(e) the particular needs of wheelchair users and other people with mobility difficulties, visually impaired people, children, elderly people and other vulnerable users;

(f) the benefits of facilities for leisure cycling, particularly to less experienced cyclists;

(g) the need for safe road crossings for pedestrians and cyclists;

(h) the width of footways and cycle routes;

(i) the need to thoroughly reinstate all highway surfaces following works to the highway or damage from construction work;

(j) the need for secure cycle parking in accordance with the Council's Parking Standards, shower facilities and lockers at workplaces, and cycle storage in dwellings; and

(k) planning obligations that secure measures directly related in scale and kind to the development.

4.9 T4 - Public transport

(i) A - Public transport and development

(a) Where development creates a need for additional public transport capacity, the Council will only grant planning permission for that development when arrangements for satisfactory provision have been made. The Council will consider:

- the need for developments to ensure that public transport capacity is available to cater for the public transport demand they create on- and offsite;
- the effect of the proposal on existing public transport services and facilities, and the demand created for new services and facilities, including bus priority measures and signalling, bus-stops, tram-stops, boarding areas, shelters, seating and timetable information;
- the ease, safety and convenience of pedestrian movements to and around boarding points;
- the accessibility of the services and facilities to people with mobility difficulties;
- the need to provide for public transport vehicles on the site; and
- the need to prevent severance of the bus network.

(ii) B - Provision for public transport

(a) The Council will use planning conditions and planning obligations to ensure that, where planning permission is granted, the development will provide for the public transport needs it generates if they cannot be met by existing transport or planned transport provision. Where development is to be served by planned services or service improvements with a boarding point within walking distance, the Council will require a development to contribute to those elements directly related in scale and kind to the development.

(b) Contributions may be sought to fund:

- improvements to the network and frequency of public transport services, interchanges and the passenger environment;
- developing and improving traffic management and signalling schemes that give priority to buses, pedestrians and cyclists;
- making public transport systems fully accessible for all, including people with disabilities;
- developing and enhancing travel information services;
- enhancements to relieve congestion on the London Underground network and stations within Camden;
- establishing and re-establishing additional boarding points and stations for public transport services;
- enhancing local rail and tram networks serving Camden.

4.10 T5 - Transport interchanges

(i) The Council will not grant planning permission for development that would prejudice the safe and efficient operation of transport interchanges. The Council will grant planning permission for transport interchange facilities where it considers the proposals to maximise travel benefits and cause minimum environmental harm. The Council will consider:

- access to the facilities for pedestrians, cyclists, public transport (including bus priority measures), taxis and picking-up / setting-down by private vehicles;
- secure cycle parking;
- provision for the needs of people with disabilities and mobility difficulties;
- passenger circulation and waiting facilities;
- co-ordination of arrival / departure of different services;
- provision of timetable information; and
- provision of refreshments, toilets, showers and baby changing facilities.

4.11 T6 - Maintenance and storage of public transport equipment

(i) The Council will not grant planning permission for development that would prejudice long-term public transport provision through the loss of facilities for the storage and/or maintenance of public transport vehicles and equipment. Wherever possible, the Council will identify and safeguard existing and proposed facilities to support public transport services.

4.12 T7 - Off-street parking, city car clubs and city bike schemes

(i) The Council will only grant planning permission for development that complies with the Council's Parking Standards.

(ii) Where off-street parking is permitted in accordance with the standards, the Council will encourage the provision of electric vehicle charging equipment.

(iii) The Council will encourage the provision of city car clubs and city bike schemes as an alternative to private off-street parking.

4.13 T8 - Car free housing and car capped housing

(i) The Council will grant planning permission for car free housing in areas of onstreet parking control. The Council will particularly seek car free housing or car capped housing in the following locations:

- the Central London Area;
- the King's Cross Opportunity Area;
- Town Centres; and
- other areas within Controlled Parking Zones that are easily accessible by public transport.

(ii) For car free housing and car capped housing, the Council will:

- not issue on-street residential parking permits;
- use planning obligations to ensure that future occupants are aware they are not entitled to on-street parking permits; and
- not grant planning permission for development that incorporates car parking spaces, other than spaces designated for people with disabilities, and a limited number of spaces for car capped housing in accordance with Council's Parking Standards.

4.14 T9 - Impact of parking

(i) A - Impact of on-street parking

The Council will not grant planning permission for development that would harm on-street parking conditions or add to on-street parking where existing on-street parking spaces cannot meet demand.

(ii) B - Impact of off-street parking

The Council will not grant consent for off-street parking that it considers causes harm to highway safety, requires detrimental amendment to existing or proposed Controlled Parking Zones, or harms the setting of a building or the surrounding area. The Council will consider:

(a) any likely obstruction of the pavement;

(b) sightlines for emerging vehicles;

(c) the impact on demand on Controlled Parking Zones and on-street parking;

(d) the contribution the existing forecourt, garden, trees and means of enclosure make to the visual appearance of the area;

(e) the cumulative visual impact of on-street and off-street parking in the area; and

(f) the nature and extent of any landscaping, surfacing or other improvement works which may be proposed to offset any adverse visual impact.

4.15 T10 - Public off-street and contract parking

(i) The Council will only grant planning permission for public off-street parking where it is supported by a Transport Assessment, shown to meet a need in the area that cannot be met by public transport, and the development is subject to planning obligations that:

(a) control the pricing structure, the users and the layout of the parking spaces; and

(b) secure removal of parking spaces in response to public transport improvements; or

(c) secure its use for a city car club

4.16 Alternative use of existing car parks

(i) The Council will grant planning permission for the redevelopment of existing car parking for alternative uses provided that:

(a) provision for cycles, people with disabilities, service vehicles, coaches and taxis is maintained in accordance with the Council's Parking Standards;

(b) the parking removed is surplus to needs for public car parking, operational business parking and residents' parking.

4.17 T12 - Works affecting highways

(i) The Council will only implement or grant consent for works that affect or create highway land where it considers the proposals:

(a) prioritise road safety and minimise accident risks;

(b) comply with the recommendations of a safety audit;

(c) maximise travel benefits;

(d) minimise harm to the environment; and

(e) avoid harm to the road network.

(ii) In consultation with Transport for London where appropriate, the Council will consider whether the works:

(a) give priority to the safety of vulnerable road users, including children, elderly people, cyclists, people with mobility difficulties and other pedestrians;

(b) address any history of traffic-related accidents on a site or area-wide basis;

(c) provide fully for the needs of emergency vehicles, pedestrians, cyclists, buses and people with mobility difficulties;

(d) meet any need for physical segregation between road users;

(e) meet the appropriate needs of residents and businesses in the affected area;

(f) are designed and controlled to respect the amenity, character and appearance of the affected area;

(g) encourage the use of the most appropriate roads by each form of transport and purpose of journey;

(h) discourage the use of local roads by through traffic;

(i) avoid direct vehicular access to the Transport for London Road Network (TLRN) and London Distributor roads, or provide purpose-designed junctions with them; and

(j) avoid the introduction of any additional capacity unless it is necessary to enable development to be accessed from an appropriate road, or a similar volume of traffic is removed from local roads.

4.18 T13 - Adoption of highways and other access routes

(i) The Council will require all new highways, roadways, footways, cycleways, footpaths and other access routes to be constructed to a standard it considers to be appropriate for adoption. The Council will seek the adoption, ownership and management of all such routes by the relevant Highway Authority as part of the public realm.

4.19 T14 - Local area transport treatments and traffic calming

(i) The Council will implement and give consent for local area transport treatments and traffic calming measures in appropriate parts of the Borough.

4.20 T15 - Taxis, minicabs and coaches

(i) The Council will:

(a) require development likely to attract significant numbers of coaches, taxis and minicabs to make adequate provision for access, boarding and alighting without obstruction of the public highway;

(b) require development that significantly increases travel demand to make adequate arrangements for access by taxi for people with disabilities;

(c) seek to provide on-street facilities for the parking, picking-up and settingdown of coach passengers at appropriate locations close to existing tourist attractions; and

(d) resist the emergence of unplanned coach terminals, particularly on-street.

4.21 T16 - Movement of goods

(i) A - Movement of goods by rail and water

(a) The Council will seek to protect and promote facilities for the movement of goods by rail and water, including facilities for transfer between road, rail and water, providing they will not harm the environment.

(ii) B - Movement of goods by road

(a) The Council will only grant planning permission for development that involves significant movement of goods vehicles provided that it:

- is designed to accommodate goods vehicles on site;
- it is located close to the Transport for London Road Network or London Distributor Roads; and
- does not involve movement of vehicles over 7.5 tonnes in predominantly residential areas.

Approach to Assessment

4.21 The methodology for the traffic assessment is based on the Guidelines for Environmental Assessment of Road Traffic[1] and the following activities have been carried out as part of the traffic assessment:

(i) A detailed site inspection of the road network at St Pancras Substation site in order to identify constraints, including road widths, pedestrian and cycle activity, and visibility;

(ii) The access arrangements were assessed to ensure that they were adequate for the size and type of vehicles anticipated[2];

(iii) Estimating traffic generated from the head-house and shaft construction;

(iv) Identification of traffic routes to and from the site for construction traffic, including consulting with highways officers; and

(v) The impact of construction traffic on the road network at the head-house.

Significance Criteria

4.22 The significance of the traffic effects associated with the Project has been assessed based upon the guidelines contained within Annex GEN.02. The Scheme for Assessment outlined in Chapter 3 has been assessed in its entirety.

4.23 Changes in traffic flows as a result of the Project (impacts over and above existing traffic) can be considered to be adverse or neutral depending on the sensitivity of receptors and the volumes of traffic. Traffic impacts could only be considered to be beneficial if there was to be a reduction in traffic which is unlikely. Sensitive receptors include people (residents, passers-by, workers etc) and designated sites (SSSIs, AONBs, conservation areas).

4.24 Changes can be characterised according to their strength, and the combination of their duration and frequency. Receptors / resources can be characterised according to their sensitivity to change, taking into account their value and resilience. Some changes in traffic flows will affect different receptors / resources to different degrees, and some receptors / resources may be affected by a range of potential changes. Significance is therefore judged in the context of a specific combination of change and receptor / resource.

4.25 When judging 'Significance' in terms of traffic impact for the Project the effects relate to the material impact of additional movements on the highway network. Significance is assessed both in terms of the overall growth in vehicular flows on preferred routes, and also in terms of the growth in proportion of HGV traffic on the roads used. The volume and proportion of HGV traffic is of special consideration as HGVs have a disproportionate effect on junction capacity and road surface condition. In addition to

[1] Institute of Environmental Management and Assessment, 1994
[2] AutoTRACK software employed to assess swept paths

this, significant effects are assessed in terms of the effects of construction traffic on residential streets.

Description of Baseline Conditions

The Road Network

4.26 Transport for London (TfL) Street Management is responsible for the main strategic road network in London; the TfL strategic road network is shown in Annex TRA.01. All non strategic roads (those not identified in the annex) are the responsibility of the individual London Boroughs to which they are situated.

4.27 The Transport Committee for London (TCL) administers weekend and night-time lorry bans within London. Bans exist in order to limit HGV movements on unsuitable roads, either to reduce noise and pollution associated with HGV movement through residential areas, or as a result of physical constraints that include road width, vehicle height and vehicle weight restrictions.

4.28 In addition to the above, HGV movements are also restricted on the majority of the road network within Greater London. All HGVs (over 18 tonnes) require a permit to travel during the following time periods on non-exempt roads:

(i) Monday - Friday: 9 pm – 7 am (including 9 pm Friday night to 7 am Saturday morning); and,

(ii) Weekends: Saturday 1 pm – 7 am Monday.

Traffic Flows

4.29 Traffic data has been obtained from relevant highway departments (TfL and Department for Transport databases) along principle routes to and from the St Pancras Substation site. The base traffic volumes are in Annual Average Daily Traffic (AADT[3]).

Table 4.01 - Traffic Flow on Links

Location	Highway Classification	Base Flow		
		AADT (2-way flows)	No. of HGVs	% HGV
A5202 Royal College Street	LB Camden 'A' Road	12471	434	3.48%
Saint Pancras Way	LB Camden 'A' Road	12001	766	6.38%

Source: TfL/DfT

Vehicle Types

4.30 Vehicle types influence the geometry and swept path necessary to safely complete manoeuvres.

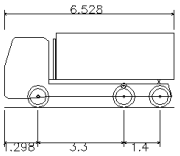
[3] AADT is the bi-directional traffic count representing an average 24 hour day in a year

4.31 Table 4.02 below outlines the types of vehicles expected during the construction period at the St Pancras Substation site.

Table 4.02 - Summary of Vehicle Type, Use and Distribution

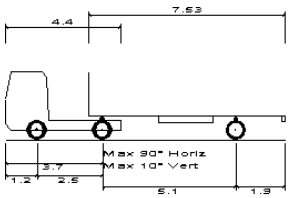
Vehicle Type	Use	Distribution
Rigid Heavy Goods Vehicle	Removal of Excavated Material	Strategic network to motorway
Small Articulated Vehicle	Plant, grout and other materials	Strategic network to motorway
Specialised Articulated HGV	Transport of Open Face Shield	Strategic network to motorway
Specialised Equipment Low Loader	Occasional delivery of plant	Strategic network to motorway
Vans	Plant service and other suppliers	Distributed to network
Cars	Management & supervision, visitors	Distributed to network

Source: Capita Symonds



Small Tipper	
Overall Length	6.528m
Overall Width	2.495m
Overall Body Height	2.877m
Min Body Ground Clearance	0.327m
Track Width	2.393m
Lock to Lock Time	6.00 sec
Kerb to Kerb Turning Radius	7.850m

4.32 The excavated material extraction is assumed to be undertaken by a regular 3 axle tipper. This is a standard vehicle and not subject to restrictions other than those imposed by Traffic Regulation Order (TRO) or areas of highway of limited width or height.



Small Articulated Vehicle	
Overall Length	10.700m
Overall Width	2.360m
Overall Body Height	3.604m
Min Body Ground Clearance	0.382m
Track Width	2.240m
Lock to Lock Time	6.00 sec
Kerb to Kerb Turning Radius	5.740m

4.33 The small artic is the second design vehicle anticipated for the Project. This is a generic vehicle type which is expected to be used for grout deliveries, plant movements and material deliveries.

Identification and Assessment of Traffic Impacts and Effects

Preferred Route for HGV Traffic

4.34 HGVs will access the site from the A503 Seven Sisters Road. Traffic will head southwest on the A503 until the A503 Camden Road. Traffic will turn left into St Pancras Way (one way southbound). At the junction with Crowndale Road vehicles turn right and right again into Royal College Street (one way northbound). The site entrance will be via the existing EDF access at the substation, involving a left turn from Royal College Street immediately after the junction with Pratt Street.

4.35 To exit the site vehicles will circulate around existing buildings and exit via the existing access off Georgiana Street. Vehicles will turn right into Georgiana Street and then pass straight across Royal College Street to Saint Pancras Way. At Saint

Pancras Way vehicles will turn tight towards Crowndale Road and then turn right and right again back into Royal College Street. Vehicles will then travel north passing the site entrance and rejoining the A503 Camden Road towards Severn Sisters, Tottenham Hale and using the A1055 through Pickets Lock, Brimsdown and Enfield Lock to the M25 (the reverse of the inbound route).

4.36 Discussions with officers of LB Camden confirmed that the route discussed above is their preferred option.

Traffic Generation and Distribution to Network

4.37 HGVs will remove excavated material arisings from the shaft sinking process and deliver construction materials including grout, rail and pipes. There will be van movements associated with plant services, materials and other construction items.

4.38 Table 4.03 below summarises the expected daily trip generations by type associated with the construction of the spur tunnel and shaft at the St Pancras Substation site.

Table 4.03 - St Pancras Shaft & Spur Site Vehicle Movements

Month/Period	0 to 3	3 to 6	6 to 9	9 to 12
Excavated Material Removal	21	21	0	0
Tunnel/Shaft Precast Rings	1	1	0	0
Plant/Grout Deliveries	2	2	0	0
Sundry Materials	10	10	8	9
Sub Total HGV	**34**	**34**	**8**	**9**
Cars/Vans	10	10	8	8
Total Vehicles	**44**	**44**	**16**	**17**

Source: Capita Symonds Ltd

4.39 The estimated traffic movements generated from the head-house construction in isolation are detailed in Table 4.04 below. The overall construction period for the head-house only is estimated to be 4 months, therefore the daily traffic movements have been pro-rated and are an average assessment. In addition, the number of HGVs associated with the head-house construction is based upon the estimated quantities of materials to be transported.

Table 4.04: Breakdown of Traffic Movements for Head-house Construction (over 4 month period)

Material	Quantities	No. of Vehicle loads	Vehicle Type
Steel frame construction (steel stanchions, castellated roof beams @ 3m ctrs)	80 tonnes	5	Small Articulated Vehicle
Foundations:			
Concrete Strip (0.6m x 1.5m deep x perimeter)	63 cu m		
Concrete Pads (2.0m2 x 8 No.)	16 cu m		
Sub Total: Foundations	79 cu m	16	Concrete Mixer (5 cu m/load)
Excavated material to tip (Assume Bulking Factor = 1.8)	142 cu m	16	Small Tipper (9 cu m/load)
Brickwork / stonework	54 pallets	4	Rigid HGV
Floor and roof structure		4	Rigid HGV
Plant		4	Rigid HGV
Total No. of HGV		**49**	
Sundry Materials		8	Light Van

Source: Capita Symonds Ltd

4.40 The total number of vehicle deliveries expected over the 4-month head-house construction period is 49 vehicles inbound to the site which equates, on average, to 1 vehicle per day.

4.41 Although traffic associated with the head-house construction could peak at 4 to 6 vehicles per day, it is the shaft construction that will produce the greatest impact with regards to construction traffic

4.42 The construction of the head-house cannot occur in parallel with the construction of the shaft, and cannot occur whilst the shaft is required to provide an insertion and extraction route for the plant constructing the spur tunnel.

4.43 Table 4.05 illustrates the impact of the forecasted HGV traffic on the existing highway network adjacent to the site. The table illustrates that in line with the significance criteria described earlier within the chapter, the effect of the forecasted HGV traffic during construction upon Royal College Street is Significant, whereas that upon St Pancras Way is Not Significant. This conclusion is reached qualitatively taking into account the relative magnitude of traffic effects, the duration of the effects, and the sensitivity of the receptors at both locations.

Table 4.05 - Link Flows and Impacts

Location	Highway Classification	Base Flow			Additional HGVs (2-way per day)	New % HGV	Increases in Traffic		Significance Effects				Comments
		AADT (2-way flows)	No. of HGVs	% HGV			Total traffic (AADT)	HGV traffic increase	Traffic Impact overall	Duration / Freq.	Sensitivity of Receptors	Overall Qualitative Significance Judgement	
A5202 Royal College Street	LB Camden 'A' Road	12471	434	3.5%	68	4.0%	<1%	15.7%	low	medium	high	Significant	Mandatory Cycle Route Adjacent to Site and Footpath Diversions Required
Saint Pancras Way	LB Camden 'A' Road	12001	766	6.4%	68	6.9%	<1%	8.9%	low	low	medium	Not Significant	Predominantly Commercial Frontage

Source: Capita Symonds

Site Access Consideration

4.41 Although larger vehicles could be employed on the surrounding road network, the tight circulation route within the site prevents their use. The vehicles tested represent a practical maximum size vehicle that can be employed at the St Pancras site.

4.42 Both types of vehicles will satisfactorily enter the site off Royal College Street and exit onto Georgiana Street at the location of the existing EDF vehicular access. See Annex TRA.02a and b for evaluation of the swept path of these vehicles.

4.43 The constricted nature of the site means that there is limited opportunity to hold multiple vehicles for loading or unloading. There is the potential for this to impact on the surrounding road network as waiting vehicles queue for entry.

4.44 The cycleway that runs on the west side of Royal College Street is a mandatory cycleway. Vehicles entering the site will have to cross this cycleway, the potential conflict between site vehicles and vulnerable road users is one of the reasons the receptors in this area are considered sensitive leading to the potential for significant impacts.

4.45 Footways adjacent to the site will need to be diverted during the shaft site works, which again impacts on vulnerable road users for whom diversions can cause a substantial increase in journey distance.

Abnormal Load Routes

4.46 The spur tunnel will be excavated using semi-mechanised techniques. This is likely to be an excavator mounted in an open face tunnelling shield. This together with its back up equipment will have to be delivered to and removed from site.

4.47 It is anticipated that the above plant and equipment will be delivered using specialist low loaders. The site has insufficient room to allow these vehicles to enter and leave. These activities have the potential to cause an impact on the local road network although their frequency and duration are such that the impact is only significant at the time the equipment is delivered or removed.

Mitigation

4.48 As a result of the vehicle access circulation and egress proposals minor kerb modifications are proposed on Georgiana Street to prevent the HGV's mounting the kerb and causing damage to the footway. These are detailed in Annex TRA.03.

4.49 On Royal College Street a 3-metre section of the kerb that separates the nearside traffic lane from the mandatory cycle lane is required to be temporarily removed to avoid the HGVs entering the site either having to encroach on the offside lane or mount the dividing kerb causing damage as they enter the site. The modification is detailed in Annex TRA.03.

4.50 To ensure safety standards are maintained. Banksmen will be present during construction of the shaft and head house to protect cyclists and pedestrians from vehicles turning into the site off Royal College Street.

4.51 A temporary crossing facility is proposed on Pratt Street to provide safe means to cross. The use of this with the two existing crossings of Royal College Street will provide a safe walking route from Pratt Street to Camden Road for the duration of the works.

4.52 Upon completion of the works the original footways will be reinstated.

4.53 A traffic management plan will be agreed with the local and highway authorities. The traffic management plan will address hours that construction traffic movements should seek to avoid, restrictions on lorry routes and permitting, parking, and related issues.

4.54 The traffic management plan will ensure that the arrival of vehicles at the site is timed such that there is sufficient space within the site to hold these vehicles, and load or unload them as appropriate to avoid vehicles waiting on the highway.

4.55 The delivery of the tunnelling shield for the excavation of the spur tunnel will be timed to coincide with an off peak period when use of Royal College Street by all road users is at a minimum. The actual time will be agreed between the contractor and the local highway authority.

4.56 At this agreed time one lane of Royal College Street will be closed to traffic and pedestrians and cyclists will be directed around the site allowing the low loaders with the spur tunnel equipment to stop on carriageway in the nearside lane of Royal College Street and be offloaded from the roadside directly into the compound by means of a crane located within the compound.

Conclusions

4.57 The A503 Seven Sisters Road/Camden Road is a strategic route towards central and inner London and this route will be used as part of the strategic transport route for the Project.

4.58 When considering the current traffic volumes and the additional HGV traffic the overall change is minimal due to the high levels of AADT traffic in the area and therefore the Project overall is not considered to cause a material change.

4.59 Temporary closure of the footway on Pratt Street and Royal College Street adjacent to the site is required to provide adequate safe working space for the duration of the construction. As a result pedestrian diversions will be implemented using existing controlled crossing points and a temporary crossing which will provide appropriate mitigation in the short term ensuring there are no significant impacts.

4.60 There will be a traffic management plan prepared by National Grid's works contractor to address hours that construction traffic movements should seek to avoid, restrictions on lorry routes and permitting, parking, and related issues.

4.61 The movement of construction vehicles (>18 tonnes) on roads not exempt from the London Lorry Control Ban will require the main contractor to obtain permits from London Lorry Control.

ENVIRONMENTAL STUDY

CHAPTER 5
AIR QUALITY

5. AIR QUALITY

Introduction and Scope of Topic

5.1 This Chapter assesses the likely significant effects of the Project on air quality and air quality sensitive receptors.

5.2 The assessment considers both Project construction, primarily relating to increased traffic movements and construction dust; and operational emissions from the headhouse. The potential for dust nuisance at sensitive receptors within a 250 m radius of the Site is assessed. The assessment also considers the impact upon local air quality from use of the proposed haulage route as set out in Chapter 4, Traffic and Transportation.

Policies and Guidelines

5.3 A large number of polices and guidelines exist for the assessment of air quality. The majority of these are implemented through the Local Authority and are as a result of overarching European and National Policy. The policies described below are those that have informed the approach to the assessment.

EU Air Quality Framework Directive

5.4 The EU Air Quality Framework Directive (96/62/EC) sets the structure under which the UK must monitor and report air quality. Several daughter directives have also been introduced which control the ambient concentrations of pollutants within member states. With the advent of each daughter directive, UK legislation has been updated to reflect these changes including target dates for the UK compliance with directive concentration controls, as detailed below.

UK Air Quality Strategy

5.5 The Air Quality Strategy (AQS) for England, Wales, Scotland and Northern Ireland, published by the Department of Environment, Food and Rural Affairs (Defra) in July 2007, provides a *"clear, long-term vision for improving air quality in the UK and offers options for further consideration to reduce the risk to health and the environment from air pollution"*. One of the ways in which the Defra seeks to achieve air quality improvements has been by the establishment of ambient air quality objective values for nine named pollutants, details of which can be found in Table 1 in Annex AIR.01.

5.6 Two of these pollutants are currently recognised as being of most concern, due to their nationwide levels being closest to the AQS objective values, namely nitrogen dioxide (NO_2) and fine particulates (PM_{10}). These both arise primarily from the combustion of fossil fuels, although there are other important sources of particulates such as wind blown particles from arable land or aggregate stockpiles. The other pollutants within the AQS are unlikely to be breached unless there is a local industrial source.

Environment Act 1995

5.7 Under Part 4 of The Environment Act 1995 (the Act), all local authorities in England and Wales are required to assess air quality in their district. The Act requires a three-stage review of air quality to determine which areas will not meet the AQS objectives. Guidance for this process is contained in "Local Air Quality Management Technical Guidance (LAQM TG (03)) Review and Assessment of Air Quality" (Defra, 2003). A further description of the assessment process can be found in Annex AIR.01.

5.8 If objectives for any pollutants are not likely to be met where members of the public are exposed, the local authority must declare an Air Quality Management Area (AQMA). When an AQMA is established the local authority must draw up an Action Plan that aims to reduce pollutant concentrations within the AQMA to below the objective levels, and to monitor pollution levels within the AQMA.

5.9 Having performed the review and assessment of air quality detailed above, the London Borough of Camden has declared an AQMA for NO_2 and PM_{10}. This AQMA applies to the entire borough, including the St Pancras Substation site.

PPS 23: Planning and Pollution Control

5.10 Defra's 2004 Planning and Policy Statement (PPS) 23 contains planning guidance relevant to air quality, and states that:

(i) *"Any consideration of the quality of air and potential impacts arising from development, possibly leading to impacts on health, is capable of being a material planning consideration, in so far as it arises or may arise from or may affect any land use;"* and,

(ii) *"The planning system plays a key role in determining the location of development which may give rise to pollution, either directly or indirectly, and in ensuring that other uses and developments are not, as far as possible, affected by major existing or potential sources of pollution"*.

5.11 PPS 23 Appendix A: 'Matters for Consideration in Preparing Local Development Documents and Taking Decisions on Individual Planning Applications' details the matters of relevance to air quality which may be material in the consideration of individual planning applications where pollution considerations arise. These are also listed in Annex AIR.01.

London Low Emission Zone, 2008

5.12 The London Low Emission Zone (LEZ)[1] applies to all roads and some motorways within the Greater London Area. The LEZ operates for 24 hours a day and requires owners of older, diesel-engine lorries and large vans (over 1,205 kg unladen weight) that do not meet or exceed the Euro III standard[2] to pay a £200 daily charge.

[1] Cleaner Air for Greater London – Mayor of London, Transport for London, 2008

[2] The emissions standards for the Low Emission Zone (LEZ) are based on Euro standards. These define the limits for exhaust emissions for new vehicles sold in European Union (EU) member states, and which vehicles must comply with when manufactured.

5.13 The charge is likely to apply to specialist vehicles that may be used during the demolition and construction phase of a Project, including refuse collection vehicles, road sweepers, concrete mixers, tippers, extended-cab dual purpose pickups and some light utility vehicles.

Approach to Assessment

Choice of Dispersion Model

5.14 This assessment uses the Highways Agency's Design Manual for Roads and Bridges (DMRB) methodology to calculate concentrations of traffic-related pollutants at sensitive receptors. The DMRB methodology provides a means to determine whether a project causes a significant change in pollutant concentrations. The methodology has developed a screening tool in the form of an Excel™ spreadsheet that allows the calculation of pollutant concentration at distances from the road centre up to 200 m away. The spreadsheet is designed to be used as a screening tool and the Defra LAQM.TG (03) recommends its use in determining whether further assessment within an area is required. For this assessment the DMRB Version 1.03c has been used.

Background Data for Modelling

5.15 In order to derive total concentration, background pollutant levels are required for input into the DMRB spreadsheet. Background concentrations are a mixture of natural levels of pollutants within the atmosphere along with contributions from man-made sources. Background concentrations have been obtained from the national background concentration maps contained in the National Air Quality Archive[3]. These maps are published at a 1 square km resolution, and take into account major sources within the square as well as outside influences.

5.16 The 2004 base maps for NO_2 and their adjustment factors published in LAQM.TG (03) have been used to provide background values. The values and road sections used are shown in Annex AIR.02.

Road Traffic Data

5.17 The inputs to the traffic model were given as Annual Average Daily Traffic (AADT) flows based on the 24 hour flows provided, as presented in Annex AIR.02. Due to the implementation of improved technology and the replacement of older, more polluting vehicles in the national fleet with newer, less polluting vehicles, background concentrations and vehicle emissions in future years should not be greater than those predicted within this assessment providing that the base assumptions of the modelling remain valid[4].

NO_x to NO_2

5.18 Emissions and concentrations are modelled as NO_X as the atmospheric chemistry makes it difficult to separate the various forms of nitrogen oxides. The AQS objectives, however, are given in terms of annual and short-term (hourly) means of

[3] The UK Air Quality Archive, DEFRA, 2007, www.airquality.co.uk
[4] Design Manual for Roads and Bridges (DMRB) Volume 11, Highway Agency, 2003

NO_2. For this assessment, NO_2 concentrations have been calculated using an empirical approach in accordance with the recommended practice contained within LAQM.TG (03) and updated by Air Quality Consultants Ltd in 2007. This can be found in Annex AIR.02.

Significance Criteria

5.19 The impact of the Project on local air quality is assessed using the guidance published by Environmental Protection UK (EPUK) in the 2006 update of *Development Control: Planning for Air Quality*. This is consistent with the general approach to significance set out in Annex GEN.02, in that it combines a consideration of the strength and duration/frequency of changes in air pollution levels with the sensitivity of the receptors that may experience those changes.

5.20 The dust assessment has been undertaken in accordance with the Best Practice Guidance produced by the Greater London Authority and London Councils (2006). Deposition rates vary considerably, and depend on many factors. Therefore a qualitative assessment has been undertaken. This takes into account the geology at the St Pancras Substation site and the likely deposition distances of dust particles, taking into account the distance of sensitive receptors such as housing, schools, hospitals and residential / nursing homes.

Consultation

5.21 The London Borough (LB) of Camden has been consulted with regards to the assessment methodology used by email correspondence with Gloria Esposito (LB Camden Air Quality Policy Officer) on the 25th April 2008. LB Camden expressed approval of the assessment methodology.

Description of Baseline Conditions

5.22 The LB Camden has several automatic monitoring and diffusion tube sites from which the background air quality can be assessed. The data for the automatic monitoring stations was taken from the London Air Quality website[5], while the diffusion tube data is from the Camden air quality monitoring website[6]. The results for both of these types of monitoring site are listed in the Tables 1 to 4 in Annex AIR.03.

5.23 Nearly all of the monitoring stations show NO_2 levels exceeding the AQS annual mean objective (40 µg/m^3) and many show exceedances of the hourly mean objective (200 µg/m^3 which is not to be exceeded more than 18 times a year). These results demonstrate the generally poor air quality in London, particularly around busy roads.

5.24 PM_{10} is less of a prevalent issue with regards to the Project as the majority of monitoring sites meet the AQS objectives (40 µg/m^3 annual mean and 50 µg/m^3 hourly mean, not to be exceeded more than 35 times in a year). However, a Kerbside automatic monitoring station is located near the A41 Finchley Road, has previously recorded elevated levels of PM_{10}. This monitoring station is located at Ordnance Survey Reference 526650, 184460.

[5] www.londonair.org.uk, March 2008
[6] www.camdenair.aeat.com, Feb 2009

Identification and Assessment of Likely Impacts and Effects

Construction Impacts

5.25 Based on experience of comparable construction projects in London, the primary concern regarding air quality impacts from construction and demolition processes on site is from dust nuisance. The likelihood of the occurrence of a nuisance from dust depends on the distance of a receptor from the source of the dust. Sensitive receptors up to 250 m from the site of dust generation may experience nuisance from poorly controlled sites. For a dust nuisance to occur at receptors within this range the weather should be dry, wind speeds should generally be greater than 5 m per second and blowing towards the receptor from the dust generating activity.

5.26 The St Pancras Substation site is considered to be a low risk site (less than 1,000 m^2), as defined in the Best Practice Guidance produced by the Mayor of London[7].

Receptors

5.27 There are a number of sensitive receptors within 250 m of the Site, including residential dwellings along Georgina Street located adjacent to the site egress point and, with dwelling densities varying from 52 to 57 dwellings per hectare[8] and the Our Lady's RC Primary School and St Michaels Primary School (see Annex GEN.01). Potentially sensitive features surrounding the Site are shown in Table 5.01 below. For traffic flows, receptors are considered to be located 10 m from the centre of the road; most receptors are further from the road than this.

Table 5.01: Sensitive Receptors

Shaft Site		
	50 m	**250 m**
St Pancras Substation	Our Lady's RC Primary School Residential	St Michaels Primary School; Residential

Source: www.statistics.gov.uk

Dust

5.28 The geology of the ground being excavated will have a large influence on the amount of dust produced. The spur tunnel is expected to be in the Lambeth Group, but possibly some of the spur tunnel route and shaft will be in London Clay which has a greater potential to cause dust nuisance. Dry clay particles are extremely small (<2 µm[9]) and can therefore become airborne easily and disperse over a wide area. (Details of the geology can be found within Chapter 9, Hydrogeology). However, dust nuisance resulting from construction processes should not result in significant effects with a best-practice dust mitigation strategy applied and included within the Project Environmental Management Plan (EMP).

[7] Best Practice Guidance: The Control of Dust Emissions from Construction and Demolition – Mayor of London, Nov 2006
[8] www.statistics.gov.uk
[9] Rural Development Service Technical Advice Note 52, Defra 2006

Construction Traffic

5.29 The exhausts from construction road traffic add to certain pollutants that are listed in the AQS. Those pollutants of interest are NO_2 and PM_{10}. The comparison between the predicted NO_2 and PM_{10} concentrations 'without construction traffic' and 'with construction traffic' in a base year of 2006 is shown in Tables 5.02 and 5.03 below. Receptors are considered to be 10 m from the centre of the road, as this is where the greatest impacts of traffic changes will be felt. As emissions are predicted to decrease in future years as a consequence of improved engine technologies permeating the vehicle fleet[10], this modelling approach gives higher values than would be predicted in future years.

Table 5.02: 2006 DMRB Modelled NO_2 Concentrations at Sensitive Receptors ($\mu g/m^3$) Without and With Construction Traffic

	NO_2 annual mean		
Receptor name[11]	**Without**	**With**	**% Difference**
A503 Camden Road (nr Royal College St)	49	49	0.2
A5202 Royal College Street	43	43	0.3

Modelled results are rounded to the nearest integer
Absolute differences are shown for illustrative purposes

Table 5.03: 2006 DMRB Modelled PM_{10} Concentrations at Sensitive Receptors ($\mu g/m^3$) Without and With Construction Traffic

	PM_{10} annual mean			24 hour Exceedences of $50\mu g/m^3$ (35 allowed)		
Receptor name	**Without**	**With**	**% Difference**	**Without**	**With**	**Difference**
A503 Camden Road (nr Royal College St)	29	29	0.1	25	25	0.1
A5202 Royal College Street	27	27	0.1	19	19	0.1

Modelled results are rounded to the nearest integer
Absolute differences are shown for illustrative purposes

5.30 Air quality along many roads in London is already poor, with receptors along nearly all roads used by the Project traffic experiencing levels above AQS objectives for NO_2. This is reflected in the modelled results. The effect of the increase in traffic due to the Project leads to an increase in NO_2 of up to approximately 0.2 to 0.3 % indicating that construction traffic will have an *extremely small* impact on local air quality at worst. Increases in NO_2 concentrations as a result of construction traffic are therefore predicted to have a *slight adverse* impact on local air quality, at worst and are considered not significant.

5.31 The existing PM_{10} levels in the area achieve the AQS objectives. With extremely small increases predicted due to construction traffic, the overall impact on PM_{10} levels is likely to be negligible and therefore not significant.

[10] Design Manual for Roads and Bridges (DMRB) Volume 11, Highway Agency, 2003
[11] Road locations have been used to represent sensitive receptors because For traffic flows, receptors are considered to be located 10 m from the centre of the road; and, these roads represent the highest density of sensitive receptor.

Operational Impacts

5.32 In an emergency, such as a tunnel fire, the proposed tunnel and headhouse ventilation system can be reversed, as described in Chapter 2, Description of the Project. Such events are not frequent and not a significant effect.

5.33 In some cases Sulphur hexafluoride (SF_6), which is the gas used to insulate electrical switchgear, can leak and potentially cause adverse environmental effects. However, SF_6 will not be present at this Site and therefore is not considered any further in this assessment.

Mitigation

5.34 To comply with National Grid's policy, the Project EMP requires mitigation to be put in place to limit and control dust release. Measures will include solid boundary hoarding, regular inspections of dust sources, wheel washes, and those practices noted in the Mayor of London's "*Best Practice Guidance: The Control of Dust Emission from Construction and Demolition".*

Residual Impacts

5.35 With the implementation of a dust management strategy, the dust generated by construction will be at a level where any potential effects are likely to be not significant.

Summary and Conclusions

5.36 An air quality assessment has been undertaken for the proposed headhouse and associated shaft and spur tunnel at the St Pancras Substation site.

5.37 Baseline and future predicted road traffic flows have been used to model air pollution levels. The modelled results for the 2006 baseline indicate that all the roads used by construction traffic are already over the AQS objectives for NO_2 but are below the AQS objective levels for PM_{10}.

5.38 The construction traffic is not predicted to have a significant effect on the air quality levels at sensitive receptors along the chosen routes.

5.39 With the implementation of a dust management strategy, the dust generated by construction and demolition processes will be at a level where any effects are not likely to be significant.

5.40 The normal operational effects of the Project on air quality should be negligible and therefore not significant.

ENVIRONMENTAL STUDY

CHAPTER 6
NOISE AND VIBRATION

6. NOISE AND VIBRATION

Introduction and Scope of Topic

6.1 This Chapter assesses the likely significant effects of noise and vibration emissions from the Project. In this context, noise is unwanted sound that has the ability to disrupt normal activities such as work, study and sleep. Vibration may become an issue when it is perceptible by people or in some cases audible, as it is reradiated from structures. In some cases excessive vibration may cause damage to buildings.

6.2 The noise and vibration emissions are considered:

(i) During construction; and,

(ii) During the operation of the spur tunnel, shaft and headhouse.

6.3 During construction, it is expected that there will be a period of higher noise emissions from the Site, including construction traffic noise. Methods to mitigate noise are described in a later section of this Chapter.

6.4 Once operational, the likely noise emissions will primarily be those associated with mechanical ventilation (variable extraction fans).

Policies and Guidelines

6.5 Legislation relevant to construction noise (including noise emissions from plant and machinery) is generally reflected in local authority policies drawing on guidance coming from British Standards where appropriate. Relevant legislation and policies considered in this assessment are summarised in Annex NOI.01.

Standards and Guidance

6.6 There is a wide range of standards and guidance available in relation to both construction activities and the operational noise of the headhouse and associated ventilation shaft and spur tunnel, including:

(i) Planning Policy Guidance 24 (PPG 24) *Planning and noise;*

(ii) BS 4142:1997 *Method for rating industrial noise affecting mixed residential and industrial areas*;

(iii) BS 8233:1999 *Sound insulation and noise reduction for buildings – Code of practice*;

(iv) The World Health Organisation (WHO) document *Guidelines for Community Noise*;

(v) The series BS 5228 *Noise and vibration control on construction and open sites*;

(vi) Defra: *Update on noise database for prediction of noise on construction and open site*s - July 2006;

(vii) BS 6472:1992 *Guide to evaluation of human exposure in buildings (1 Hz to 80 Hz)*; and,

(viii) BS 7385-2:1993 *Evaluation and measurement for vibration in buildings — Part 2: Guide to damage levels from groundborne vibration.*

Approach to Assessment

6.7 Based on experience of comparable construction projects in London, the likely impacts associated with the construction and operation of the Project have been identified as follows:

(i) Demolition noise, excavation noise and construction noise affecting people;

(ii) Transport noise affecting people;

(iii) Vibration from tunnel construction affecting buildings and/or people; and

(iv) Plant noise emissions from headhouse mechanical services affecting people.

6.8 Baseline measurements (a combination of continuous monitoring and manned measurements) were made in positions representative of the nearest noise sensitive receptors at the Site. Where possible the measurements were taken at the closest noise sensitive premises to the proposed headhouse.

6.9 The impacts of noise and vibration have been assessed at the nearest noise and vibration sensitive receptors by considering the worst-case scenario for each of the potential impacts mentioned above. This takes into account the duration and frequency of changes in noise and vibration, and to the sensitivity of receptors (placing greater weight, for example, on residents than on short term workers or passers by).

6.10 Table 6.01 below details semantic criteria of rating noise for the assessment. These criteria are in line with the significance guidance in Annex GEN.02.

Table 6.01: Traditional semantic scale for describing noise impact

Noise Change (dB)	***Noise Impact / Strength***
< 3	Low
3 – 5	Moderate
6 – 10	High
> 10	Very High

Source: Based around IOA / IEMA working party noise impact assessment guidelines for environmental noise.

Description of Baseline Conditions

6.11 A baseline survey was undertaken to establish the lowest background noise level at the St Pancras Substation site. This was done in order to establish noise limits for emissions from mechanical plant. Full baseline noise survey results are shown in Annex NOI.02.

6.12 An attended night-time survey was undertaken between 23:00 hrs on 19th May 2008 and 07:00 hrs on 20th May 2008. The $L_{Aeq,5min}$ and $L_{A90,5min}$ values were measured on a fast time setting. Measurements were taken on a rotational basis throughout the night. Five minutes in each hour were recorded in order to obtain the noise profile for the Site.

6.13 The baseline noise survey was carried out at the St Pancras Substation. The main noise sources for this Site during the night were the 'hum' from the substation plant, road traffic and train noise.

6.14 Table 6.02 below, provides a summary of the results from the survey.

Table 6.02: Lowest Background Noise Measurements

Location	*Time (hrs)*	*Date*	$L_{A90,5min}$ *(dB)*
St Pancras Substation	0400	20-May-08	44

Notes: dB measurements are all re 2 x 10^{-5} Pa

6.15 In general, lower noise levels are expected during the night-time (2300 hrs to 0700 hrs) compared to the daytime (0700 hrs to 2300 hrs), and the lowest background noise levels are generally measured during the early hours of the morning. As a result, the survey was conducted during the early hours of the morning, as illustrated in Table 6.02 above.

Identification and Assessment of Likely Impacts and Effects

Tunnelling Operations

6.16 The construction of the spur tunnel may generate groundborne vibration from excavation machinery. In theory this could result in three types of impact to buildings (and their occupants), as follows:

(i) Vibration perceptible by the occupants;

(ii) Vibration re-radiated by the building as audible noise; and,

(iii) Possible cosmetic or structural damage to buildings.

6.17 In practice the spur tunnel will not pass under any residential dwellings and therefore the effect of vibration will be minimised.

6.18 Studies of the groundborne vibration from underground tunnelling[1] has shown that likely levels are typically well below the thresholds for structural or cosmetic damage. Typically they are no greater than that of the operation of a bulldozer. As such, no direct damage as a result of the spur tunnelling is expected.

[1] New, B. M., *Ground vibration associated with construction*

6.19 Impacts can sometimes arise from the passage of underground construction traffic (e.g. skips moving on non-isolated rails) resulting in vibration being re-radiated by structures (sometimes called ground borne noise). The short length of spur tunnel and its construction, as described in Chapter 2, Description of the Project, and not routing directly under dwellings will minimise any likely significant effects.

General Construction Noise

6.20 BS 5228 *Noise and Vibration Control on Construction and Open Sites* provides generic source noise data for various items of equipment used on open sites, along with methods for calculation of their respective noise levels at nearby noise sensitive properties.

6.21 The calculation method takes account of the duration of an activity per hour; the 'on-time', and the attenuation of sound due to the effects of distance, ground attenuation and barrier effects.

6.22 Detailed construction programmes will not be finalised until contractors have been appointed, and have fully devised their methods of working, the equipment needed and the construction schedule to be followed. Generic worst case scenarios have therefore been assessed based on previous experience and the data provided in BS 5228. Site working hours are set out in Chapter 2, Description of the Project.

6.23 In general during construction, noise disturbance is expected to arise from a range of activities including movement of materials and plant, and reversing alarms. It is assumed that most items of construction equipment will be in use for half of a typical construction day, with only few being used continuously (e.g. compressors and generators). Noise impacts will be minimised through the application of Best Practicable Means (BPM), as defined in Section 72 of the *Control of Pollution Act*, 1974 (CoPA) and BS 5228.

6.24 Worst case calculations are based on all construction activities at a site taking place at the nearest point to the closest noise-sensitive receptor throughout the working period, with the noise-sensitive *receptors having a dir*ect view of the works. In reality, where housing is screened from a direct view of the works as in this case, and activities are distributed around a site (again as in this case), actual noise levels would be lower.

6.25 It is noted that the LB of Camden takes into consideration noise levels at the Site boundary and will set noise limits accordingly.

6.26 The following phases of construction work have been assumed and considered; with each one of them involving different types of activities and equipment:

(i) Demolition of buildings and existing hardstanding;

Pneumatic breaker and tracked cranes are expected to be used during demolition. Bulldozers would be used after the infrastructure is demolished with dumper trucks providing support for these;

(ii) Shaft excavation, and site preparation;

Tracked loaders, bulldozers and excavators would be used with dumper trucks providing support for these. Also pneumatic breakers are expected to be used.

(iii) Construction (shaft, headhouse and spur tunnel);

Concrete mixers, lorry mounted concrete pumps, dumper and wheeled loaders are expected to be used.

6.27 The predicted construction noise levels at the selected noise sensitive receptors (NSR), which has been identified as residential dwelling along Pratt Street, for the three construction phases, are shown in Table 6.03 below.

Table 6.03 Predicted Construction Noise Levels

BS 5228 Reference	*Equipment*	*Activity dB L_{Aeq}*	*Distance from NSR (m)*	*Total no of items of equipment*	*Phasing of works*	*dB L_{Aeq} at receiver*
C2-8	Pneumatic breaker	91	30	1	1	91
C2-1	Tracked Crane	93	30	1		
C3-26	Dozer	88	30	2		
C3-5	Tracked loader	83	30	2		
C7-50	Supplying electricity for power tools, site machines and ancillary equipment 06	80	30	1		
C7-37	Supplying air to power tools and for general site use 37	95	30	1		
C7-92	Dumper	79	30	2		
C3-24	Tracked excavator/loader	80	30	1	2	90
C7-92	Dumper	79	30	2		
C3-26	Dozer	88	30	2		
C7-50	Supplying electricity for power tools, site machines and ancillary equipment 06	80	30	1		
C7-37	Supplying air to power tools and for general site use 37	95	30	1		
C2-8	Pneumatic breaker	91	30	1		
C6-3	Concrete mixer	61	30	1	3	89
C6-16	Lorry mounted concrete pump	81	30	1		
C7-92	Dumper	79	30	1		
C7-50	Supplying electricity for power tools, site machines and ancillary equipment 06	80	30	1		
C7-37	Supplying air to power tools and for general site use 37	95	30	1		
C3-61	Wheeled excavator/loader	76	30	1		

Source: BS 5228

6.28 The calculated construction noise levels are likely to exceed the existing background noise levels by at least 10 dB. Using the approach set out in Annex GEN.02, the short duration of the construction means that the calculated worst case effects should not be considered as significant (see also mitigation section below).

Operational Fan Noise

6.29 The ventilation system including fans to be located in the shaft will be designed in the detailed design phase. The design of the ventilation system itself will mitigate against the risk of nuisance caused by vibration. All mechanical plant will be designed to meet Local Authority requirements for noise.

6.30 Table 6.04 below shows the relevant fan noise emission limits at the nearest noise sensitive receptor. These limits have been established from the baseline survey (Table 7.02) and the Local Authority requirements (Annex NOI.01).

Table 6.04: Plant Noise Criteria for London Boroughs

Location	***London Borough***	***Borough noise criteria at receptor point***	***Noise emission limit at receptor point (dB)***
St Pancras Substation	Camden	5 dB below background	39

Notes: dB re 2 x 10^{-5} Pa

Source: London Borough of Camden

6.31 As LB Camden's requirements are 5 dB below background levels at the nearest noise sensitive receptor, an increase of 1 dB. Whilst the headhouse is operational the proposed fans will operate semi continuously, at a variable rate. Table 6.01 would indicate that the resultant increase in noise level would be 'low'. In such cases BS: 4142 would indicate 'complaints are unlikely'.

6.32 The impact of operational noise of the fans is therefore assessed as not resulting in a significant effect, using the approach set out in Annex GEN.02.

Mitigation

Construction Noise and Vibration

6.33 The construction work at the St Pancras Substation site will be audible from time to time to those near to the Site. Construction noise limits and any time-of-day restrictions on particularly noisy operations will be agreed with the local authority as part of seeking prior consent to the works, as provided by Section 61 of CoPA. This will also need to meet National Grid's requirements and the requirements of the Project EMP.