFICIAL	
Year 15 - Summer	Size/scale	Medium	In an Area that is defined by a varied and mixed built form and character, the introduction of the new built features just beyond the boundary of TCA 7, would not conflict with its character and would be beneficial by introducing a higher quality of architectural form and detailing.
	Geograph.Inf.	Medium	
	Duration/Rev.	High	
	Magnitude	Medium Beneficial	
	Significance	MINOR BENEFICIAL	

Townscape Sensitivity	8: Bruce Castle Mixed Open Space		Description of Effect
	High		
Year 1 – Winter	Size/scale	Medium	Much of the TCA has a well treed character, with large numbers of mature trees that provide a strong and contrasting green open space character within a dense urban setting. The surrounding built form also creates enclosure, even in winter, generally limiting awareness of change to the peripheral boundaries of the TCA.
	Geograph.Inf.	Low	
	Duration/Rev.	High	
	Magnitude	Medium Adverse	
	Significance	MODERATE ADVERSE	
Year 15 - Summer	Size/scale	Medium	The Project would introduces changes within a TCA separated by TCA 2, 4 and 5. However, the changes are sufficiently large in scale and massing, that they would adversely affect the TCA by increasing the awareness of the surrounding urban setting, and introducing buildings of much larger scale than the buildings surrounding the TCA. This effect would be limited in geographical influence, mainly being restricted to the northern part of the Bruce Castle Park, with much of the TCA being largely unaffected.
	Geograph.Inf.	Low	
	Duration/Rev.	High	
	Magnitude	Medium Adverse	
	Significance	MODERATE ADVERSE	

Townscape Sensitivity	9: Lee Valley Large Scale Industrial		Description of Effect
	Very Low		
Year 1 – Winter	Size/scale	Very Low	The TCA is composed of large scale utilitarian industrial units following a linear pattern which shape the visual character of
	Geograph.Inf.	Low	
	Duration/Rev.	High	
	Magnitude	Very Low Beneficial	

	Significance	NEGLIGIBLE BENEFICIAL	the area. There is consequently little influence from adjoining areas of townscape character, except along its boundaries or as visual elements beyond the end of streets. The Project would consequently have very little effect on the TCA, and where evident would be experienced as an unrelated and distant change, introducing a feature of interest within the wider urban conurbation.
Year 15 - Summer	Size/scale	Very Low	
	Geograph.Inf.	Low	
	Duration/Rev.	High	
	Magnitude	Very Low Beneficial	
	Significance	NEGLIGIBLE BENEFICIAL	

Townscape Sensitivity	10: East Tottenham Large Scale Mixed Development		Description of Effect
	Low		
Year 1 – Winter	Size/scale	Very Low	The character of the TCA illustrates a discordant nature with inconsistent layout and limited interconnectivity, poor legibility and a built form that is typically defined by large scale and massed buildings. The Project would have very limited effect on the TCA, due to the containing nature of the existing built form and the extent of distance and separation. Where visible the change would be experienced as a distant new feature and character, unrelated to the TCA, but consistent with its presence in a large urban conurbation, with a varied townscape that incorporates similar large scale buildings.
	Geograph.Inf.	Very Low	
	Duration/Rev.	High	
	Magnitude	Very Low Beneficial	
	Significance	NEGLIGIBLE BENEFICIAL	
Year 15 - Summer	Size/scale	Very Low	
	Geograph.Inf.	Very Low	
	Duration/Rev.	High	
	Magnitude	Very Low Beneficial	
	Significance	NEGLIGIBLE BENEFICIAL	

Occupation: Views

- 12.5.6 The tables below set out the effects on the representative viewpoints and is summarised in Appendix 12.6 (refer to Figures 12.1, 12.2 and 12.3 for Viewpoint locations). Appendix 12.5 illustrates the view from each viewpoint, with some prepared as photorealistic AVRs that visually demonstrate how the view will change, and some prepared as wireline AVRs. The latter provides an outline of the total building mass of the Project as a red line, to assist in understanding where the proposed buildings would be located within the view and their extent. An additional blue line is provided to provide a comparison with the consented development. Where the Southern Development is illustrated by a photorealistic AVR, these accord with the Parameter Plans and Design Code. It should also be understood that the images have been prepared as a single frame photograph, capturing one part of typically much wider extent of view. It is therefore important that images are also viewed in the location the photographs were taken, to appreciate the correct scale of the proposals and understand the change in the wider context of the view. The assessed effects, sometimes refer to other features within the wider context that are not visible within images provided in Appendix 12.5, but are relevant to how the Project would relate to the features within the wider view. Additionally, the assessed geographical influence of the Project on the view is based on the view experienced from the viewpoint location, incorporating a wider view where this is available.

(Note: Size = Size/Scale; Geo Inf = Geographical Influence; Dur/Rev = Duration/Reversibility; Mag = Magnitude; Sign = Significance)

Viewpoint	1	Description of Effect
Sensitivity	High	
Year 1 – Winter	Size/scale	Medium
	Geograph.Inf.	Low
	Duration/Rev.	High
	Magnitude	Medium Beneficial
	Significance	MODERATE BENEFICIAL
Year 15 - Summer	Size/scale	Medium
	Geograph.Inf.	Low
	Duration/Rev.	High
	Magnitude	Medium Beneficial
	Significance	MODERATE BENEFICIAL

The Project would form a noticeable change to the view, with the relatively larger massing of the proposed stadium forming a more clearly discernible feature in the view, in comparison to the existing stadium. The proposed hotel and residential towers would create visually strong new vertical forms within the broader urban setting. The most noticeable aspect being the top of the proposed hotel and Tower C breaking the skyline. The form and massing of the proposed buildings would not be disproportionate to the scale of the urban context and the extent occupied within the view. Due to the presence of other recti-linear buildings closer to the viewer, the effect of perspective gives the perception of a similar scale of massing and occupation of the view. Other existing residential towers within the view provides the awareness that this a characteristic feature of the view.

The greater height and massing of the proposed hotel and residential towers, draws the attention of the viewer to this part of the view. This would create a landmark feature, in part of panorama that lacks a positive distinctive urban feature. The most noticeable existing feature within the view is the London Waste Ecopark Incinerator, which forms a detractive and intrusive feature. The Project would become the most distinctive feature, drawing visual attention away from the incinerator. The proposals would provide a high quality development in terms or architectural design and use of materials. The introduction of the Project as a landmark feature into the view would visually reflect the status and importance of THFC within this part of Greater London.

The Project would become a clearly identifiable new feature within a part of a very

			extensive panoramic view from Alexandra Palace that extends well beyond that shown within the AVR of the Viewpoint. The Project would be seen within the context of other urban landmark features within the wider panorama, which add to the visual interest and character of the view.
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Viewpoint	2	Description of Effect
Sensitivity	High	
Year 1 – Winter	Size/scale	Very Low
	Geograph.Inf.	Very Low
	Duration/Rev.	High
	Magnitude	Very Low Neutral
	Significance	MINOR NEUTRAL
Year 15 - Summer	Size/scale	No Change
	Geograph.Inf.	No Change
	Duration/Rev.	High
	Magnitude	No Change
	Significance	No Change

Viewpoint	3	Description of Effect
Sensitivity	High	
Year 1 – Winter	Size/scale	No Change
	Geograph.Inf.	No Change
	Duration/Rev.	High
	Magnitude	No Change
	Significance	No Change
Year 15 - Summer	Size/scale	No Change
	Geograph.Inf.	No Change
	Duration/Rev.	High
	Magnitude	No Change
	Significance	No Change

Viewpoint	4	Description of Effect
Sensitivity	High	
Year 1 – Winter	Size/scale	No Change
	Geograph.Inf.	No Change
	Duration/Rev.	High
	Magnitude	No Change
	Significance	No Change
Year 15 - Summer	Size/scale	No Change
	Geograph.Inf.	No Change
	Duration/Rev.	High
	Magnitude	No Change
	Significance	No Change

Viewpoint	5		Description of Effect
Sensitivity	High		
Year 1 – Winter	Size/scale	Low	The stadium would not be visible within the view. All four proposed residential towers would be clearly visible on the skyline above the roofline of the neighbouring two storey houses. This would be experienced in the wider context of the Broadwater Farm's mid and high rise residential towers. The effect of distance, results in the buildings to the south of the stadium appearing as small scaled buildings in comparison to that of the Broadwater Farm Community Centre and residential towers, occupying a much smaller proportion of the view. Within the context of other high rise residential blocks, the change to the view would not be unexpected, forming a similar characteristic visual feature. The principles set out in the Design Code for the outline elements of the application, indicate the Project would lead to the introduction of higher quality built form within the view than currently characterised by the Broadwater Farm estate. However, given the distance of the Project from the viewer, the architectural detailing would be less influential on the view and therefore would create a neutral effect.
	Geograph.Inf.	Low	
	Duration/Rev.	High	
	Magnitude	Low Neutral	
	Significance	MODERATE NEUTRAL	
Year 15 - Summer	Size/scale	Low	
	Geograph.Inf.	Low	
	Duration/Rev.	High	
	Magnitude	Low Neutral	
	Significance	MODERATE NEUTRAL	

Viewpoint	6		Description of Effect
Sensitivity	Low		
Year 1 – Winter	Size/scale	Low	The Project would have no effect on views in summer, where vegetation in the foreground would provide an effective screen. In winter, filtered views of the Project would be evident through vegetation. The top of the stadium would be visible just above the embankment in the foreground, with the residential towers forming a discernible new feature. This would form a small change to the view, with most road users having limited awareness of the change to the view. The Project would occupy a small proportion of the view and smaller visual massing in comparison to other industrial units along the River Lee, and much lower in height than the overhead powerlines and pylon towers, that are both visible within the wider view from the Forest Lane Bridge. Whilst of a higher quality built
	Geograph.Inf.	Low	
	Duration/Rev.	High	
	Magnitude	Low Neutral	
	Significance	MINOR NEUTRAL	
Year 15 - Summer	Size/scale	No Change	
	Geograph.Inf.	No Change	
	Duration/Rev.	High	
	Magnitude	No Change	
	Significance	No Change	

			development to the industrial units, this would be difficult to determine due to distance and the influence of intervening vegetation and therefore on balance, this is considered a neutral effect on the view.
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Viewpoint Sensitivity	7 High	Description of Effect
Year 1 – Winter	Size/scale	Medium
	Geograph.Inf.	Medium
	Duration/Rev.	High
	Magnitude	Medium Neutral
	Significance	MODERATE NEUTRAL
Year 15 - Summer	Size/scale	Medium
	Geograph.Inf.	Medium
	Duration/Rev.	High
	Magnitude	Medium Neutral
	Significance	MODERATE NEUTRAL
		The top of the proposed stadium would be visible above the vegetation along the railway in the foreground as filtered views through the vegetation in winter. The proposed hotel, extreme sports building and residential towers would be clearly visible, forming a noticeable and conspicuous new feature above the existing vegetation and against the skyline. This would be experienced within the context of other tall structures, most notably the large mast seen in same visual context and other built features within the wider context of the view. This includes the residential towers of Brook House, Stella House, the closer Kenneth Robbins House, and the tall chimney stacks within the railway sidings and the low profiled but large massing of the Northumberland Park Depot industrial units. The Project would not be visually disproportionate to these existing built features and structures within the view. The form, architectural detailing and materials would be a discernible aspect that would influence the view, most notably the residential towers. The use of chamfered profiles, deep reveals, balance of glazing and solidity of masonry frame and natural coloured terracotta cladding, and garden rooftop terraces, would provide a higher quality built form to most of the other buildings within the view, providing a beneficial influence. However, on balance, the change is considered a neutral effect on the view.

Viewpoint	8		Description of Effect
Sensitivity	Low		
Year 1 – Winter	Size/scale	High	The proposed stadium would not be visible within the view. The existing stadium at the centre of the view would be replaced in the view, primarily by the proposed residential towers. Most noticeably Tower C would form a prominent new feature, with Tower A being screened in summer and only filtered views through the existing street trees in winter. The proposed residential towers would be seen at the end of the street scene forming a new focal feature of enhanced architectural quality to the existing stadium, but substantially taller, both in comparison to the existing stadium and the domestic scale of the terraced houses to the left of the street. The buildings to the south of the stadium would be visually proportionate and occupy a similar extent of the view to that of the residential blocks to the right of the view, due to the influence of perspective and distance. The Project would create a more defined residential focal element, providing a new landmark feature at the centre of the view. The design and detailing of the buildings to the south of the stadium would form an important aspect of the change to the view. The residential towers would provide well proportioned, harmonious and coherent built elevations, with a strong vertical rhythm of solids and voids. The use of deep reveals, garden roof terraces, balconies and balance of glazing, masonry and natural terracotta panels would provide a high quality built character. This would be of higher architectural quality to the existing residential blocks along Park Lane. Due to the prominence of the residential towers, this would provide an important influence on other future built development and planned urban regeneration. The increase in height and massing would be balanced against the introduction of a high quality landmark feature, creating a neutral effect.
	Geograph.Inf.	High	
	Duration/Rev.	High	
	Magnitude	High Neutral	
	Significance	MODERATE NEUTRAL	
Year 15 - Summer	Size/scale	High	
	Geograph.Inf.	High	
	Duration/Rev.	High	
	Magnitude	High Neutral	
	Significance	MODERATE NEUTRAL	

Viewpoint Sensitivity	9	Description of Effect
	Low	
Year 1 – Winter	Size/scale	Low
	Geograph.Inf.	Low
	Duration/Rev.	High
	Magnitude	Low Neutral
	Significance	MINOR NEUTRAL
Year 15 - Summer	Size/scale	Low
	Geograph.Inf.	Low
	Duration/Rev.	High
	Magnitude	Low Neutral
	Significance	MINOR NEUTRAL
The construction of the building in the mid-distance occupies the centre of the view and street scene, and combined with the other existing buildings within Fore Street, would screen most of the Project. Only the very top of the proposed hotel, part of the top of the proposed stadium and the top of Tower C would be discernible as a change to the view. This would visually coalesce with the existing massing of the built form within the street scene. Variations in the massing of the built elevations and the use of an outer aluminium screen cladding within the proposed stadium and hotel would form a discernible aspect, but would have little influence on the view and the built character of the street scene. The Project would introduce small elements of new built character that would be consistent with the existing mixed character already present within the view. Accordingly the change to the view would be a neutral effect.		

12.5.7

Viewpoint Sensitivity	10	Description of Effect
	High	
Year 1 – Winter	Size/scale	Low
	Geograph.Inf.	Very Low
	Duration/Rev.	High
	Magnitude	Very Low Adverse
	Significance	MINOR ADVERSE
Year 15 - Summer	Size/scale	Very Low
	Geograph.Inf.	Very Low
	Duration/Rev.	High
	Magnitude	Very Low Adverse
	Significance	MINOR ADVERSE
The extent and density of the intervening vegetation would largely screen the Project in winter and almost entirely screen in summer. The proposed hotel and residential towers would be a barely discernible new feature, visible as a very filtered view through the existing trees. The change would introduce built development on the skyline, in a part of the view where there is currently no built development, and therefore would form an adverse effect.		

Viewpoint	11	Description of Effect
Sensitivity	High	
Year 1 – Winter	Size/scale	Medium to High
	Geograph.Inf.	Medium
	Duration/Rev.	High
	Magnitude	Medium Adverse
	Significance	MODERATE ADVERSE
Year 15 - Summer	Size/scale	Medium to High
	Geograph.Inf.	Medium
	Duration/Rev.	High
	Magnitude	Medium Adverse
	Significance	MODERATE ADVERSE

The upper part of the stadium would be visible above the roofline of the existing buildings in the fore and mid ground in winter, viewed as filtered views through the existing trees. The density of the branch structure of the existing trees is sufficient to provide an effective reduction in the visual awareness of a change to the view. In summer, the mature park trees would screen the proposed stadium.

The most noticeable change would be the introduction of the proposed hotel, part of the extreme sports building and residential towers, with parts of Tower C being seen above and to the side of the hotel. Whilst this would be partially screened by the existing park trees, much of the proposed buildings would be clearly visible set against the skyline. The height and massing of the proposed buildings would be clearly taller and larger than the adjoining buildings within the view and occupy a part of the skyline that is not reflected by other buildings within the view. However, the changes would be proportional to the existing trees within the view and would not dominate within the view. The trees would remain as the key features and the treed nature of the park would be retained as the prominent character of the view.

The glazed cladding and perforated aluminium screen elevation to the proposed hotel and the deep reveals and upper garden roof terraces would form a distinctive and high quality built character. Whilst introducing a positive built character to the view, it would be evidently different to the existing built character. In summer, whilst the proposed buildings would be partly screened by the existing trees, the change would be more apparent, as most of the existing buildings would also be screened by the trees. Consequently, the proposed hotel and residential towers would become the most evident built feature within the view. The

			change to the view in the context of the historic park is assessed as an adverse change.
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Viewpoint	12	Description of Effect
Sensitivity	High	
Year 1 – Winter	Size/scale	Very Low
	Geograph.Inf.	Low
	Duration/Rev.	High
	Magnitude	Very Low Adverse
	Significance	MINOR ADVERSE
Year 15 - Summer	Size/scale	Very Low
	Geograph.Inf.	Low
	Duration/Rev.	High
	Magnitude	Very Low Adverse
	Significance	MINOR ADVERSE
The existing park trees within the foreground and mid-distance would create a multi-layered screening effect, providing a complete screen for the Project in summer and a dense screen in winter. The proposed hotel and residential towers would be barely discernible as new features through the dense screening effect of the trees in winter. There are no buildings of similar character and proportionate massing within the view, so the effect would be an adverse change.		

Viewpoint	13	Description of Effect
Sensitivity	Medium	
Year 1 – Winter	Size/scale	Low
	Geograph.Inf.	Low
	Duration/Rev.	High
	Magnitude	Low Beneficial
	Significance	MINOR BENEFICIAL
Year 15 - Summer	Size/scale	Low
	Geograph.Inf.	Low
	Duration/Rev.	High
	Magnitude	Low Beneficial
	Significance	MINOR BENEFICIAL
The stadium would form a new distant focal feature at the centre of the view. This would replace the existing view of residential tower of Stella House, which would be located behind the stadium. The stadium would appear as being approximately the same height as Stella House, but occupying a slightly larger proportion of the view, set against the skyline. The proposed hotel would relate more to the existing building line to the right of the view, and form an apparent new feature within the view, partially screened by the existing street trees within the view. The residential towers would not be visible in summer and only glimpsed as very filtered views through the existing trees in winter. The stadium and hotel would become sufficiently evident within the view that it would define the presence of the stadium as a landmark for fans and visitors arriving from Seven Sisters, whilst not overwhelming and retaining the broad character of the street scene. The proposals Project would be experienced as a change to the view, occurring beyond and separate from the main street thoroughfare in the fore and mid		