Identification and Assessment of Likely Impacts and Effects

10.28 This section firstly considers the potential effects of the spur tunnel and shaft construction, with particular consideration to both human health and controlled waters. Where a likely adverse significant effect is identified appropriate mitigation measures are prescribed in the mitigation section of this Chapter.

10.29 As well as construction the section also identifies the potential longer term effects associated from the operation of the spur tunnel and headhouse. Where a significant effect is identified mitigation measures are provided.

Construction Impacts

10.30 Construction effects by their nature tend to be temporary and short term impacts and do not generally result in residual effects beyond the main construction period. The Project construction activities with a potential to affect human health and controlled waters via ground contamination include:

(i) General earthworks, stockpiling of materials, and dewatering activities

(ii) Works involving the slightly contaminated soil identified during the Site Investigation, where it is likely to be exposed to future users of the site or alternatively leached into controlled waters, or the sulphate-rich components of the London Clay;

(iii) Construction of shaft lining, which may form new vertical migration pathways for any contamination that may be present;

(iv) Fuel storage and refuelling; and

(v) Car parking and plant machinery storage.

Earthworking, Soil Stripping and Stockpiled Materials

10.31 Typical contaminants potentially released from earthworking activities, traffic management, and the storage of stockpiled material includes soil and dust particulate material mobilised in surface water runoff. Slightly contaminated soil within the shaft and headhouse foundation envelope will be removed for off-site disposal.

10.32 Construction workers may be directly exposed to contamination through the inhalation of airborne dust or vapour, and direct dermal contact. However, due to the likely short term duration of the exposure, the magnitude of the change is expected to be small, and although the sensitivity of the receptor is high, the effect on construction workers is expected to be not significant.

Dewatering Activities

10.33 Extensive dewatering activities can create the potential for construction workers' exposure to groundwater. Some 'contamination' of the groundwater has been detected but extended exposure to highly contaminated groundwater is unlikely. Consequently although the sensitivity of the receptor is high the effect has been

evaluated as low and therefore the overall effect has been assessed as not significant.

Soil Gas

10.34 Excavations may need to be open for a period of time. This has the potential to allow soil gases, including carbon dioxide, to build up leading to asphyxiation risks that may affect construction workers who enter any excavations. The recent Site Investigation did not record elevated concentrations of soil gases and therefore the risk of soil gas is low and assessed as not significant.

Construction of Vertical Shafts

10.35 The Project involves the excavation of a vertical shaft that has the potential to create a pathway between the near-surface, slightly contaminated soils and groundwater present within the deeper aquifer. Based on the current information the effect has been assessed as potentially significant.

Fuel Storage and Refuelling Areas

10.36 On-site maintenance and re-fuelling points are likely to be required during construction. This will necessitate the storage of fuels and lubricants in above ground storage tanks. Storage of fuels in the spur tunnel is not planned.

10.37 Accidental spillage of materials stored on site including fuel/oil storage and waste material could have an adverse effect, in both the short- and long-term, if discharged onto land. Hydrocarbon oil (petrol and diesel) and inorganic contaminants associated with construction activities can adsorb onto silt particles and represent a long term source of contamination for controlled waters.

10.38 Due to the storage of hazardous materials such as fuels on the Site and the potential effect on sensitive receptors the potential effect has been assessed as potentially significant.

Car Parking and Plant Machinery Storage Areas

10.39 The worksite will have limited car parking and machinery storage areas. Both are likely to produce some surface water runoff containing small amounts of hydrocarbon oils from occasional sump seal leakage. On site maintenance of machinery may also be undertaken and may involve the accidental release of small volumes of lubricants.

10.40 The severity of pollution from car parking and machinery storage is not as significant as that from the accidental spillage of fuels, and appropriate construction management will be employed. The effect is, therefore, assessed as not significant.

Operational Impacts

10.41 The operational activities related to the Project with a potential to affect human health and controlled waters from ground contamination land includes the following:

(i) Presence of any residual contaminated soil where it is likely to be exposed to future users of the Site;

(ii) Presence of residual made ground, which are potential sources of soil gas, which could accumulate in the tunnel or headhouse; and

(iii) Vehicle parking areas.

Residual Contaminated Material

10.42 Prior to the construction a full assessment of contaminated soils will be undertaken. Based on the results of the recent Site Investigation it is likely that some contaminated material will be removed for off-site disposal during the construction works, any remainder will be capped by the Project works. On this basis the effect any residual contaminated soils is expected to be not significant.

Soil Gas

10.43 Following completion of construction, sources of soil gas may remain. The Site Investigation did not reveal elevated concentrations of soil gas. However, this does not discount that the Site may require additional gas control measures, to those included in the scheme. The headhouse is, however, not permanently manned. On this basis the effect any soil gas present is expected to be not significant.

Vehicle Parking Areas

10.44 Following construction there will be designated car parking areas for operational purposes designed with surface water drainage systems incorporating suitable interceptor systems prior to discharge. Overall the volume of traffic associated with the headhouse operation is small, once normal operational activity commences, it is anticipated that there will be no more than an average of 24 vehicular movements or less in a year. The effect of any vehicle parking is expected to be not significant.

Mitigation and Residual Effects

10.45 In general significant adverse construction effects identified above can be mitigated by complying with Health and Safety legislation and current good practice guidance for construction. The appropriate use of Personal Protective Equipment (PPE) will reduce effects from most of the contact, and inhalation issues. The EA has produced pollution prevention guidance notes (PPGNs) and Pollution Prevention Guidelines (PPGs) concerning a number of potentially contaminative activities. CIRIA has also produced a number of documents concerning site practices. The Project EMP will include reference to the relevant information.

10.46 Should bonded or fibrous asbestos be identified within the construction phase, an Asbestos Management Plan should be produced and implemented. The plan will identify additional precautions that will be required in dealing with asbestos. These measures may include but not be limited to additional PPE (e.g. full respirators) and controlled/restricted areas.

10.47 To prevent exposure and/or asphyxiation risks to workers, air monitoring for volatile compounds as well as carbon dioxide and methane will be undertaken to assess atmospheric conditions in confined spaces. Assuming constant atmospheric monitoring is undertaken in potentially confined spaces the effect to construction workers should remain at not significant.

10.48 The construction methodology, which will include the grouting of any voids around the annulus of the shaft, should result in no contamination pathways to sensitive groundwater and therefore the risk should be reduced to not significant. As described in Chapter 2 additional works can be used to provide a cut-off to reduce the risk of pathway creation.

10.49 As the results of the Site Investigation identify the presence of some slight contamination of near surface soils then an assessment of the risk will be undertaken using guidance provided by the EA entitled the 'Piling and Penetrative Ground Improvement Methods on Land affected by Contamination: Guidance on Pollution Prevention' – Environment Agency, 2001. Assuming the most appropriate method is utilised then the effect should remain as not significant.

10.50 To mitigate the effects of hydrocarbon storage the use of best practice construction for environmental management as required by the EA will be employed and included in the Project EMP and relevant sub-plan (see Chapter 2, Description of the Project); the effect should be reduced to not significant.

Summary and Conclusions

10.51 The assessment has identified that slight ground contamination is likely to be found at the Site.

10.52 Construction activities have been assessed using a 'source-pathway-receptor' methodology to establish potential significant effects.

10.53 The potentially adverse environmental effects of soil contamination and fuel spillage from the Project's construction are considered to be not significant, when readily mitigated by using best practice environmental management standards. The potentially significant effect from the creation of vertical pathway due to the shaft construction is also able to be mitigated using techniques outlined in EA guidance.

ENVIRONMENTAL STUDY

CHAPTER 11
BUILT HERITAGE

11. BUILT HERITAGE

Introduction and Scope of Topic

11.1 This Chapter assesses the likely significantly effect of the proposed Project on built heritage assets within 250 m of the St Pancras Substation site, and the impact of the proposed Project on the historic environment. Possible effects on built heritage from ground settlement are addressed in Chapter 7, Ground Settlement.

11.2 The assessment has been undertaken in accordance with the relevant government guidance on the historic environment and draws together readily available historic, topographic and land use information in order to clarify the potential effect of the Project in terms of built heritage.

Policies and Guidelines

Legislation

11.3 Legislation providing protection for buildings and areas of special architectural or historic interest is contained in the *Planning (Listed Building and Conservation Areas) Act 1990*. Sections 66 and 72 of the Act are of particular relevance. These note that special regard must be given, by decision makers in the planning process, to the desirability of preserving a Listed Building and/or its setting, and to the desirability of preserving or enhancing the character or appearance of a Conservation Area.

National Policy Guidance

11.4 The *'Draft Heritage Protection Bill'* [1] was published in April 2008. The Draft Bill and the '*White Paper on Heritage Protection in the 21st Century'* [2], which preceded it, propose that in future there will be a 'unified list' of heritage assets which will streamline and bring together the processes of designation, control, and management. For the time being, however, the policy framework affecting the historic environment is contained in Planning Policy Guidance Note 15 (PPG 15), see Annex BUI.01.

11.5 In considering any planning application for a project, the local planning authority will be guided by the policy framework set by government guidance, PPG 15, by current Development Plan policy and by other material considerations.

Regional Planning Policy

11.6 The relevant Strategic Development Plan framework is provided by the London Plan, Spatial Development Strategy for Greater London, Consolidated with Alterations since 2004 (Feb 2008). Policies relating to Built Heritage in London can be found in Annex BUI.01.

[1] Draft Heritage Protection Bill, Department for Culture Media And Sport, 2008.
[2] Heritage Protection for the 21st Cntury – White Pare, Department for Culture Media And Sport, 2007.

Introduction to Local Planning Policy

11.7 The relevant Local Plan (adopted 2006) policies relating to Listed Buildings, Conservation Areas, Registered Parks and Locally Listed Buildings within the LB of Camden have been considered and reviewed. For the purpose of conciseness however, Annex BUI.01 only re-produces those policies that are relevant in the context of the site location.

Approach to Assessment

11.8 This Chapter comprises an examination of evidence from the Greater London Sites and Monuments Record (SMR), local authority online sources, English Heritage's Images of England database as well as studying both the Site itself and historical maps.

11.9 The baseline historical data for the Site has been constructed using data held on the Greater London SMR. A historic map regression exercise has provided an overview of the proposed headhouse from the mid 18th Century until the present day. The result of this process can be found in Annex BUI.02.

Judging Significance

11.10 To assess predicted effects of the proposals upon cultural heritage assets, the visual sensitivity of built heritage receptors are first assessed. The sensitivity of the receptors is categorised as *High, Medium and Low*. This is determined in accordance with the assessed feature's designation (National, Regional and Local).

11.11 Assessing the magnitude of an impact depends on many factors and ultimately relies on a degree of professional judgement and interpretation. In addition the likely duration/frequency of the effect has been assessed.

11.12 Levels of significance have been determined by referring to the guidance set out in Annex GEN.02.

Description of Baseline Conditions

11.13 Site development plans, a historic map regression and historic designation maps and photographs of the setting of the site can be found in Annexes GEN.01, BUI.02 and BUI.03 respectively, and form the basis for the following descriptions.

11.14 There are 19 Listed Buildings found within 250 m of the Site (See Annex BUI.04). The majority are separated from the Site by streets of residential property and distanced by several roads. As such, not all have been listed within this Chapter. The most relevant of these listed building is the Grade I listed All Saints Greek Orthodox Church which dates to 1822 to 1824 (its boundary railings and gates are separately listed Grade II). The church faces out onto Camden Street, is a distance of approximately 80 m from the Site and is separated by the Lady's RC Primary School, the school playground, and a training centre. Approximately 20 m to the west of the Site is the Grade II listed terrace 82-90 Pratt Street, dating to the 19th Century.

11.15 The Site does not fall within a Conservation Area; however, the Regents Canal Conservation Area is located within 100 m of the Site.

Identification and Assessment of Likely Impacts and Effects

Direct and Indirect

11.16 There is no direct impact regarding built heritage at the Site through the construction and operation phases.

11.17 There is likely to be indirect short term impacts such as noise and visual intrusion during construction (as discussed in Chapters 6, Noise and Vibration and 12, Landscape and Visual Impact Assessment respectively) for the residential area to the south of the Site where a listed terrace is located.

11.18 There would be a low indirect impact on the views between the Site and adjacent listed buildings once the Site was operational.

Nature of Impact

11.19 The proposed headhouse will be located within a defined Site at the corner of Pratt Street and Royal College Street.

11.20 The construction environment will have a short-term impact on neighbouring properties on the Pratt Street including the listed number 82-90; however this will be limited to the construction phase and therefore of a temporary nature and not significant.

11.21 The Site falls outside the setting of the Grade I listed All Saints Greek Orthodox Church. The church faces out onto Camden Street, is a distance of approximately 80 m from the Site and is separated by the Lady's RC Primary School, and associated open playground, and a training centre. The training centre would block any views from the listed church as well as the open space of the school. It is unlikely that there would be views taking in the proposed headhouse and the church together from any direction at the ground level.

11.22 The immediate setting of the listed terraces at 82-90 Pratt Street is restricted to the street and neighbouring houses. The wider setting in terms of arc of vision could be said to include the school, training centre, and the listed church. The site falls slightly outside this setting and the headhouse will be well enclosed by the Site boundary. However, partial views from the listed building will be obtainable, seeing the Site boundary and vehicles using the temporary Site access on Pratt Street at a minimum. The permanent Site boundary will allow very limited views of the headhouse within, and the training centre and the school's gate will continue to dominate views around the Site. As such this indirect impact to 82-90 Pratt Street is considered low and not significant.

11.23 Being located at the edge of the block, next to several existing substation structures, the proposed structures are highly unlikely to dominate any views from neighbouring structures or be seen from listed buildings on other streets at a distance. The headhouse is designed to fit into the surrounding industrial buildings.

Magnitude of Change

11.24 The magnitude of change upon built heritage due to the Project is assessed as low. The Project would cause a very minor change to the views to/from 82-90 Pratt Street but this would not alter the integrity or setting of the listed buildings. There is no direct impact or effect to any built heritage.

Significance of Effects

11.25 The visual sensitivity of receptor is high, magnitude of change is low and frequency is high.

11.26 Overall there are no likely significant impacts of effects.

Mitigation and Residual Effects

11.27 No mitigation is considered necessary for the short term effects deriving from the construction on the grounds that these will not materially affect any adjacent listed buildings and be temporary in nature. Ensuring the permanent Site boundary is built with an appropriate choice of materials and colours will reduce any impact of the Project on the listed buildings. No other mitigation measures are necessary as the proposed headhouse will have negligible impact on the area.

11.28 There will be no significant residual effects upon built heritage at the Site.

Summary and Conclusions

11.29 This Chapter identifies the built heritage assets within 250 m of the St Pancras Substation Site, and the impact of the proposed Project on the historic environment.

11.30 The impacts identified from the construction phase at the Site will be low and not significant. These are limited to the short term, and will diminish when the operational phase begins.

11.31 Mitigation strategies relating to boundary treatments will be implemented to reduce the level of any potential impacts.

11.32 The impacts assessed from the operational phase are therefore assessed as being not significant.

ENVIRONMENTAL STUDY

CHAPTER 12
LANDSCAPE AND VISUAL IMPACT ASSESSMENT

12. LANDSCAPE AND VISUAL IMPACT ASSESSMENT

Introduction and Scope of Topic

12.1 This Chapter considers the potential impact on landscape and visual amenity from the Project at the St Pancras Substation Site. The purpose of the assessment is to understand the character of the existing landscape and how the area is perceived visually. These studies then provide a baseline against which potential impacts likely to arise from construction and operation of the Project can be predicted and the significance of effects assessed.

12.2 Much of the guidance and designations noted below refer to the term "landscape" which is the term used to encompass the whole external environment in both urban and rural contexts. Within this assessment the term "townscape" is also used to describe the interrelationship between buildings, open spaces, plants and other built elements which combine to create the urban landscape.

Policies and Guidelines

12.3 The documents from which the relevant statutory planning policies relating to the landscape and visual impact assessment have been taken are outlined below:

(i) PPS1: Delivering Sustainable Development;

(ii) PPG17: Planning For Open Space, Sport and Recreation;

(iii) The London Plan, Greater London Authority; and,

(iv) London Borough of Camden's Unitary Development Plan, June 2006.

Relevant Planning Designations

12.4 The existence of designations is an indicator of the relative "value" of the landscape at a national, regional, or local level.

Conservation Areas

12.5 Conservation Areas are designated under the Planning (Listed Building and Conservation Areas) Act 1990, as, "*areas of special architectural or historic interest, the character or appearance of which it is desirable to preserve or enhance*". The designation of a Conservation Area requires the planning authorities, when considering planning applications, to pay, "*special attention to the desirability or preserving and enhancing the character and appearance of the conservation area*".

12.6 There is a Conservation Area within approximately 100 m of the Site.

Historic Parks and Gardens

12.7 English Heritage is enabled by Section 8C of the Historic Buildings and Ancient Monuments Act 1953 to compile the Register of Parks and Gardens of Special

Historic Interest in England. The Register is a non-statutory designation used by English Heritage to identify parks or gardens of particular historical value.

12.8 There are no Historic Parks or Gardens within 250 m of the Site.

Statutorily Listed Buildings and Scheduled Monuments

12.9 Listed Buildings are those recognised as being of "special architectural or historical interest", placed on a statutory list compiled by the Secretary of State for Culture, Media and Sport under the Planning (Listed Buildings and Conservation Areas) Act 1990, on advice from English Heritage. Details of listed buildings are described in Chapter 11 of this ER.

Tree Preservation Orders

12.10 A Tree Preservation Order (TPO) is an order made by a local planning authority in respect of trees or woodlands, in accordance with Part VIII of the Town and Country Planning Act 1990, as amended. The principal effect of a TPO is to prohibit the cutting down, uprooting, topping, lopping, wilful damage, or wilful destruction of trees without the local planning authority's consent. The cutting of roots, although not expressly covered, is potentially damaging and so, in the Secretary of State's view, also requires the local planning authority's consent.

12.11 There are no TPOs within 250 m of the Site.

Metropolitan Open Land

12.12 Metropolitan Open Land (MOL) is any strategic open land within the urban area which is significant to London as a whole, or to part of London stretching across several boroughs. The MOL designation is unique to London.

12.13 There is no MOL within 250 m of the Site.

Areas of Special Landscape Character/ Areas of Local Character

12.14 Areas designated as Areas of Special Landscape Character or Areas of Local Character are those areas with outstanding or unique local landscape characteristics which warrant special attention in recognition of their contribution to the Borough's overall environmental quality.

12.15 There are no Special Landscape Character Areas within 250 m of the Site.

Green Chains/ Green Links

12.16 Green Chains are connections between open spaces, usually designated for their nature conservation value, as well as providing public access, recreation, including linear footpath walks, breaks in the urban area, and delineation of separate communities.

12.17 There are no Green Chains within 250 m of the site.

Existing Guidelines

12.18 Guidance on good practice in landscape and visual assessment is given in the "Guidelines for Landscape and Visual Impact Assessment" (Second Edition, 2002)[1], published jointly by the Landscape Institute and the Institute of Environmental Management & Assessment. This assessment follows the general principles given in the Guidelines (referred to here as the GLVIA). This guidance has been supplemented by the guidance relating to landscape and visual assessment contained within Volume 11 of the "Highways Agency's Design Manual for Roads and Bridges" (DMRB)[2].

12.19 Reference has also been made to the guidance relating to landscape assessment given in The Countryside Agency and Scottish Natural Heritage's "Landscape Character Assessment: Guidance for England and Scotland" (2002), and to the guidance relating to townscape (urban landscape) assessment which has been developed by the Department for Transport in its web-based Transport Analysis Guidance (WebTAG), the Townscape Sub-Objective TAG Unit 3.3.8.

12.20 Additional guidance relating to the identification of streetscape character areas is given in Transport for London's Streetscape Guidance publication (Version 1, 2005).

12.21 Although currently there is no specific townscape assessment guidance, in general the same principles of data collection and landscape and visual impact assessment are applicable to urban schemes. The main areas of difference are:

(i) The urban setting: the physical structure, sequence of spaces, and built forms of different scales and uses;

(ii) Important buildings or monuments, and their settings, giving rise to a greater overlap between cultural heritage and landscape assessments;

(iii) The enhanced importance of open green spaces and of vegetation in urban areas;

(iv) Large numbers of people living and working in close proximity to the Project;

(v) Large numbers of viewers within publicly accessible areas, in contrast to rural areas where public rights of way and public access land often represent the key public viewpoints; and,

(vi) Well known or locally important or "strategic" views.

12.22 As the methodology given in the GLVIA is non-specific, the following methodology has been developed for the purposes of this assessment. Key references and data sources used in preparing this methodology are included in Annex LAN.01.

[1] Guidelines for Landscape and Visual Impact Assessment, Second Edition, Landscape Institute and the Institute of Environmental Management & Assessment, 2002.
[2] Highways Agency's Design Manual for Roads and Bridges, Highways Agency, 2008.

Approach to Assessment

Project Area

12.23 The area for the landscape and visual assessment relates to the visual envelope, i.e. the area of land from which there is a view of any part of the Project. Any changes in visual impact will occur within the visual envelope.

12.24 In order to determine the visual envelope, a wider area was initially considered, which set the context for the project area, and assisted in developing the landscape character assessment. The assessment then concentrated on those areas from which the project would be visible or within which there would be potential effects on the existing character.

12.25 An initial desk study supported by field survey identified elements and characteristics which contribute to the urban character of the townscape and create the particular sense of place of the area. The field survey further identified the condition and "value" of the existing landscape.

12.26 The field survey was undertaken in April 2008, before the majority of deciduous trees had come into leaf. This enabled a "worst case" visual impact to be assessed, and assumptions were then made with regard to the seasonal effects of vegetation, for example, in screening views.

Potential Receptors and Sensitivity

Townscape Receptors

12.27 Receptors within the urban landscape include physical features that may be directly affected by the Project, such as the hierarchy of routes and spaces, pedestrian links, key buildings and areas of open space, street trees, and local vistas. Receptors also include characteristics, such as scenic quality, cultural associations, and sense of place. Together these components interact to create the character of the townscape.

Townscape Quality

12.28 The assessment of baseline townscape quality is based on the scale in Table 12.01 below.

Table 12.01: Townscape Quality

Quality Classification	Criteria
High quality	• very attractive townscape with distinctive, unusual or unique features; • strong or unique sense of place; • distinct features worthy of conservation; • townscape promotes social interaction, few conflicts between traffic and pedestrians; • well-maintained condition; • occasional or no detracting features.
Good	• attractive townscape with some distinctive features; • locally distinctive layout, possibly degraded by unsympathetic development; • potential for enhancement; • some features worthy of conservation; • fair condition; • some detracting features.
Ordinary	• typical, commonplace townscape with limited local distinctiveness; • indistinct or ambiguous character; • degraded condition; • some features worthy of conservation; • some detracting features.
Poor	• poor scenic quality; • unsympathetic scale, lacking structure, with incongruous and conflicting elements; • pedestrian movement may be inhibited by major transport barriers; • lack of management and intervention has resulted in degradation; • frequent or extensive detracting features; • may comprise disturbed or derelict land requiring treatment.

Source: Adapted from example provided in GLVIA Second Edition

Landscape Sensitivity

12.29 In accordance with the GLVIA, the sensitivity of the urban landscape is based on its value, quality, and the degree to which it can accommodate change of the type and scale proposed.

12.30 The existence of designations is an indicator of the relative "value" at a national, regional, or local level. Liaison with consultees also highlights perceptions of value.

12.31 Table 12.02 below details the descriptions which are used in this assessment as the basis of determining sensitivity of the urban landscape:

Table 12.02: Townscape Sensitivity

Sensitivity	Criteria
High	• high or exceptional quality, importance and rarity; • recognised on national or international scale; • limited potential for substitution, susceptible to physical disturbance.
Medium	• good quality, high or medium importance and rarity; • recognised on regional scale; • limited potential for substitution, some capacity for change;
Low	• ordinary quality, low or medium importance and rarity, • recognised on local scale; • tolerant of some change and capable of enhancement.
Negligible	• poor quality, very low importance and rarity; • unrecognised landscape; • tolerant of substantial change and capable of restoration.

Source: Adapted from DMRB 11.2.5 (HA 205/08)

Visual Receptors

12.32 Visual receptors comprise occupiers of residential properties; public buildings including work places and recreational buildings; and outdoor locations with public access, such as footways, public rights of way and areas of public open space.

Visual Sensitivity

12.33 The sensitivity of visual receptors can be categorised as shown in Table 12.03 below (as derived from advice contained in the GLVIA).

Table 12.03: Visual Sensitivity

Sensitivity	Categories
High	Users of outdoor recreational facilities, including public rights of way; Occupiers of residential properties.
Medium	People travelling through the area on transport routes
Low	People at their place of work (commercial/ retail premises)
Negligible	Occupiers of industrial premises

Source: Derived from GLVIA Second Edition

Magnitude of Impacts

Townscape Impacts

12.34 The GLVIA advises that the magnitude of impact is generally based on the scale or degree of change to the resource, the nature of the effect and its duration (permanent or temporary; whether reversible). The criteria in Table 12.04 below have been used in this assessment:

Table 12.04: Magnitude of Townscape Impact

Magnitude	Criteria
Major	• loss of resource and or quality and integrity of townscape character; severe damage to key characteristics, features or elements (Adverse); • large scale or major improvement of resource quality; extensive restoration or enhancement (Beneficial)
Moderate	• impact on the resource but not affecting the integrity; partial loss or damage to key characteristics of townscape character and features (Adverse) • improvement of townscape quality; benefit to, or addition of, key characteristics, features or elements (Beneficial)
Minor	• some change in townscape quality; partial loss to key characteristics, features or elements (Adverse); • minor benefit, or addition to, one or more key characteristics, features or elements (Beneficial)
Negligible	• very minor loss or detrimental alteration to townscape character and features (Adverse); • very minor benefit to or positive addition of one or more characteristics, features or elements (Beneficial)

Source: Adapted from DMRB 11.2.5 (HA 205/08)

Visual Impacts

12.35 The assessment of visual impact compares the quality of the scene without the Project, with that which would result if the Project were constructed. Two assessments of visual impact are made: the first considers the impact on a winter day in the commissioning year (2012) (Operational Year); and the second is based on the impact of the Project in the fifteenth year after commissioning (the Design Year). In this assessment the Design Year assessment is based on a winter day, to enable direct comparison with the Operational Year assessment. The assessment takes into account all proposed planting except off-site planting by agreement.

12.36 The magnitude of visual impact uses the definitions as detailed below in Table 12.05 below.

Table 12.05: Magnitude of Visual Impact

Magnitude	Criteria
Major	• where the Project would cause a significant deterioration or improvement in the existing view with the development becoming a dominant visual component in the view. (Adverse or Beneficial).
Moderate	• where the Project would cause a noticeable deterioration or improvement in the existing view but the overall structure and balance of the view is maintained (Adverse or Beneficial).
Minor	• where the Project would cause a barely perceptible deterioration or improvement in the existing view e.g. if the development is only partially visible or can be seen entirely but only with difficulty. (Adverse or Beneficial).
Negligible	• where there would be no discernible deterioration or improvement in the existing view.

Source: Adapted from DMRB 11.3.5 and GVLIA Second Edition

Significance Criteria

12.37 The overall landscape and visual effects depend not only on the magnitude of the change but also on its permanence and on the sensitivity of the location or receptor. The assessment process aims to be objective as possible and to describe the changes factually. However, the assessment of landscape and visual impacts inevitably requires a degree of subjective analysis, especially in the evaluation of the sensitivity of the landscape resource. This need for a combination of objective and professional subjective analysis is recognised by the GLVIA.

12.38 The criterion detailed below in Table 12.06 has been used in this assessment; overall effects can be either beneficial or adverse.

Table 12.06: Overall Landscape and Visual Effects

Sensitivity	***Negligible***	Neutral	Neutral or Low	Neutral or Low	Low
	Low	Neutral or Low	Neutral or Low	Low	Low or Moderate
	Medium	Neutral or Low	Low	Moderate	Moderate or High
	High	Low	Low or Moderate	Moderate or High	High or Very High
	Very High	Low	Moderate or High	High or Very High	Very High
		Negligible	***Minor***	***Moderate***	***Major***
Magnitude					

Source: Adapted from DMRB 11.2.5 (HA 205/08)

12.39 Evaluation of whether the effects of the Project are significant or not is based on the overall effect and its duration (e.g. whether temporary or permanent), together with professional judgement, as set out in Annex GEN.02.

Description of Baseline Conditions

12.40 St Pancras Substation is located within the London Borough of Camden. The Site is not covered by any landscape designation, although the Regents Canal Conservation Area is located within 100 m.

12.41 Regents Canal Conservation Area abuts the northern side of Lyme Street, to the north of the site. The area was designated in 1974 and extended in 1981. London Borough of Camden's draft conservation area appraisal describes the key features:

"The Regents Canal, part of the Grand Union Canal, winds its way through the London Borough of Camden on its way to joining the River Thames, forming a corridor of unique character. It is an important feature of historic and visual interest in the landscape and following the decline of traditional canal-related commercial activities has been increasingly recognised as a valuable resource for water-based leisure activities, for its ecological value and its potential for transportation and informal recreation. It is the Council's aim to conserve and enhance the existing character of the canal and to improve its potential for recreation, transportation, and wildlife. The ever changing views, the variety and contrast of landscape elements and the informal relationship between buildings and canal contribute more than any other factors to the character of the canal."

12.42 The protected Strategic View corridor from Parliament Hill to St Paul's lies within 50 m to the east of the Site.

12.43 The Site is located at the junction of Pratt Street and Royal College Street. The surrounding land uses and building types vary considerably, producing a mix of landscape character areas of variable quality.

12.44 Abutting the western boundary of the Site is the Camden Training Centre building, which whilst currently vacant has a distinctive art deco styled façade to Pratt Street, which together with the scale and massing of the building gives it a strong and individual visual presence.

12.45 Generally, the western side of Royal College Street can be classed as the Residential townscape type.

12.46 The southern side of Pratt Street and western side of Royal College Street are characterised by an elegant three-storey Georgian terrace of stone and London stock brick. The northern side of Pratt Street has a greater mix of building types including Lady's RC Primary School and the four-storey brick Camden Training Centre, which lies adjacent to the Site. The quality of this townscape type is assessed, on average, as Good.

12.47 The eastern side of Royal College Street is generally of poorer quality townscape. The townscape type here is Commercial, Industrial and Retail, and includes a modern brick warehouse "Plumb Center", which forms part of a commercial centre, as well as a Euromaster garage, and Parcelforce depot to the south of the junction. The Site itself can also be classed in this townscape type. The southeastern corner of the junction is dominated by a four-storey Victorian red brick "Golden Lion" pub. The quality of this townscape type is assessed, on average, as Ordinary.

12.48 The proposed headhouse Site appears as a gap in the urban built environment. The site is enclosed by a close-boarded fence of around 4 m in height, and detracts from the quality of the local townscape.

Existing Visibility

12.49 Although the Site is located on a prominent corner location, the visibility of the Site is actually limited by the presence of large commercial buildings. The extent of the ZVI is shown in Annex LAN.02.

12.50 The main views towards the Site are obtained from the residential terrace on the southern side of Pratt Street, and from the Golden Lion pub. Views from properties further north on Royal College Street are limited by the eastern boundary wall to the substation, which is some 6 m in height.

12.51 The site is visible from a very small part of the Regents Canal Conservation Area, i.e. from Royal College Street to the north of the Site.

12.52 The townscape character types are shown in Annex LAN.03 and illustrative photographs in Annex LAN.04.

Identification and Assessment of Likely Impacts and Effects

12.53 The construction works may give rise to visual impacts and the temporary degradation of the townscape. Construction of the Project would be characterised by the appearance of engineering work in progress.

Impact on Townscape

12.54 The construction phase works include the building of a temporary compound occupying the southern part of the existing substation Site. The appearance of the compound would be similar to the existing Site, which appears as a gap in the urban built environment, and is enclosed at present by a close-boarded fence. There would be negligible impact to the townscape during the construction phase in comparison with the existing situation.

12.55 In terms of permanent impacts during operation, the proposed headhouse building would be located within the existing substation Site, at the corner of the junction of Pratt Street and Royal College Street. The proposed building would be sited immediately adjacent to the Camden Training Centre on Pratt Street.

12.56 The proposed headhouse would replace the existing timber hoardings along the boundaries of Pratt Street and Royal College Street, to provide an improved street frontage at the junction. The existing high brick boundary wall, which extends further north along the frontage of Royal College Street, would be retained. The height of the proposed headhouse will be at 7.82 m and the scale allows the vertical order of the existing building to be repeated in the new, which will assist with the effective assimilation of the headhouse within Pratt Street. The appearance of the proposed headhouse building would be in keeping with the adjoining Camden Training Centre and has been designed to match the art deco style of Centre.

12.57 The existing quality of the Commercial, Industrial and Retail townscape type is Ordinary and it has a Low sensitivity to change. The strength of effect on this townscape character area is assessed as neutral.

12.58 The Residential character area is of Good townscape quality, of Medium sensitivity to change. The introduction of a new headhouse building adjacent to this character area would have no direct impact, although there would be a negligible indirect impact due to the intervisibility. The strength of effect is assessed as low beneficial.

12.59 There would be no impacts on the setting of the Regents Canal Conservation Area, since the proposed building would only be visible from Royal College Street, and such views would be screened for the most part by the existing substation boundary wall.

12.60 The overall strength of effect on landscape is assessed as Neutral. The effect would be permanent and not significant as the building takes account of the character and appearance of the local environment at this location.

Impact on Views

12.61 Visual impacts for residential properties and places of work are described and assessed in detail in the Visual Impact Schedule given in Annex LAN.05. Views of the Site from ground level during the construction phase would appear similar to existing views of the Site, which is bounded by site hoardings. Machinery and stockpiles of materials would be visible within the compound from the upper floors of the properties located on the southern side of Pratt Street and there would be a negligible temporary adverse impact on such views.

12.62 Once construction is completed, the main views towards the site are obtained from the residential terrace on the southern side of Pratt Street, and from the Golden Lion pub. The impact on views from these receptors is assessed as Moderate Beneficial (opening year and year 15), since the new building would replace the existing Site hoardings in these views.

12.63 Views from properties further north on Royal College Street are limited by the eastern boundary wall to the substation. Only the top part of the proposed headhouse building is likely to be visible above the boundary wall, at a distance, and the impact is assessed as negligible in both the opening year and year 15.

12.64 Overall visual effects would be of Low-Moderate strength and permanent duration, and would thus be not significant.

Mitigation

12.65 No significant adverse effects have been identified for the Project so mitigation measures as such are not needed.

Summary and Conclusions

12.66 The existing Commercial, Industrial and Retail townscape around the St Pancras Substation Site is generally classed as Ordinary and it has a Low sensitivity to change. The Residential character area is of Good townscape quality, of Medium sensitivity to change.

12.67 Overall, the strength of effect on this townscape character area is assessed as neutral.

12.68 There are no significant adverse effects as a result of the Project.

ENVIRONMENTAL STUDY

CHAPTER 13
ECOLOGY, ARBORICULTURE AND NATURE CONSERVATION

13. ECOLOGY, ARBORICULTURE & NATURE CONSERVATION

Introduction and Scope of Topic

13.1 This Chapter assesses the likely effect of the Project at the St Pancras Substation Site on ecological, arboricultural and nature conservation resources.

13.2 The potential likely significant effects associated with the spur tunnel itself have been scoped out of this assessment as it will be at a depth (exceeding 30 m) and is therefore unlikely to have an ecological impact.

13.3 Site survey information, such as that information obtained from a desk study, consultation with statutory bodies and other agencies and from searches of other available records, has been used as part of this assessment.

13.4 The assessment identifies habitats and signs of potential for species of conservation interest and biodiversity importance within a 500 m radius (zone of influence) of the Site and assesses the significance of the Project upon them. This zone of influence was considered commensurate with the urban context of the Project and the confined nature of the works proposed.

13.5 Assessment of effects on trees as an ecological and amenity resource has also been included in the assessment with particular regard to useful life and retention value.

13.6 Throughout this chapter it is assumed that no significant changes to groundwater levels or subsidence are anticipated, as discussed in Chapters 9, Hydrogeology and Chapter 7, Ground Settlement.

Policies and Guidelines

13.7 The documents from which the relevant statutory planning policies relating to the ecology assessment have been taken are outlined below:

(i) PPS 9: Biodiversity and Geological Conservation;

(ii) Planning for a Better London, Mayor of London;

(iii) The London Plan, Greater London Authority (including amendments); and,

(iv) London Borough of Camden Unitary Development Plan, 2006.

13.8 Of particular relevance to ecology and nature conservation is PPS 9, which seeks to integrate, where possible, biodiversity and nature conservation within development objectives. PPS 9 states that the planning system has a significant part to play in meeting the Government's international commitments and domestic policies for habitats, species and ecosystems as laid out in 'Working with the Grain of Nature: a

biodiversity strategy for England'. The key principle (iv) of PPS 9 states that: "*The aim of planning decisions should be to prevent harm to biodiversity*" and "*planning decisions should aim to maintain and enhance, restore or add to biodiversity*."

13.9 Within "Planning for a Better London, July 2008," the Mayor of London makes it a priority to ensure the planning system:

(i) "*protects and enhances open spaces. The Mayor will use his planning powers to prevent inappropriate development of open spaces and the Green Belt*"; and to,

(ii) "*do all it can to protect and promote trees and woodland. In particular, the Mayor wants to see the planning system used to secure the planting of trees in new developments*."

13.10 Both the Early and Further Alterations have now been incorporated into the London Plan (consolidated with alterations since 2004) and published February 2008. Of particular relevance to ecology within this proposal are the following policies:

(i) Policy 2A.1 '*Sustainability Criteria'* emphasises the importance that all proposals should take account of the impact on natural recourses, optimising the use of vacant land, using a design led approach, taking account of infrastructure, incorporating green infrastructure and engaging the local community.

(ii) Policy 4A.11 '*Living Roofs and Walls*' sets out that major developments where feasible should incorporate living roofs and walls that incorporate sustainable urban drainage, enhance biodiversity, improve appearance and adapt to climate change.

(iii) Policy 4B.1 '*Design principles for a compact city*', indicates that development proposals need to ensure that they maximise the potential of sites, are sustainable, and respect local context, character and the natural environment.

13.11 The London Borough of Camden Unitary Development Plan (2006) contains several policies relevant to this chapter. Several policies from the 2002 UDP have been saved. Of greatest relevance is:

(i) Policy N6: '*In assessing planning applications, the Council will expect development schemes to have considered conserving and enhancing biodiversity, including by creating wildlife habitats'*.

13.12 Relevant legislation relating to protected species of potential relevance to this Site and invasive species, are provided in Annex ECO.01.

Approach to Assessment

Desk study

13.13 A desk study was undertaken to gather existing information for the Site. This involved using data from local record centres (Greenspace Information for Greater London (GiGL)) and using data resources on the internet, including the National Biodiversity Network (NBN), Multi-Agency Geographic Information for the Countryside (MAGIC) and Natural England. Interpretation of aerial photography was also used to supplement understanding of site conditions.

Surveys

13.14 A Phase 1 Habitat survey[1] (Annex ECO.02) of the Site was undertaken by two qualified and experienced ecologists (April 2008), in accordance with best practice. This is a standard method of survey and gives an overview of key habitats, wildlife corridors and the likely presence of species of conservation concern. This survey was carried out at an appropriate time of year (Spring 2008) and so the survey was not limited by seasonality issues.

Assessment

Receptors and their Sensitivity

13.15 Ecological receptors and resources that should be considered within an ecology impact assessment include:

(ii) Statutory wildlife sites, including internationally protected Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Ramsar sites and nationally protected sites such as Sites of Special Scientific Interest (SSSIs);

(iii) Non-statutory wildlife sites, such as Local Nature Reserve (LNR); Sites of Borough Importance (SBI); Sites of Local Importance (SLI) and Sites of Metropolitan Importance (SMI);

(iv) Statutory protected species under legislation (the Wildlife and Countryside Act, 1981 (as amended); the Conservation (Natural Habitats & Co.) Regulations 1994; the Bird Directive (Annex ECO.01), 2003);

(v) Other habitats and species which are prioritised in the UK Biodiversity Action Plan (UKBAP) and Local BAP (LBAP);

(vi) Non-designated habitats or wildlife corridors of local interest; and

(vii) Trees with ecological or amenity value, especially mature and semi-mature trees which, by virtue of their age, are not easily replaced, and may also support protected species such as bats and breeding birds.

[1] Joint Nature Conservation Committee, 2003: Handbook for Phase 1 Habitat Survey – A technique for environmental audit.

13.16 In general, the higher the level of protection given to an ecological receptor, the greater the importance attached to impacts and it is more likely that there will be a significant effect. For example, the effect of an impact on a habitat, site or species afforded protection under European or international legislation would be of greater significance than the same impact on a receptor afforded protection under county, borough or metropolitan designations or policies.

Magnitude of Impacts

13.17 The magnitude of impact describes the scale or degree of impact on the receptor, the nature of the impact and its duration (permanent or temporary; whether reversible).

13.18 Impacts on ecological resources may result from disturbance brought about by work during the construction phase and loss of land to the shaft and headhouse building. Impacts relate to damage to habitats and trees, including tree roots within appropriate root-protection zones, and disturbance to faunal species.

13.19 In assessing the magnitude of an impact, it may be possible to state what area or proportion of a habitat or what numbers or proportion of a population might be affected. In some situations, however, it may not be possible to be precise about the extent of the impact on the integrity of the ecological resource.

Significance Criteria

13.20 The significance of impacts upon ecological receptors is determined by the magnitude of the impact on the receptor, the value of the receptor and the frequency of change.

13.21 The criteria within Annex GEN.02 has been used in this assessment and overall impacts can be either positive or negative.

13.22 Greater importance is generally assigned to large scale impacts. Temporary disturbance for a short period generally results in an impact of lower consequence than disturbance over a longer duration. Permanent loss often results in effects of significance.

13.23 For the purposes of this assessment, professional judgement was used to determine the magnitude of impacts on ecological receptors and resources and, hence, the significance of effects.

Description of Baseline Conditions

13.24 No protected species are recorded on or near the Site. There are no TPOs within 250 m of the Site.

13.25 There are no statutory sites near the Site but one locally designated, non-statutory site (London's Canal SMI) is located 70 m away.

13.26 London's Canal supports a wide range of aquatic flora, amongst which are found a number of locally uncommon species, including narrow-leaved water plantain (*Alisma lanceolatum*). Many of the waterside plant species grow on the brickwork and banks of the Canal, including several locally rare species. The Canal also supports an important invertebrate assemblage, many fish species and many breeding waterfowl.

13.27 The Site itself comprises a fenced compound where the main habitat is hardstanding. The brick buildings within the Site have flat roofs, are of various storeys and have vents and gaps providing possible access / egress points for roosting bats. There are two trees inside the Site boundary contained within the additional compound area, on Royal College Street. Further scattered broadleaved trees are present in the surrounding streets.

13.28 Two stands of Japanese knotweed were observed on the eastern Site boundary, at two locations. The first stand is located to the south of the Site by the street and at the corner of a brick wall. The stand is approximately 0.4 m x 0.4 m x 1.7 m high. The second stand is found inside the fenced compound, at the opposite end of the brick wall from the first stand. It comprises a few plants approximately 0.1 m x 0.4 m and 1.7 m high.

Identification and Assessment of Likely Impacts and Effects

Impacts during the Construction Phase

13.29 The construction works could give rise to temporary and permanent impacts on ecological receptors. Impacts from the following potential activities have been assessed:

(i) Site clearance works, including any removal of vegetation;

(ii) Construction of shaft, headhouse and temporary compound including office and parking area, as well as the construction of access routes;

(iii) Temporary stockpile storage areas;

(iv) General construction activities and plant movements; and

(v) Use by heavy good vehicles of access routes to sites.

13.30 The following potential impacts on ecological receptors have been considered for the construction phase of this project:

(i) Tree felling, demolition of buildings and removal of vegetation on site resulting in loss of habitats;

(ii) Fragmentation of dispersal corridors; and

(iii) Increasing noise, dust and lighting levels.

13.31 The proposed works during the construction phase within the Site include building a headhouse on hardstanding within an existing, operational compound, with access gained through the existing substation, and will not include the felling of any trees or the demolition of any buildings.

13.32 The two broadleaved ornamental trees present inside the additional compound area, on Royal College Street, will not be felled and no works will affect their root protection zone. These trees are considered to be of a medium sensitivity, however as there will be no impact (and as a result no frequency or duration), there will be no significant effects on this receptor.

13.33 As the building identified as having potential to support roosting bats will not need to be demolished, no impacts are anticipated on bats at the Site arising from any demolition works. There may be impacts on bats potentially present arising from noise, dust and disturbance but these will be negligible as construction work will mostly be confined to the normal working day and therefore no major above ground working at night under associated floodlighting will be undertaken.

13.34 On this basis, no impacts are anticipated on any ecological receptors as a result of these works.

13.35 Japanese knotweed is known to be present on the Site boundary. Japanese Knotweed is listed as a noxious weed and it is an offence to knowingly spread the plant. Any disturbance to a stand can cause it to spread, as it can propagate from small fragments of vegetative material.

13.36 No impacts are anticipated on broadleaved trees in the surrounding streets on the basis that access routes for the site will not require any modification or and no existing roads will be need to be widened. If it is necessary to carry out any works on surrounding roads to provide required access to the Site, and if these works are in the vicinity of any trees, then these trees will need to be surveyed in order to enable the impacts of these works on the trees to be assessed.

Impacts during the Operational Phase

13.37 No adverse impacts are anticipated on any ecological receptors within the Site during the operational phase.

13.38 No adverse impacts on other ecological resources are anticipated outside the Site boundary during the operational phase and no impacts are anticipated on London's Canal SMI owing to the distance and lack of connectivity between the canal and the Site.

13.39 A 'Brown Roof' or 'Living Roof' is to be installed on the roof of the proposed headhouse building. The roof covering will consist of gravels of various sizes which will provide an ideal habitat for invertebrates, especially when vegetation becomes established through the process of natural seeding. Bird species will also benefit, such as insect eating birds including wagtail, and those that would find brown roofs to

offer suitable nesting habitat, such as the black redstart, a London Regional Biodiversity Action Plan species. Even though black redstart have not been recorded within the area (although a lack of records does not necessarily mean they are not present, merely that they have not been recorded), they rapidly colonise sites and could potentially use the enhancement at this Site as beneficial habitat to increase their range.

Assessment of Likely Impacts and Effects

13.40 A summary of the likely impacts and effects of the Project are presented below.

13.41 The two broadleaved ornamental trees are considered to be of a medium sensitivity, however as there will be no impact (and as a result no frequency or duration), there will be no significant effects on this receptor.

13.42 Japanese knotweed is known to be present on the Site boundary. The contractor will be required to work in compliance with legislation, either by avoiding it and/or eradicating it in accordance with the suggested eradication strategy set out in Annex ECO.03. If the Japanese knotweed is appropriately avoided then this would constitute a neutral effect. If the Japanese knotweed is appropriately eradicated, this would constitute a minor positive effect. Preference should be given to the remediation and eradication of Japanese knotweed as it has the capacity to grow through concrete, damage built structure and out-competes other vegetation.

13.43 The installation of a living roof on the headhouse within the Site will offer ecological enhancement by providing habitat suitable to support birds and invertebrates. A minor positive effect is anticipated if this is designed and installed appropriately with maintenance undertaken as required.

Mitigation measures

13.44 The works will not affect any trees as it is assumed that no trees will be felled or their root zones be impacted upon as part of the Project.

13.45 The trees on the boundary will be retained and protected by following British Standard (BS) 5837.2005 '*Trees in relation to construction*' in order to minimise impacts on the trees. No works, or limited works, either within the Site or for associated access will take place within root protection zones, in accordance with BS 5837.2005.

13.46 If trees are to be felled, a bat emergence survey will be carried out prior to works for any trees that have the potential to support foraging bats. Removal of any trees and shrubs will be undertaken outside the bird breeding season (March – July inclusive).

13.47 Impacts of construction lighting upon foraging bats that may potentially be present may be reduced by selecting low level light, using low-pressure sodium lights and ensuring that light spill is restricted downwards with backguards to prevent lighting surrounding areas.