

# King's Cross Central Environmental Statement

## REVISED NON-TECHNICAL SUMMARY

Prepared for Argent (King's Cross) Ltd, London and Continental Railways Ltd and Exel plc  
by RPS

September 2005



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Prepared for Argent (King's Cross) Ltd, London and Continental Railways Ltd and Exel plc by RPS

in association with Arup, Air Quality Consultants Ltd, International Heritage Conservation and Management and The English Coffer Partnership.

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September 2005

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Further copies of this Revised Non-Technical Summary may be obtained free of charge from Argent (King's Cross) Limited at the address given above, for as long as stocks last. The Revised Non-Technical Summary (together with other documents that make up the Environmental Statement) will also be available on the project website.

Any queries or comments on the proposals should be directed to the local planning authorities, the London Borough of Camden and the London Borough of Islington, at the addresses given above.

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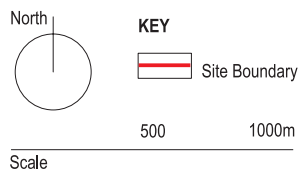
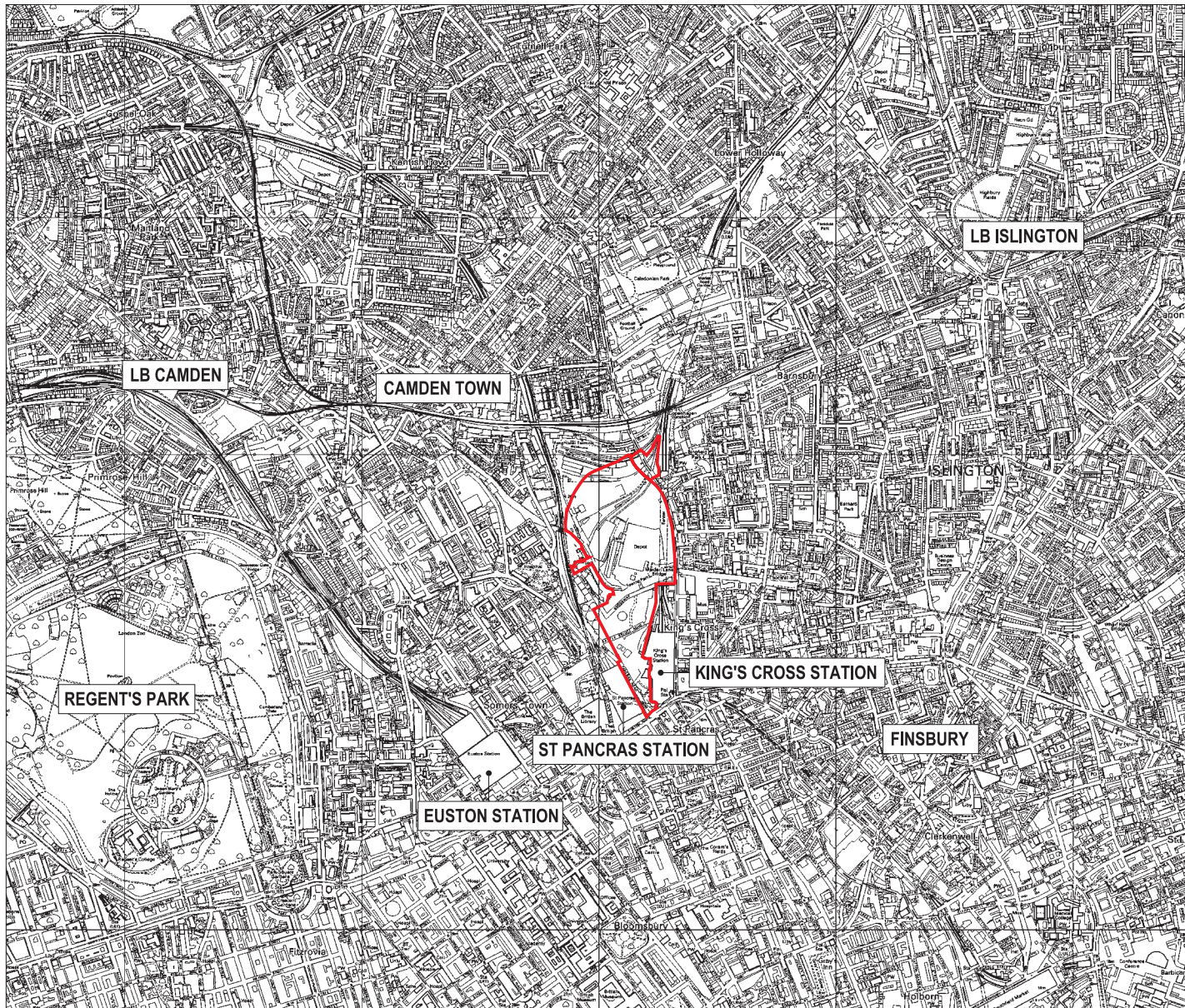
# King's Cross Central

## Environmental Statement: Revised Non-Technical Summary

### Contents

- 1.0 Introduction
  - 2.0 Approach to the Environmental Impact Assessment
  - 3.0 Description of the King's Cross Central Site
  - 4.0 The Approach to Alternatives Taken by the Applicants
  - 5.0 The King's Cross Central Proposals
  - 6.0 The Likely Environmental Effects
- 
- Figure 1 Location of King's Cross Central
  - Figure 2 Site Boundaries
  - Figure 3 Annotated Aerial Photograph of the Site in November 2003
  - Figure 4 Parameter Plan KXC 005: Development Zones
  - Figure 5 Parameter Plan KXC 004: Principal Public Realm Areas
  - Figure 6 Parameter Plan KXC 010: Conservation Plans
  - Figure 7 Parameter Plan KXC 011: Demolition and Relocation Proposals for Listed Building and Conservation Area Consent
  - Figure 8 Context 001, Triangle Site
  - Figure 9 Extract from Parameter Plan TS008 W-E Section
  - Figure 10 Parameter Plan KXC 021: Priority Zones for Green/Brown Roofs and Wind Turbines





**Figure 1: Location of King's Cross Central**

Note: There have been changes to the site and its immediate surroundings due to CTRL works since the map was produced



## 1.0 Introduction

1.1 Argent (King's Cross) Ltd\*, London and Continental Railways Ltd and Exel plc (the Applicants) propose the comprehensive redevelopment of the former railway lands at King's Cross Central (see Figure 1). The proposals have been subject to, and informed by, an Environmental Impact Assessment (EIA). This is a process of identifying and assessing the likely significant environmental effects of a project and identifying ways in which adverse effects can be avoided, reduced or remedied. The results of the EIA are reported in an Environmental Statement. This document provides a non-technical summary of the Environmental Statement.

1.2 The EIA has been undertaken in accordance with The Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999 and published Good Practice for EIA. The EIA aims to inform decision makers and the public about the likely effects of the proposals.

1.3 The Environmental Statement (ES) accompanies two outline planning applications, for the Main Site and the Triangle Site (see Figure 2), submitted in May 2004. There are also related applications for Listed Building and Conservation Area Consents for demolition and other works within the Main Site.

1.4 Since May 2004, changes have been made to the proposals as a result of further consultation and refinement of the plans. The applicants are therefore submitting a number of amendments to the planning applications.

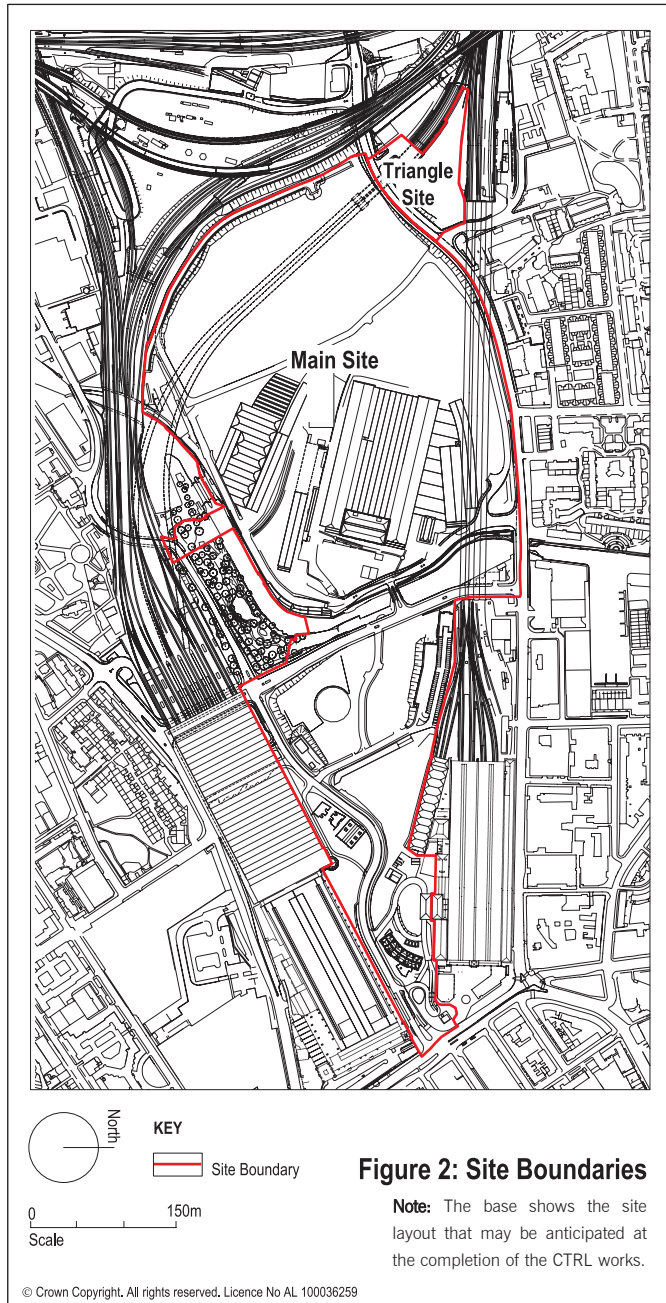
1.5 The principal changes to the proposals include:

- An increase in the public realm including increased areas of 'green' landscape/open space;
- Revised landscape proposals for a number of other streets and squares;
- The embedment of the southern Stanley Building within a new building;
- Reduced maximum building height in some development areas;
- Changes to access and circulation routes within the scheme, with general traffic removed from a number of areas and the incorporation of Urban Homes Zones;
- Specific proposals for renewable energy, including up to 14 wind turbines;
- Priority zones for native species planting and for green and brown roofs;
- The provision of green/brown roofs and larger habitat areas within the Triangle Site;
- Revised proposals for housing, with additional information now provided on the overall unit mix, the quantum and types of affordable housing to be delivered and student housing;
- Explicit provision for health, education and other community facilities, with floorspace specifications.

1.6 The EIA team has reviewed the likely significant effects of the proposals in the light of these changes by undertaking a Supplementary Environmental Impact Assessment, which forms part of the overall EIA. The results of this assessment are presented in a Supplement which forms Volume 5 of the Environmental Statement (following on from Volumes 1 to 4 submitted in May 2004).

1.7 In addition, the Non-Technical Summary has been revised and updated to take account of the scheme changes and supplementary assessment findings and re-published as a free-standing document, addressing the effects of the entire revised proposals. This document is the Revised Non-Technical Summary and it replaces the May 2004 Non-Technical Summary document.

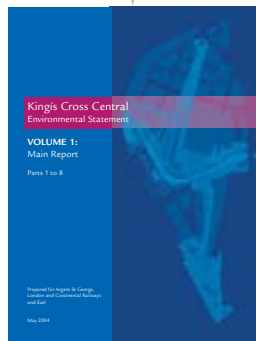
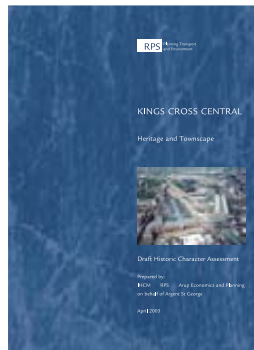
\* Argent (King's Cross) Ltd is the new name for Argent St George Ltd



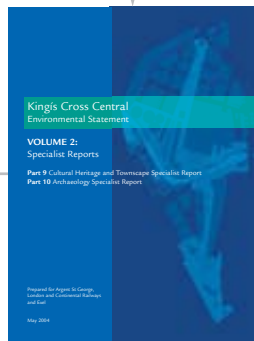
## Draft Scoping Report



## Draft Heritage Character Assessment



**Environmental Statement  
Volume 1 Main Report**



**Environmental Statement  
Volume 2 Specialist Reports  
Cultural Heritage &  
Townscape  
Archaeology**



**Environmental Statement  
Volume 3 Specialist Reports  
Urban Services  
Socio Economic  
Health  
Nature Conservation**



**Environmental Statement  
Volume 4 Specialist Reports  
Water Resources  
Soils & Contamination  
Noise & Vibration  
Air Quality & Climate Change  
Microclimate**



**Environmental Statement  
Volume 5 Supplement**

1.8 The Environmental Statement for the amended scheme thus includes:

- Volumes 1-4 of the Environmental Statement dated May 2004;
- Volume 5 of the Environmental Statement Supplement dated September 2005; and
- this Revised Non-Technical Summary dated September 2005.

1.9 This Revised Non-Technical Summary document summarises:

- the overall approach to the EIA;
- the characteristics of the King's Cross Central site;
- the approach to alternatives taken by the Applicants;
- the revised King's Cross Central proposals; and
- the likely environmental effects of the scheme, as revised, taking into account a range of 'built in' mitigation measures.

## 2.0 Approach to the Environmental Impact Assessment

### The Scoping Process

2.1 Scoping is the process of identifying the range of environmental effects upon which to focus the EIA. The EIA team prepared a Consultation Draft Scoping Report in April 2003. Comments from a wide range of consultees were compiled by the London Boroughs of Camden and Islington and forwarded to the EIA team. These comments informed the terms of reference for the EIA. A subsequent internal scoping exercise informed the supplementary assessment reported in Volume 5.

### EIA Methodology

2.2 This section summarises the overall EIA methodology used, focussing on baseline conditions, scheme definition and the assessment of effects.



## Baseline Conditions

2.3 The 'baseline conditions' of the site and its surroundings in 2006/7 provides the basis against which to predict the likely effects of the proposals.

2.4 The Channel Tunnel Rail Link (CTRL) and associated works are due to be completed and opened in 2007. The main King's Cross Central works would then follow; some site preparation and off site works could however start earlier. 2006/7 is therefore the baseline year. We cannot use the existing situation as a baseline because we know that conditions will change significantly between now and 2006/7, mainly because of the ongoing CTRL works. For each topic, therefore, the EIA describes the existing situation first, and then explains the changes that are anticipated to take place up to the 2006/7 baseline year.

## Scheme Definition and Design Year

2.5 The proposed development is explained in two separate Revised Development Specifications which are submitted with and form part of the planning applications for the Main Site and the Triangle Site. The Revised Development Specifications define and describe the principal components of the proposed development, for example through a series of Parameter Plans and Landscape Proposal Plans. The EIA is based on these Revised Development Specifications; it also makes a number of (clearly stated) assumptions about further aspects of the proposals. For example, the EIA takes into account a number of agreed environmental protection/mitigation measures that would be taken during construction operations (see paragraphs 2.14 and 6.3 below).

2.6 The development would evolve over many years (12-15 years or longer) according to market opportunities and other factors. The applications therefore retain some flexibility over the form and content of the proposals, albeit within various defined "parameters". For example, the Revised Development Specifications include maximum floorspace levels for each type of use and maximum building heights.

2.7 These parameters, together with other aspects of the descriptions of development, have provided the basis for a robust EIA and enabled an assessment of the project's likely environmental effects. As part of this process, each topic has identified and considered the 'worst case' development scenario i.e. the scenario within the given development parameters and stated assumptions that would lead to the worst levels of adverse effects.

2.8 The EIA assesses two stages of the proposals:

- Construction - all those works, activities and processes that would be involved in carrying out the proposed development, including excavation and other earthworks, the erection and dismantling of buildings and structures, demolition and other works;
- Operation - the developed scheme and its use.

2.9 For the purposes of the EIA, the Design Year for operational effects (i.e. the year when the development is assumed to be completed) is taken to be 2020. This means that many construction effects would be long-term (more than 5 years).

## Assessment of Effects

2.10 The following topics have been assessed in the EIA:

- Construction - Transport
- Cultural Heritage and Townscape - Socio-economics
- Archaeology - Health
- Nature Conservation - Noise and Vibration
- Air Quality and Climate Change - Soils and Contamination
- Water Resources - Urban Services
- Microclimate.

2.11 In addition, the EIA addresses the potential for (construction and operational) cumulative effects to arise from King's Cross Central and other planned/proposed developments in the area. In particular, the EIA considers the implications of Network Rail's King's Cross Station Enhancement project, which could result in a new western concourse for the station within the King's Cross Central application site, and within a similar development timeframe.

2.12 The EIA identifies the significance of likely effects on the environment. Levels of significance have been defined as follows:

- Major significance - impacts of the development of greater than local scale;
  - Moderate significance - impacts of the development that may be judged to be important at a local scale;
- or
- Minor significance - impacts that are of low importance in the decision making process.

2.13 A further category of 'negligible' is used to describe effects which are of such low importance that they are considered not to be material to the decision making process.

2.14 The EIA has also addressed mitigation measures to avoid, reduce and, if possible, remedy adverse effects. Many mitigation measures have been 'built in' to the scheme itself through an iterative process of consultation between the EIA and design teams. This has reduced the need for 'further mitigation'.

2.15 Nevertheless, where practical, the EIA identifies opportunities for 'further mitigation' measures that could (further) reduce the effects of the proposals and/or provide environmental enhancement. The EIA findings (summarised within this document) do not rely on these further mitigation measures, which are identified at the end of each topic assessment within Parts 4 and 5 of the Environmental Statement (Volume 1) at the end of each Specialist Report (Parts 9 to 19; Volumes 2-4) and within Part 24 (Volume 5).

2.16 The EIA assesses the whole revised scheme i.e. assuming that the entire development proposal for both the Main Site and the Triangle Site would go ahead. This reflects the Applicants' intention to develop the Triangle Site as part of the wider, phased, mixed use scheme. However, the Environmental Statement also explains how the predicted effects would be different in the absence of development on the Triangle Site i.e. if only the Main Site development took place (for whatever reason).



Aerial photograph: Copyright Simon Hazelgrove Tel: 020 79241222

- Indicative Site Boundary
- Indicative Borough Boundary
- Indicative Location of CTRL Embankment



Figure 3: Annotated Aerial Photograph of the Site in November 2003



### 3.0 Description of the King's Cross Central Site

3.1 The Main Site lies between the Euston Road, St Pancras Station, the Midland Main Line, the alignment of the new Channel Tunnel Rail Link (CTRL), York Way and King's Cross Station. The site includes Wharf Road, Goods Way, Battlebridge Road and parts of Pancras Road and York Way. The Triangle Site is to the east of the CTRL re-alignment for York Way, between the Thameslink 2000 rail line and the East Coast Main Line.

3.2 The existing features of the Main Site and Triangle Site ("the site") are shown in Figure 3. This figure is based on an aerial photograph taken in November 2003. Today, the southern part of the site is used for CTRL and related construction purposes, for temporary roads and car parking and other uses. The main 'Goods Yard' buildings to the north are used for a variety of manufacturing, storage, distribution and leisure uses, plus associated car parking.

3.3 A number of environmental designations apply within the site and its surroundings, including:

- Much of the Main Site falls within the King's Cross and Regent's Canal Conservation Areas. Many of the existing buildings are listed;
- The Regent's Canal is the subject of various designations, for example as Public Open Space and a non-statutory Site of Metropolitan Importance for nature conservation;
- Camley Street Natural Park is a statutory Local Nature Reserve and a non-statutory Site of Metropolitan Importance for nature conservation;
- Part of the Rainside Land in Islington Site of Borough Importance for nature conservation (SBI) is located within the site;

- A large section of the north of the site was formerly included in the North London Link and King's Cross Goods Yard SBI. London Borough of Camden draft Supplementary Planning Guidance removes the designation from the former Goods Yard. The residual North London Line SBI borders the north of the King's Cross Central site;
- There are two Archaeological Priority Areas in the locality identified in the Camden Unitary Development Plan. One is entirely outside the King's Cross Central site and it is unlikely that any proposed development works/operations would affect the other (to the west of Camley Street);
- The whole of the Boroughs of both Camden and Islington are declared as Air Quality Management Areas for nitrogen dioxide and particulates (defined later - see para 6.27).

### 4.0 The Approach to Alternatives Taken by the Applicants

4.1 The nature of the development and its location means that the assessment of alternative sites is not a material or practical consideration. The site has long been identified for comprehensive redevelopment at every level of the planning system. Policies specifically for King's Cross Central within the relevant Unitary Development Plan and other documents are up to date and have been developed taking environmental and sustainability issues into account.

4.2 The 'framework' that underpins the proposals has evolved over the past 4 to 5 years and environmental issues have been taken into account at each stage. The step by step approach taken to researching and refining this framework and proposed layout, up to May 2004, is

explained in four key public documents (which can be viewed on the project's website, [www.argentstkingcross.co.uk](http://www.argentstkingcross.co.uk)):

- Principles for Human City (July 2001)
- Parameters for Regeneration (January 2002)
- A Framework for Regeneration (September 2002)
- Framework Findings (June 2003) - consultation responses to A Framework for Regeneration.

These documents chart five key stages in the evolution of the spatial layout and development proposals up to May 2004; these stages are explained and illustrated within Part 3.1 of the Environmental Statement.

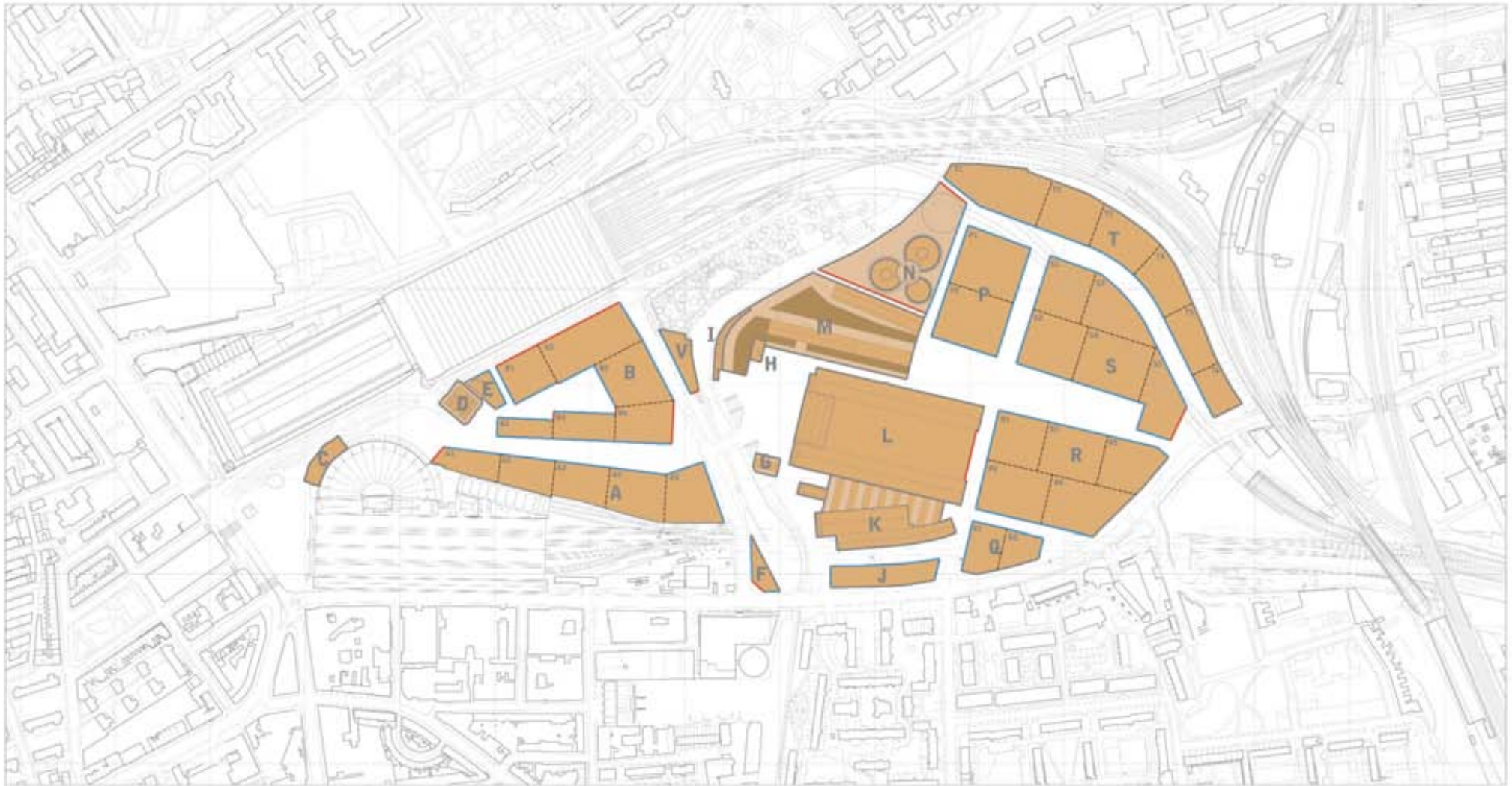
4.3 The changes to the submitted proposals (see para 1.5 above) are a further stage in the evolution of the scheme. The changes include a range of environmental improvements that take account of representations on the planning applications, since May 2004. The Revised Development Specification documents (see para 2.5 above) explain the background to the changes in some detail.

### 5.0 The Revised King's Cross Central Proposals

5.1 The Revised Development Specifications for the Main Site and the Triangle Site are summarised below. The approach taken to the construction process is also summarised (from para 5.18).

5.2 The Applicants have also submitted, in parallel, four applications for Listed Building consent and four applications for Conservation Area consent. These parallel applications seek consent to undertake demolition and other works that are necessary to deliver the comprehensive development of the site, as defined and described in the Revised Main Site Development Specification.





Argent (King's Cross) Limited

King's Cross Central  
 Main Site Planning Application  
 Revised Development Specification  
 Revised Parameter Plans  
 Scale 1:4000 @ A3

Rev: T

ARGENT-PP-05-00000-001-000000

Key:

- Development Zones
- Development Zone Boundary
- Development Zone Boundary (L.O.D.  $\pm$  1.0m)
- Development Zone Boundary (L.O.D.  $\pm$  5m)
- Indicative Subdivision into Development Plots
- West Handyside Canopy
- In some cases, Development Zones include areas of public realm, as shown in drawing KXC 004. For example, Development Zone M includes the Coal Drops Yard, between the Eastern and Western Coal Drops, which would be refurbished as part of the public realm.
- Indicative Position & Orientation for Gas Holder Guide Frames, which would be Re-erected within Development Zone N

Figure 4: Parameter Plan KXC 005:  
 Development Zones

0 25 50 100 200



## Summary of the Revised Development Specification for the Main Site

### General Description of Development

5.3 For the Main Site, the proposals as set out in the planning application, are for:

*"Comprehensive, phased, mixed use development of former railway lands within the King's Cross Opportunity Area, as set out in this Development Specification. The development comprises business and employment uses within the B1 use class; residential uses (including student accommodation), serviced apartments and hotels; shopping, food and drink and financial and professional services within the A1, A2, A3, A4 and A5 use classes; the full range of community, health, education, cultural, assembly and leisure facilities, within the D1 and D2 use classes; multi storey and other car parking; re-erection of the linked triplet of gasholder guide frames to enclose new residential and other development, on the site of the Western Goods Shed; re-erection of the guide frame for Gasholder no. 8, alongside the re-erected triplet, to enclose new play facilities and open space; relocation of an existing district gas governor; works of alteration to other existing buildings and structures, to facilitate their refurbishment for specified uses; new streets and other means of access and circulation; landscaping including open space; new bridge crossings and other works along the Regent's Canal; the re-profiling of site levels; and other supporting infrastructure works and facilities."*

5.4 Table 1 sets out the proposed overall floorspace for the Main Site for each type of use. Whatever floorspace mix is eventually provided within the various "up to" maxima applied for, the overall total floorspace limits in the second column (headed "total floorspace applied for") would not be exceeded.

### Parameter Plans

5.5 The Revised Development Specification includes 21 Parameter Plans which address and fix various elements of the proposed development, in some cases within limits of deviation.

### Development Zones

5.6 The site has been divided into 20 development zones that reflect the geographic layout of the proposed development. The development zones (and sub-zones) are shown on Figure 4 (Parameter Plan KXC 005). They include the existing buildings and structures to be retained and refurbished, for specified new uses.

Table 1 Total Floorspace Proposed within the King's Cross Central Main Site (Table 1 of the Revised Main Site Development Specification)

	Maximum amount of floorspace, within the total applied for, that may be developed as (sq.m):									
	Total Floorspace Applied for (sq.m.)	Business & employment (B1)	Residential	Hotels (C1)/Serviced apartments	Shopping/ food & drink (A1/A2/A3)	Uses within D1 (see Note 1)	Cinemas (see Note 2)	Uses within D2 and night clubs (See Note 3)	Multi Storey Car Park	Other (See Note 4)
South of Regents Canal	244,250	221,510	2,200	32,625	15,060	3,950	0	4,455	0	1,375
North of Regents Canal	468,840	234,000	171,275	14,600	30,865	67,880	8,475	24,275	21,500	0
<b>Total</b>	<b>713,090</b>	<b>455,510</b>	<b>173,475</b>	<b>47,225</b>	<b>45,925</b>	<b>71,830</b>	<b>8,475</b>	<b>28,730</b>	<b>21,500</b>	<b>1,375</b>

1 D1 uses include community, health, education and cultural uses such as museums.

2 Cinemas fall into use class D2.

3 D2 (Assembly and Leisure) uses include concert halls, dance halls, casinos, gymnasiums and other sports/recreation uses, including cinemas, which are also identified separately.

4 Other refers to service entrances, access to London Underground Ltd (LUL) facilities and public bicycle interchange/storage facilities.

## Public Realm

5.7 In addition to the built floorspace, the proposed development includes new streets, parks, squares and other principal public realm areas. These principal public realm areas are shown in Figure 5 (Parameter Plan KXC 004).

## Refurbished Building Groups and Structures

5.8 Figure 6 (Parameter Plan KXC010) identifies building groups and structures that would be subject to works of alteration, to facilitate specified new uses, as part of the proposed comprehensive development. The majority of these works are for refurbishment. Within the Granary complex, the proposed works include the removal of the existing Assembly Shed, to facilitate new buildings and land uses within its footprint. The Applicants have prepared Initial Conservation Plans for each of the building groups and structures shown in Figure 6.

## Demolition and Relocation Proposals for Listed Building and Conservation Area Consent

5.9 Figure 7 (Parameter Plan KXC011) identifies those proposals for which the Applicants have submitted applications for Conservation Area consent and Listed Building consent for demolition/alteration works.

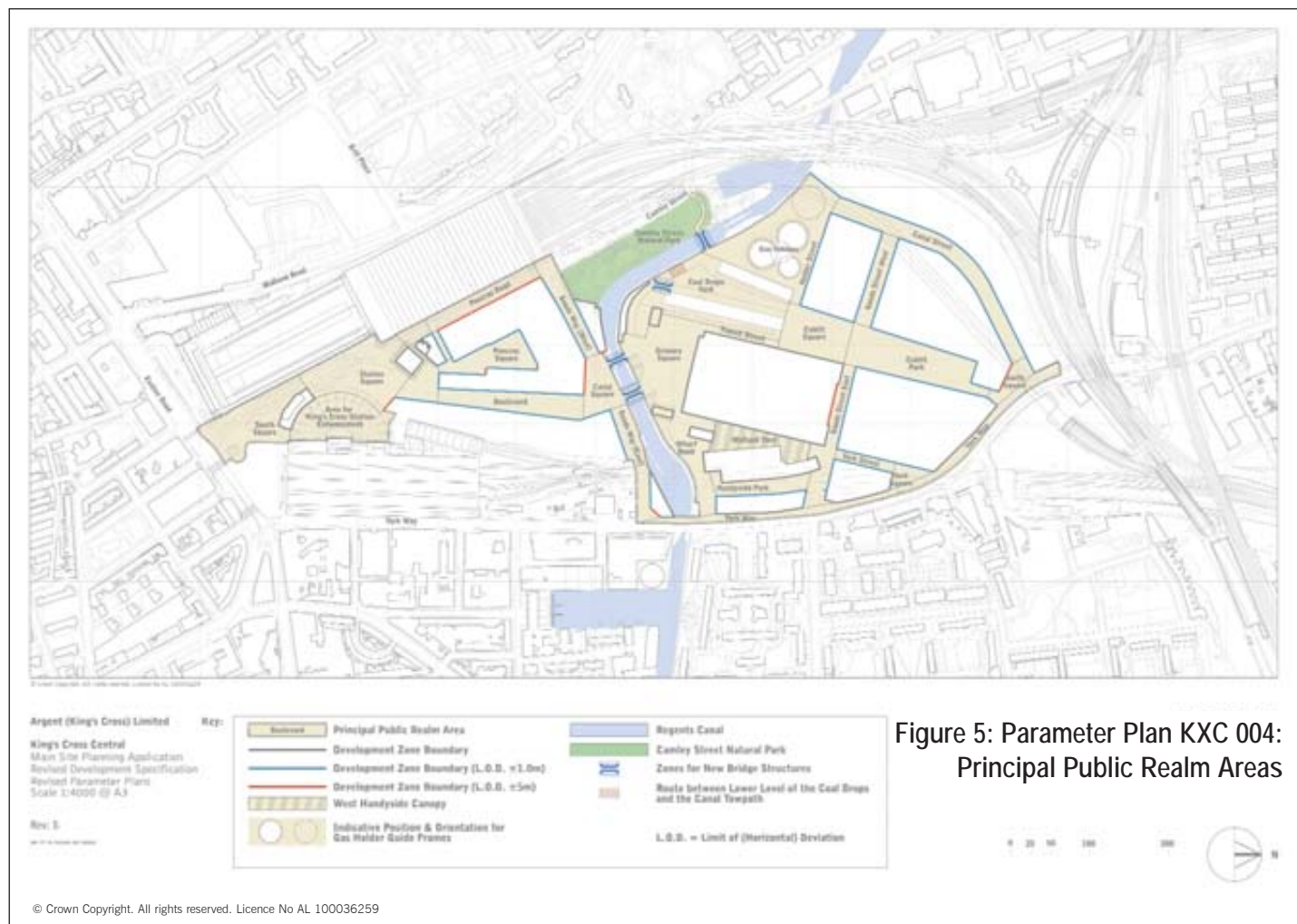
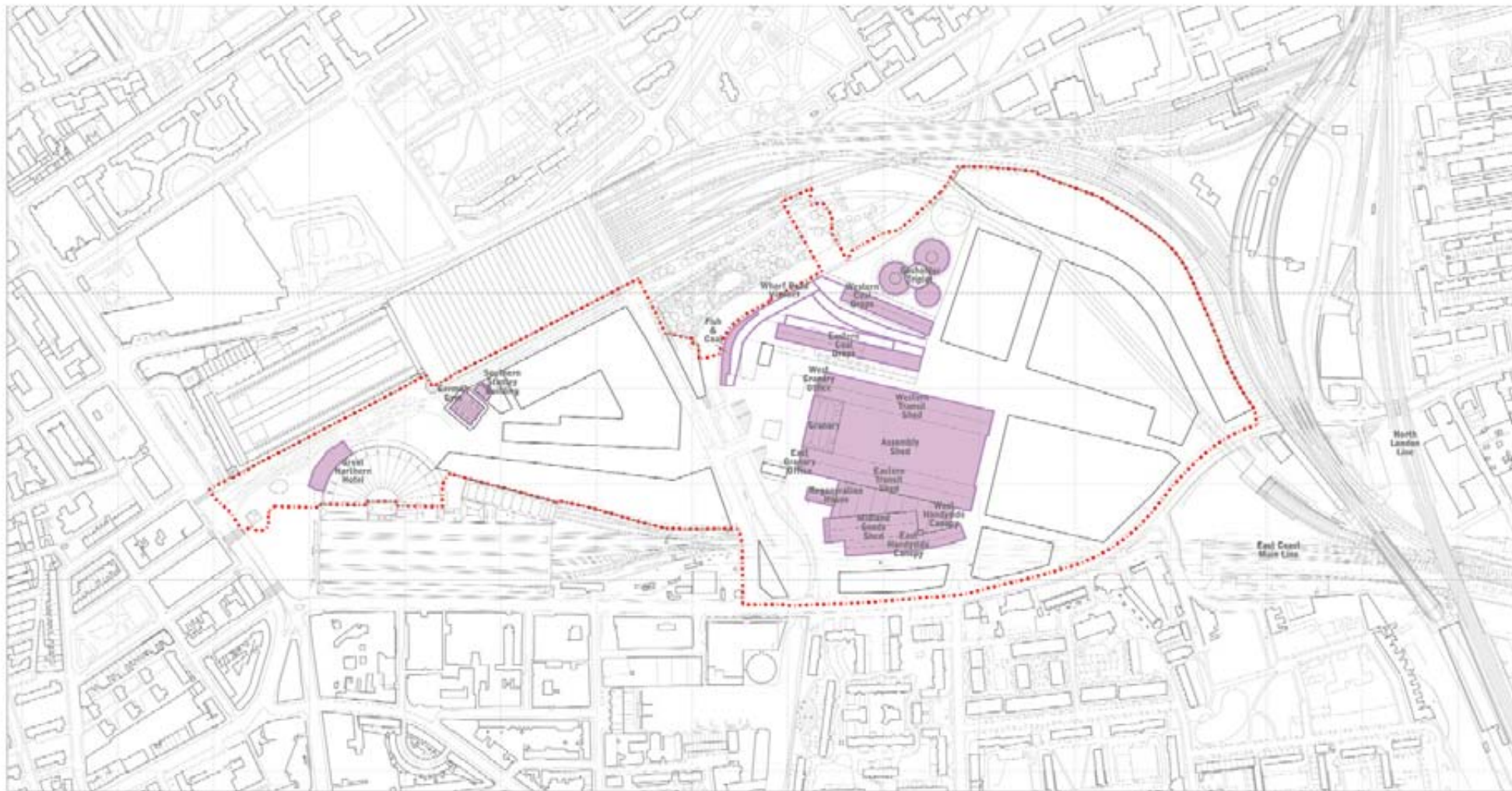


Figure 5: Parameter Plan KXC 004: Principal Public Realm Areas





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**Argent (King's Cross) Limited**  
**King's Cross Central**  
 Main Site Planning Application  
 Revised Development Specification  
 Revised Parameter Plans  
 Scale 1:4000 @ A3

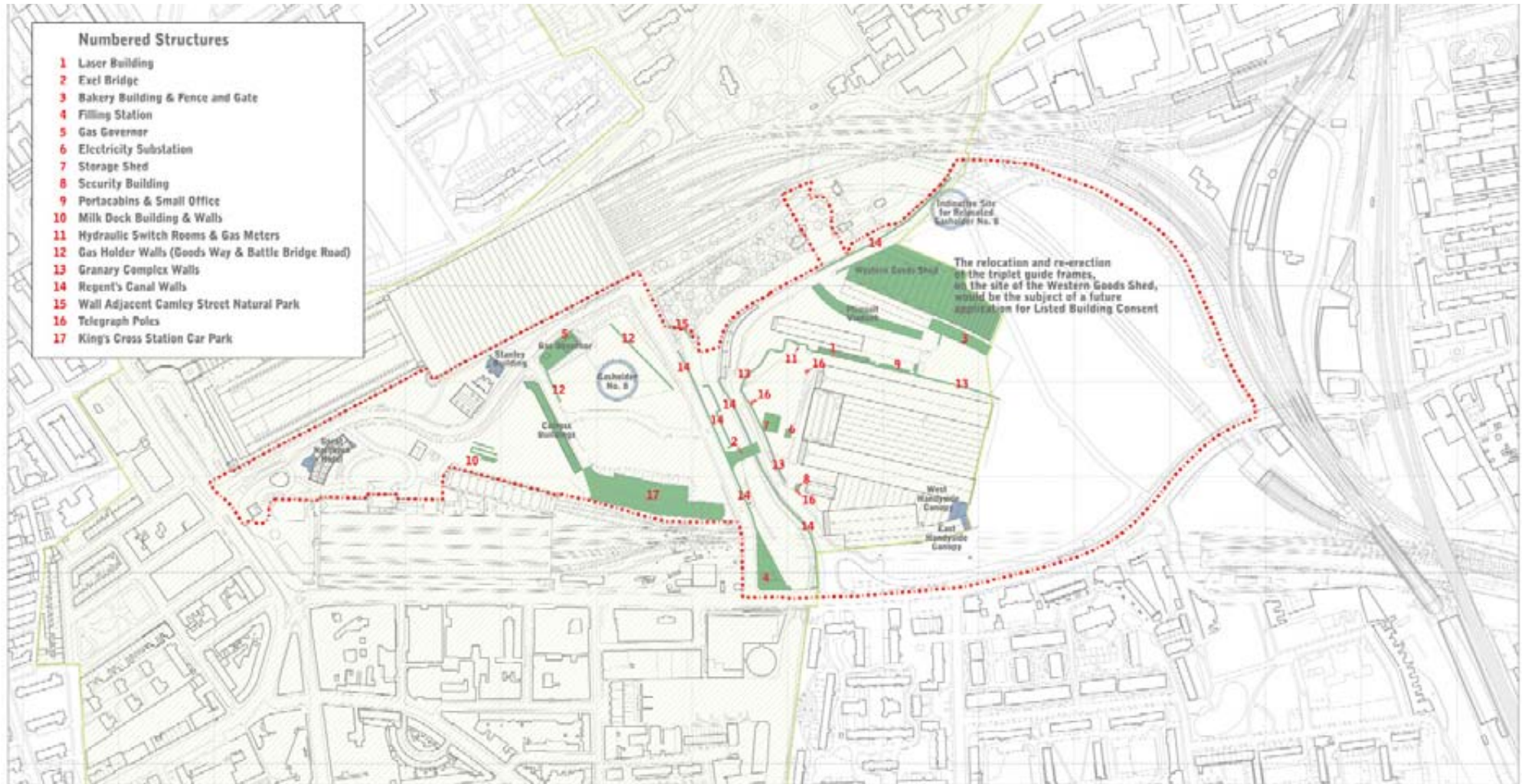
**Rev: R**  
 06.09.16 09:52:04 016.0000

**Key:**

- Building Groups & Structures which are the subject of Initial Conservation Plans submitted in support of the application.
- Planning Application Boundary

Figure 6: Parameter Plan KXC 010: Conservation Plans





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Argent (King's Cross) Limited

King's Cross Central  
Main Site Planning Application  
Revised Development Specification  
Revised Parameter Plans  
Scale 1:4000 @ A3

Rev: M

04\_19\_2015\_09:00:00

Key:

- Planning Application Boundary
- King's Cross and Regent's Canal Conservation Areas
- Demolition proposals for which conservation area consent is being sought
- Demolition proposals for which listed building consent is being sought
- Gas holder No. 8, for which listed building consent and planning permission is being sought, to dismantle, relocate and then re-erection the guide frame.
- • • Telegraph Poles

Figure 7: Parameter Plan KXC 011:  
Demolition and Relocation  
Proposals for Listed Building  
and Conservation Area Consent

0 25 50 100 200





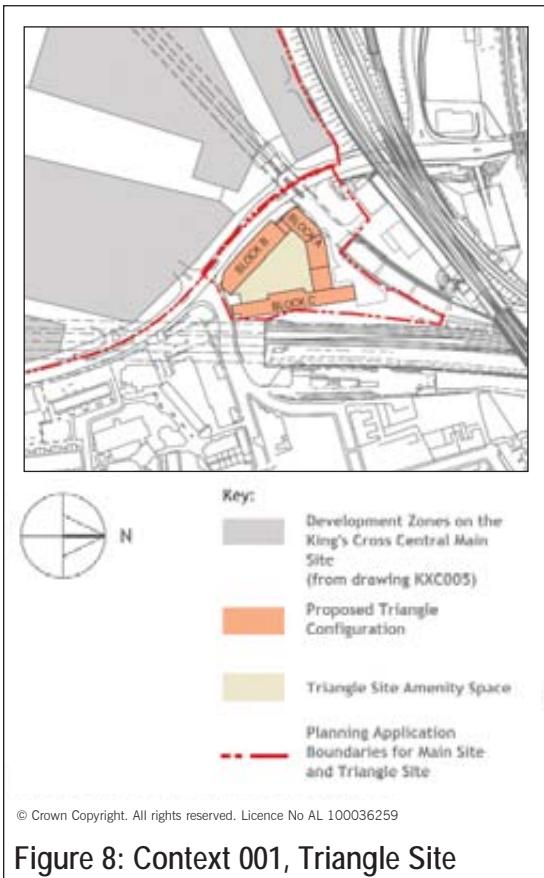


Figure 8: Context 001, Triangle Site

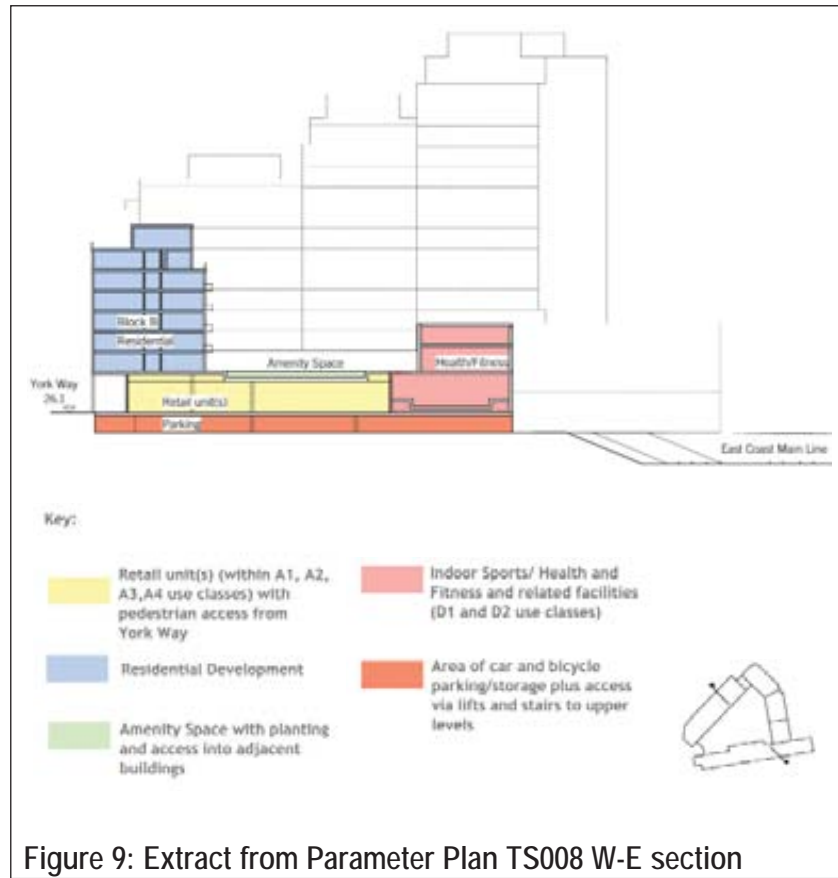


Figure 9: Extract from Parameter Plan TS008 W-E section

Table 2 Floorspace Schedule for the Triangle Site (Annex A of the Revised Triangle Site Development Specification)

Use	Total Floorspace Applied for (sq.m)	Notes
Residential	up to 21,100	To provide up to a maximum of 246 dwellings in Blocks A and B.
Retail	up to 2,500	Within Block B and beneath amenity space. All units to have frontage to York Way.
D1/D2 uses	up to 3,000	The application seeks permission for health and fitness/indoor sports facilities, including a swimming pool, within Block C, with the potential to also incorporate crèche/day nursery facilities; and day centre/public hall facilities.
Total	up to 26,600	

## Summary of Revised Development Specification for the Triangle Site

### General Description of Development

5.10 For the Triangle Site, the revised proposals are for: "Mixed use development of part of the former railway lands within the Camden King's Cross Opportunity Area and an Islington Area of Opportunity, as set out in [the] Development Specification. The development comprises residential; shopping, food and drink and financial and professional services within the A1, A2, A3 and A4 use classes; a health and fitness centre (use class D2) with the potential to incorporate a crèche and community facilities (use class D1); amenity and open space; habitat area; recycling and other ancillary uses; parking; highway works to provide access; and other supporting infrastructure works and facilities."

5.11 The proposed development comprises three principal buildings, which would stand as separate structures at higher levels, but which would extend across the site at lower levels with a common basement level used for car and bicycle parking/ storage.

5.12 Table 2 shows the maximum floorspace proposed for the Triangle Site, for each type of use proposed.

### Parameter Plans

5.13 The Revised Development Specification for the Triangle Site includes nine Parameter Plans. An additional plan has been prepared: Context 001 (see Figure 8). This shows the relationship between the Triangle Site and the principal development zones on the Main Site. This plan indicates the locations of the three main development blocks on the Triangle Site.



## Environmental Performance

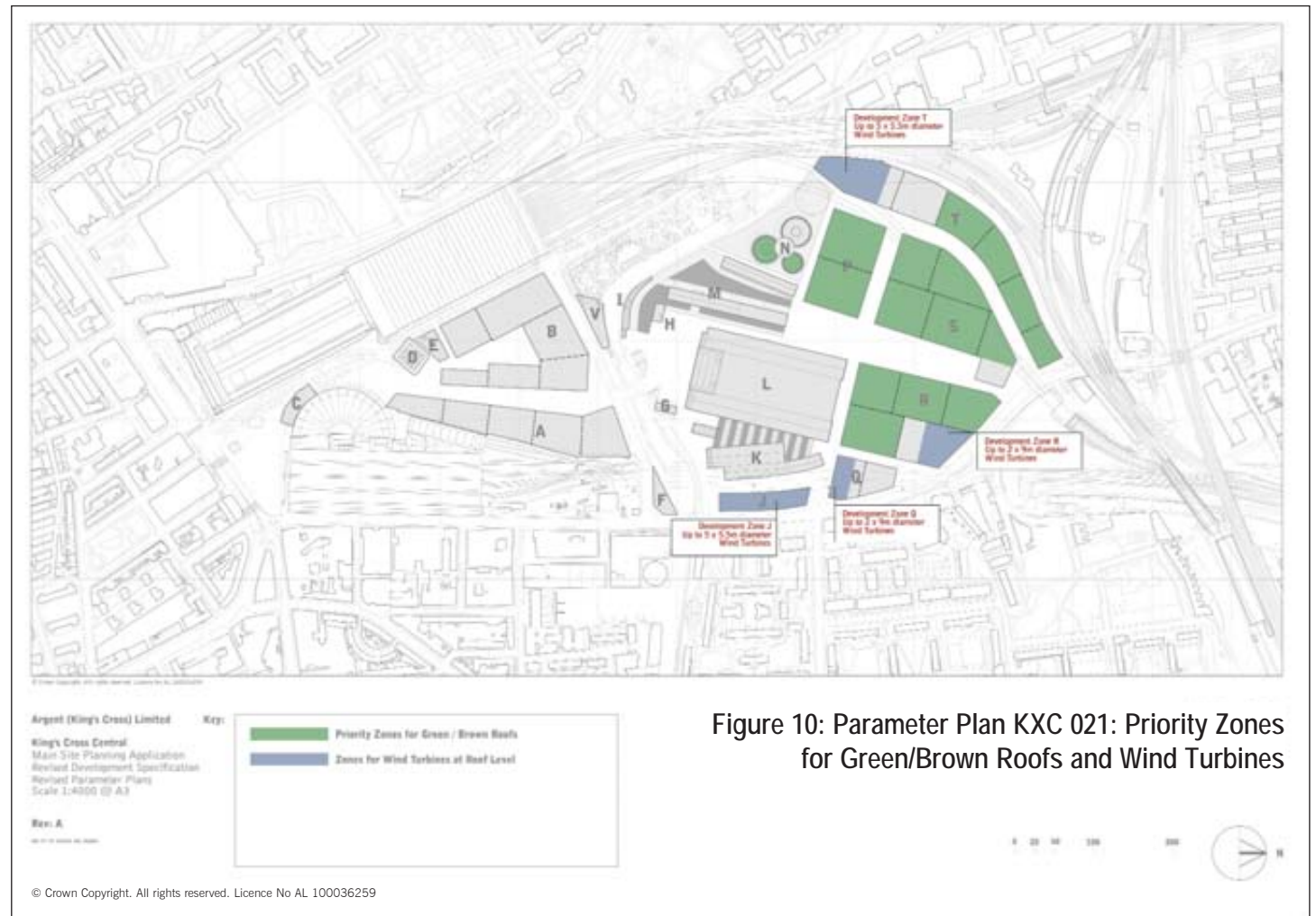
5.14 Both Revised Development Specifications explain that all new buildings would be designed to achieve "very good" environmental performance ratings, with an aspiration for ratings of "excellent".

5.15 Within the Main Site, at least 15% of the roof area of new buildings constructed within the development would be 'green' / 'brown' roofs (or equivalent systems). Figure 10 (Parameter Plan KXC021) shows the priority zones for 'green'/brown' roofs and the locations of up to 14 rooftop wind turbines within the Main Site. Additional green/brown roofs would be provided on the Triangle Site.

5.16 Other proposals for renewable energy include infrastructure for ground source heat pumps beneath public realm areas, photovoltaics in locations with long periods of direct sunlight, and solar water heating for student housing.

5.17 The new drainage infrastructure provided within the Main Site and Triangle Site would achieve a 10% reduction in combined (storm and foul) flows to the existing combined sewers from the Main Site and a 10% reduction in stormwater discharges to the existing sewers from the Triangle Site, compared (in each case) to the existing maximum allowable discharge.

5.18 The development would make use of district heating and Combined Heat and Power (CHP) systems, including at least one fuel cell to showcase that technology.



## The Construction Process

5.19 The construction process is likely to include:

- Initial site preparation, including setting up construction compounds, installing site hoardings and protection measures for historic buildings;
- Construction of temporary accesses to site;
- Realignment of existing roads;
- Construction of internal road system;
- Onsite infrastructure works, including foul and storm sewers, manholes and chambers;
- Demolition of existing structures (following documentation);
- Earthworks, including removal of contaminated materials, excavation of ground and basements;
- Construction of new buildings including piling, laying foundations, connection to services and addition of superstructure;
- Refurbishment of existing buildings;
- Land profiling, landscaping and public realm works;
- Site completion, including removal of construction compounds.

5.20 Each major phase could include works and development across a number of zones across the site, including public realm works.

5.21 It is likely that the first year would focus on the enabling works and therefore any construction of buildings would initially be minimal. Thereafter, the rate of building construction would increase. Wherever practicable, works would be undertaken during normal working hours. Where this is not practicable, preference would be given to undertaking works during the evening rather than at night, and consideration would be given to additional weekend (day) working. For internal fit-out work, where there is demonstrably no disturbance, out of hours working would be proposed.

5.22 Activities likely to generate noise that would affect sensitive areas would only occur during normal working hours, other than in exceptional circumstances (e.g. works in close proximity to an operational railway that could only safely take place during night-time railway possessions).



## 6.0 The Likely Environmental Effects

### Construction Effects

6.1 Environmental effects are inevitable during the construction of any development. They arise from activities which, for example, generate noise and vibration, emissions to air (including pollutants, odour and dust), traffic movements (particularly HGVs), and the potential for sedimentation and pollution of water resources.

6.2 Most of the proposed King's Cross Central site is currently within the site of the Channel Tunnel Rail Link (CTRL) works, which is a large scale civil engineering project. It is important to recognise that the nature of the King's Cross Central proposals are different to CTRL. While the King's Cross Central proposals do include civil and infrastructure enabling works, the vast majority of operations would comprise building works using well established construction techniques for minimising disruption in high density urban settings.

6.3 All construction work would be carried out in compliance with relevant environmental protection and health and safety legislation. Measures to control the potential effects of construction have been identified and agreed, based on current best practice. The likely construction effects have been assessed for each environmental topic, taking into account these agreed/built in' mitigation measures. The main findings of the assessment are summarised here.

### Heritage and Townscape

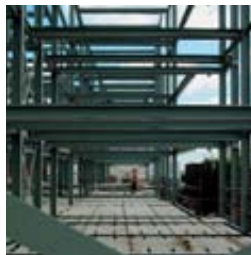
6.4 The extended period of construction would produce a 'building site' character to parts of the site for 12- 15 years or longer. The construction process would affect local views through the demolition of existing buildings and the emergence of new buildings. There would be positive effects on character and views as the unused land is brought into beneficial use and occupation. The overall effect is considered to be 'neutral'.

### Archaeology

6.5 Effects on archaeology are nearly always permanent. Consequently, archaeology is addressed primarily within 'Operational Effects', below. Any temporary effects during construction (from accidental damage or vibration) would be controlled through construction best practice and therefore no perceivable effects on archaeological resources would occur.

### Transport

6.6 The predicted peak levels of construction traffic (35 vehicle movements in each direction in a typical hour) represent a very small percentage of typical hourly flows surrounding the site and would not significantly affect the highway capacity. Some public rights of way and public transport routes within the site and the immediate surroundings are likely to be disrupted during some construction works. Any disruption would be kept to a minimum, for example through alternative routing, advance warning, notification and signposting.



### Socio-Economic

6.7 The construction of King's Cross Central would create opportunities for construction employment. The 2004 NTS reported the generation of some 3,000 full time equivalent jobs. This has been reviewed for the revised proposals and the revised prediction is 2,993 full time equivalent jobs. The 2004 NTS reported that there would be local employment and increased income for up to 900 local people (full time equivalent) and this assessment has been confirmed (898 full time equivalent jobs) for the revised proposals. The nature of construction work means that the level of employment generated and skills needed would fluctuate over the development period. Nevertheless, the length of the King's Cross Central construction period means that there is the potential for the construction sector to become a long-term stable employment base within the local economy.

6.8 Construction activity on the site is unlikely to affect crime levels through displacement to other areas. The changing character of the area and the removal of many of the focal points for criminal activity, brought about by King's Cross Central (progressively) and other projects is likely to help reduce the attractiveness of the area for criminal activity such as drug dealing and prostitution, reducing crime and the fear of crime in King's Cross.

### Health

6.9 Beneficial effects on the health of the residents, users and the surrounding population during the construction phase may arise from increased levels of employment, reduced levels of crime, and improvements in social capital.

6.10 There is potential for dust and noise effects to be experienced, both from construction activities on the site and construction traffic. These potential effects would be controlled. The assessment of significance is considered to be the same as set out in the air quality and noise sections below.

6.11 Any potential increases in demand for emergency/hospital services are likely to be minimal with effective site management and implementation of appropriate Health and Safety Plans.



## Nature Conservation

6.12 In the years preceding the commencement of the King's Cross Central development works, the wildlife present will have been subject to the extensive disturbance associated with major construction activities in the area. The King's Cross Central development programme would follow on and is not likely to give rise to significant additional disturbance, although the period of such disturbance would clearly be extended.

6.13 The loss of nature conservation interest of the King's Cross Goods Yard is reflected by removal of its designation as a Site of Borough Importance (SBI). The North London Line remains designated as a residual SBI (see paragraph 3.3 above). The Railside Land in Islington SBI is currently subject to disturbance and disruption as a result of the CTRL works. Development of King's Cross Central would continue construction activity for a further 12-15 or more years.

6.14 Works in the vicinity of Camley Street Natural Park may cause disturbance. The Regents Canal may be exposed to disturbance and pollution during construction of the bridges and other works within the vicinity of the canal. Measures would be taken to control these impacts.

6.15 'Wasteland' habitats may develop and be lost in parts of the King's Cross Central site as construction continues. Any such sites are likely to be subject to a relatively high degree of disturbance as a result of construction works or use of occupied areas of the site.

6.16 The common pipistrelle bat would potentially be affected due to disturbance of the canal and Camley Street Natural Park as a result of the construction works. However, given that night time working likely to cause disturbance would only occur under exceptional circumstances, significant effects on foraging bats would not be expected.

6.17 The high levels of activity associated with an active development site would be likely to deter black redstart and other breeding birds (including Red-list and Amber-list species<sup>1</sup>). Areas of the site which are not being developed may be suitable depending on the nature of phased development and any interim uses.

6.18 The construction works are unlikely to have any adverse effects on amphibian populations (smooth newt, common frog and common toad).

6.19 The azure damselfly was recorded at the ponds at Camley Street Natural Park. The only risk during construction would be if pollution entered the canal and in turn reached the ponds. Measures would be taken during construction to prevent such pollution occurring.

6.20 Nationally Notable terrestrial invertebrates have been recorded on the site. 'Wasteland' habitats may be created and be lost in parts of the site as construction continues and these may provide areas of temporary habitat for invertebrates. Invertebrates would not be sensitive to the relatively high levels of disturbance which may affect such sites.



## Water Resources

6.21 Potential effects on water resources have been identified, including the potential for temporary, localised flooding; sediment loading or localised contamination of the ground due to localised dewatering of perched water; the washing of sediment and other pollutants into the canal from areas of exposed earthworks materials; and dust and debris entering the canal. However, measures would be taken to control these risks/operations (for example damping down on surfaces and wheel washing to control dust and use of interceptors to control run-off). Any effects would be negligible.

## Soils and Contamination

6.22 There is a risk that contaminated material may become mobile during the construction works, or that contaminated dust from working areas may be wind blown in the vicinity of the works. Inappropriate handling and storage of fuels and other liquid chemicals could result in spills and leaks impacting upon the perched water table and the Regent's Canal. Measures to control mobile materials, contaminated dust and the prevention and control of spills would be in place and therefore construction activities are likely to have a negligible impact.

<sup>1</sup>Definitions from RSPB, 1999, The State of the UK's Birds: Red-list species are those which have undergone a 50% or more decline in UK breeding population or range over the previous 25 years, or a historical decline over the period 1800-1995, or are species of global conservation concern. Amber-list species are those that are identified for several reasons, but particularly because they have undergone a 25-49% decline in the UK over the last 25 years.

### Noise and Vibration

6.23 The King's Cross Central development would give rise to noise and vibration during its construction due to activities on the site and also construction traffic on the local road network.

6.24 Piling is the only construction process likely to be used that could cause high noise levels at locations outside of the site. The level of effects would be dependent on the type of piling used. Percussive or driven piling methods involve hammering piles into the ground. Augered or bored piling is quieter; the ground is removed using a screw thread and the piles are then formed.

6.25 The impact of augered piling would be negligible during daytime hours, but could cause a moderate adverse effect at night when working to the east of the Gasworks tunnels. In the event that percussive piling is required, then both day and nighttime (if relevant) noise levels could be exceeded at residential properties to the east of York Way. Percussive piling alongside the Gasworks tunnels would cause a moderate adverse effect at night. There would also be a minor to moderate adverse impact during the daytime. In any such cases, appropriate controls would be agreed with the local planning authority.

6.26 Increases in road traffic noise due to construction traffic would be small, with all of the increases on roads with residential properties being not perceptible and of negligible significance. An increase of slightly more than 3 dB is predicted on Goods Way, and while there are no noise sensitive receptors on this road, there are a number of residential narrowboat moorings on the Regent's Canal close to Goods Way. The predicted increase in noise levels is considered to be a minor adverse effect at these narrowboats.



### Air Quality

6.27 The principal effects are likely to arise from the effects of dust soiling and particulate ( $PM_{10}^{2}$ ) concentrations from construction activities and changes in nitrogen dioxide due to emissions of vehicles during the construction phase.

6.28 Around 150 residential properties in York Way, Rufford Street and Gifford Street, residents of narrowboats on the Regent's Canal, some of the new affordable housing units at the junction of Rufford Street and Gifford Street, some business premises on York Way and the Agar Grove Industrial Estate, and parked cars and heritage buildings in this area could be at risk of dust soiling effects at some point during the construction period. Around 30 of the properties on York Way at risk of experiencing dust effects may also be at risk of  $PM_{10}$  effects, as may residents of the narrowboats on the Regent's Canal.

6.29 Dwellings or premises built and occupied as part of the new development may also suffer some occasional effects.

6.30 The measures that would be taken to control dust emissions represent best practice in terms of construction management and would minimise the impact of dust on the receptors identified. Any dust incidents would be highly dependent on the weather, and would need to be combined with an activity creating dust close to the receptor. This combination of conditions and events should be infrequent for an individual location. Due to the south-westerly prevailing wind, there would be a risk of more frequent effects for residential premises on York Way.

6.31 The potential effects of additional construction traffic have been assessed and the results show that the increase in nitrogen dioxide and  $PM_{10}$  concentrations due to construction traffic associated with the King's Cross Central development would be very small (<1%).

<sup>2</sup>Fine particles (less than 10mm in diameter, known as  $PM_{10}$ ) are recognised as significant causes of pollution. Owing to their small size, they can be carried from sites even in light winds and may therefore have an adverse effect on the environment and on the health of local residents, as well as those working on the site. Source: BRE, 2003, Control of Dust from Construction and Demolition Activities

## Urban Services

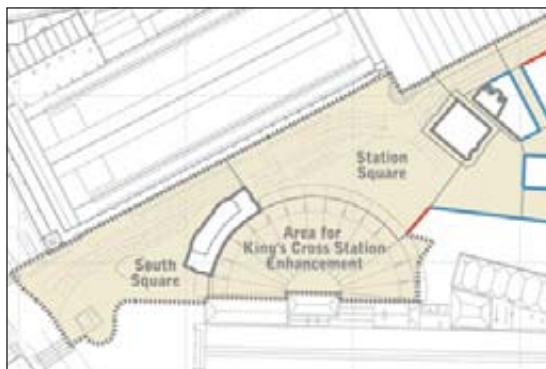
6.32 The effects on the existing utility network from construction and infrastructure works have been assessed.

6.33 For onsite works, control measures would be in place and all activities related to the phasing and installation of on-site utilities would be co-ordinated. Works would be programmed at the appropriate times of year when utility demands are typically less.

6.34 The relocation of the district gas governor would require significant underground diversion and extension works to existing gas mains and other non-gas utilities along roads that are already congested with utilities. The impact on existing and proposed utilities is assessed as adverse and of minor significance.

6.35 During any Camden Sewer Diversion, flows along the Camden Sewer would need to be briefly interrupted although the majority of new construction would be off-line and therefore not affect existing flows. There would be an adverse effect of minor significance on the existing utility network.

6.36 In general, the diverting of existing utilities in local roads, to allow new road connections from site to tie into the existing highway network, is assessed to have a minor adverse effect on the existing utility network.



Extract from Figure 5 (Parameter Plan KXC 004)

## Waste

6.37 Waste would be generated during construction. Waste management practices on site would comply with the relevant legislation for storage and disposal of all construction wastes, and control measures would be in place to reduce the volume of waste where feasible. The environmental effects of waste operations and waste management practices are addressed within the relevant topic assessments summarised above.

## Effects without the Triangle Site

6.38 If the development were to proceed without the Triangle Site, the scale of the construction works and number of construction vehicles would reduce, and therefore the impacts on noise and air quality and health would also reduce, but it would not be a significant change.

## Effects with London Underground Ltd Phase 2 works and King's Cross Station Enhancement

6.39 The London Underground Ltd (LUL) works at King's Cross-St Pancras Underground Station have been given the Government go-ahead to restart and these works are due to be complete in 2008/9. On this basis, the LUL works would still be underway, alongside the early development of King's Cross Central.

6.40 The Government has also announced its backing for the Network Rail King's Cross Station Enhancement, subject to agreement on certain matters including the integration of the project with LUL's plans for King's Cross-St Pancras Underground Station and the development of an integrated programme.

6.41 It is considered unlikely that an integrated project would have greater overall construction effects (in terms of either magnitude or duration) than the two projects carried out in sequence, one after the other over a period of 7 years: if anything an integrated project is likely to have less construction effects in terms of magnitude and duration. The assessment of effects has therefore considered the 'worst

case' of the two projects carried out in sequence i.e. construction of King's Cross Station Enhancement following completion of the LUL works and the potential for this sequence to give rise to cumulative construction effects alongside King's Cross Central. The potential 'worst case' would be if the peak construction activity from King's Cross Central coincided with the peak construction activity from LUL/King's Cross Station Enhancement.

6.42 The level of construction traffic has been assessed under these circumstances, and the assessment confirms that the additional vehicles would not significantly affect the highway capacity of York Way.

6.43 The disruption to users of public transport and pedestrians in the vicinity of the King's Cross Central and King's Cross Station Enhancement projects could be increased as a combined effect of several concurrent schemes. However, the control measures that would be taken in any event (for King's Cross Central) could and would maintain satisfactory levels and standards of access.

6.44 In relation to noise, construction of Development Zones A and B could take place at the same time as the King's Cross Station Enhancement and the LUL Phase 2 works; however, there are no noise sensitive receptors in the vicinity that could be exposed to these cumulative effects.

6.45 There are no existing residential receptors that could be affected by cumulative dust effects and the impact of dust soiling and PM<sub>10</sub> concentrations due to construction activities would remain of moderate adverse significance (See Table 3).

6.46 The combined or 'cumulative' impact of construction traffic on air quality and noise would remain the same as for the assessment for King's Cross Central (only).



## Overall Summary of Construction Effects

6.47 Table 3 provides an overall summary of the likely effects of the revised scheme at the construction stage, taking account of 'built in' mitigation measures. Table 3 also confirms that there are no changes in significance (from those reported in May 2004) due to the scheme revisions.

6.48 The effects are generally regarded as long-term because of the extended period of the construction programme, although in reality some of the effects would be intermittent e.g. noise effects from piling.

6.49 For nature conservation, the assessment of significance has been undertaken considering the effects of construction, operations and permanent land-take together, for each part of the site and its nature conservation receptors; these assessments are set out in the 'Operational Effects' section below.

Table 3: Summary of Construction Effects

	Summary of Effects	Type	Significance	Changes in significance due to Scheme Revisions
Cultural Heritage and Townscape	'Building site' site character. Demolition and building work would also affect local views. Beneficial effects on character and views as land is progressively brought into beneficial use and occupation.	Neutral overall	N/A	No change
Archaeology	Potential accidental damage to buried archaeology and potential vibration effects would be controlled through construction best practice.	Adverse	Negligible	No change
Transport	Construction traffic levels would not significantly affect highway capacity. Disruption to rights of way and public transport routes would be controlled through construction best practice.			No change
Socio-economic	Construction employment would benefit local people and others. The changing character of the area would reduce its attractiveness for criminal activity.	Beneficial	Minor/moderate (construction employment)	No change
Health	Beneficial effects from increased levels of employment, reduced levels of crime and improvements in social capital.  Adverse effects from disruption to pedestrian routes and public transport (see 'Transport' above).  Adverse noise and air quality effects (see below).	Beneficial	Minor	No change
		Adverse	Minor	
		Adverse	(See below)	
Nature Conservation	Disturbance effects to habitats and species from construction noise and lighting and pollution from spillages/emissions. Measures would be taken to control these impacts.	(See Table 4: Summary of Operational Effects)		No change
Water Resources	Potential for localised flooding, sedimentation and pollution of ground and watercourses. Measures would be taken to control these impacts.	Adverse	Negligible	No change
Soils and Contamination	Potential for the movement of contaminated material (e.g. dust) and the spillage of pollutants. Measures would be taken to control these impacts.	Adverse	Negligible	No change
Noise and Vibration	Impact of piling operations in the vicinity of the Gasworks tunnels. The level of effects would depend upon the timing of works and the type of piling used (e.g. augered or percussive). Augered piling would have negligible effects during day-time hours.  Increases in road traffic noise from construction traffic.	Potential for moderate adverse effects during the night (and minor-moderate adverse effects during the day) at residential properties to the east of York Way.  Generally negligible. Minor adverse effects at narrowboats close to Goods Way.		No change
Air Quality and Climate Change	Adverse impacts of dust and PM <sub>10</sub> upon local air quality due to construction activities in an Air Quality Management Area (AQMA).  Increase in nitrogen dioxide and PM <sub>10</sub> concentrations due to construction traffic (<1%).	Adverse	Moderate (because within AQMA)	No change
		Adverse	Minor (because within AQMA)	
Urban services	Disruption to the existing utility network and waste services from construction and infrastructure works, including any Camden sewer diversion.	Adverse	Minor	No change
Effects without the Triangle Site	Relatively small reduction in construction works and their environmental effects.	As for the Main Site and Triangle Site together (no significant change to findings above).		No change
Effects with King's Cross Station Enhancement and LUL Phase 2	Relatively small increase in construction works and their environmental effects.	As for the Main Site and Triangle Site together (no significant change to findings above).		No change

## Operational Effects

6.50 The operational effects are described below, starting with heritage and townscape to give a broad introduction to the proposals and their effects. Transport is also considered early to provide a context for noise and air quality assessments. No significance is attached to the order of the topics in this section.

### Cultural Heritage and Townscape

6.51 Implementation of the proposed development would lead to the complete demolition of one Listed Building and three unlisted heritage buildings/structures considered to make a positive contribution to Conservation Areas. The majority of listed and unlisted heritage buildings and material, particularly within the Central Character Area (the Goods Yard complex), would be refurbished and embedded within the new development. The Gasholder Triplet and Gasholder No. 8 group of guide frames would be re-established north of the canal. The proposals would achieve conservation and long-term management of the valued heritage resource. This would enhance the status and setting of these buildings, promoting their renewed contribution to the townscape and community.

6.52 The proposed network of streets and civic spaces would replace fragmented areas of vacant and under-used land with a comprehensively planned and high quality environment for residents, workers and visitors within the site. It would also create routes across the King's Cross Opportunity Area, linking communities to the east and west of the site.

6.53 The townscape proposals would result in a net increase in urban tree planting, mainly in the new development areas. The areas around the historic railway buildings would generally have a low density of planting in order to retain their robust urban character. Historic surfaces would be restored in-situ or re-used within the Conservation Areas, where practicable. Materials not re-used within the scheme could be offered for use in other projects.

6.54 It is inevitable that the overall character of the Conservation Areas would change as a result of the proposals, but their appearance would be enhanced by the quality of the proposed development.

6.55 Some local views of landmarks would be lost but others would be created as a result of the development. The overall appearance of the site would be improved and greater public access would create more opportunities to appreciate views of the heritage buildings and their settings.

6.56 The proposed rooftop wind turbines (see Figure 10) would be located outside the Conservation Areas and are considered to be consistent with the industrial history of the site. Nevertheless, the turbines are likely to give rise to adverse effects along York Way. Any potential effects arising from 'shadow flicker' as the blades rotate would be mitigated by shutting down the turbines during periods when disturbance might occur.

6.57 Overall the net effects of the King's Cross Central development on heritage, townscape and views are considered to be beneficial and of moderate significance.

### Archaeology

6.58 The site was much dug-over for extracting brick-making soils and then was highly disturbed during the creation of the mid 19th century industrial developments. There is a paucity of 'known' sites and finds within the site related to all pre-industrial periods. The character of the site and setting indicate that the archaeological potential related to these pre-industrial times is minor.

6.59 For each phase of development, a watching brief would be implemented at times of engineering site investigation and then during the construction of ground works, within relevant areas.

6.60 The greatest potential impacts could result from the insertion of basements. Any principal features affected are likely to relate to the Industrial and Modern periods but chance finds of all other periods cannot be ruled out. Taking into account the watching briefs and associated recording of such assets, any effects are likely to be of minor-moderate adverse significance.

6.61 As with any site, there remains some potential for discovery of resources dating to prehistoric times, containing sensitive features that may be damaged or decay as a result of the development works. Given the low potential for such

finds, however, any effects on these resources are likely to be of negligible to minor adverse significance.

6.62 No adverse effects are considered likely from noise/vibration, ground contamination, or changes in ground conditions, once construction has been completed. At most, adverse effects of minor significance could result from repair/maintenance of infrastructure, accepting that the installation of these engineering elements would already have disturbed archaeological deposits.

6.63 There would be no long-term adverse effects post-construction. Rather, the site and post site works could result in positive effects of moderate significance given that the results could make a significant contribution to, and aid with setting future archaeological research objectives for, King's Cross and Greater London.

### Transport

6.64 An assessment has been undertaken of the way King's Cross Central would affect the public transport and highway networks used by people. The assessment focuses on the capacity and resilience of the public transport and highway networks to accommodate the travel demands of King's Cross Central. The 'environmental' effects of the changes in traffic volumes on noise and air quality are addressed separately under these headings.

6.65 There are four mainline rail stations within short walking distance (King's Cross, St Pancras, King's Cross Thameslink and Euston), six Underground lines and a comprehensive bus network. King's Cross therefore has the best public transport accessibility in London.

6.66 Currently at King's Cross/St Pancras and Euston stations, nearly three quarters of National Rail passengers are interchanging to and from Underground services. The proposals would create a new commercial cluster at King's Cross and thereby ameliorate some of the problems of onward interchange and overcrowding. Significant numbers of employees arriving by National Rail would not need to interchange but would be able to easily access the King's Cross Central development adjacent to the stations.



6.67 Four theoretical Development Test Scenarios have been identified for the Main Site to determine and assess 'worst case' transport impacts for each transport mode, in particular peak hours. The number of trips generated by the Test Scenarios is based on the quantity of the different land uses and assumptions made about the number of trips for each use (for example retail uses create more trips than residential ones). Overall, the revised floorspace proposals (see Tables 1 and 2) and changes in the trip generation rates used result in a lower trip demand than reported in the May 2004 NTS. In the peak hours, the number of inbound trips in the am peak could reach around 10,200 and in the pm peak the outbound trips could peak at around 10,500. The vast majority of these trips would use public transport, walk or cycle. Most trips would be by mainline rail or Underground. Predicted trips on the highway network would be 12% lower than the 600 two-way vehicle trips (in the morning and evening peak hours) reported in the May 2004 NTS.

6.68 For a development of this scale, which would be developed over a period of more than a decade, it is likely that the trip distribution and travel patterns of users would evolve and distribute taking account of the Available Capacity on the rail and Underground networks.



6.69 The assessment of impact on rail and London Underground networks has considered various Demand Profiles and Capacity States, based on trip distributions and transport infrastructure states that could occur in the future. For example, the 'base' capacity state includes only committed schemes i.e. the CTRL and Public Private Partnership (PPP) upgrades on the London Underground services. Other capacity states considered include new infrastructure, for example King's Cross Station Enhancement.

6.70 Whichever Demand Profile or Capacity State occurs in the future, the overall conclusion is that the trips generated by King's Cross Central would be well within the overall Available Capacity on the rail networks (including the London Underground). Around 85% of the Available Capacity on rail modes would be available for other demands, such as background growth.

6.71 An assessment of the 'worst case' interim year (2011) shows that the King's Cross Central development would utilise 5% or less of rail and LUL Available Capacity.

6.72 An assessment has been undertaken of the LUL station capacity based on Design Year development flows and the completed station upgrade configuration. The results indicate that the King's Cross Central development flows could be accommodated within the LUL station satisfactorily in the Design Year with the committed PPP upgrades.

6.73 The development would generate significant 'tidal' peak pedestrian flows heading northbound from the stations in the morning and returning southbound in the evening. The highest peak would occur in the pm peak hour when total two-way trips would be 13,250. This is lower than reported in the May 2004 NTS.

6.74 A new fully signalised junction between Goods Way/Boulevard and the Granary would ensure that priority is given to the north/south pedestrian flows and public transport. The predicted traffic on Goods Way would be accommodated and pedestrian wait times between crossings would be kept to a minimum.

6.75 The peak bus demand would be around 8% lower than the 1,500 two way trips reported in the May 2004 NTS. Whilst the majority of these trips would be accommodated by the 2011 London Bus projected service pattern, some capacity shortfalls would potentially be experienced along the York Way and Pentonville Road corridors.

6.76 More generally, the King's Cross Central development provides an opportunity to enhance and improve the viability of bus services in the area. The additional demand generated by King's Cross Central would provide bus operators with the opportunity of enhancing services and routes.

6.77 The increase in road traffic due to the King's Cross Central development proposals would be less than 5% on most routes. In certain peak hours York Way, Goods Way, Pancras Way and Caledonian Road would experience higher increases, generally up to around 10%. The increase in traffic on York Way in the Saturday peak hour when the existing flows are lower could approach 15% of the existing flows.

6.78 The network could generally accommodate the predicted traffic increases. Computer modelling shows that the junctions would operate within capacity with the completed development. However, as the development becomes more fully occupied, there could be additional queuing at the existing mini-roundabout junction of York Way and Market Road. A possible signalised junction re-arrangement for this mini-roundabout would reduce this queuing impact. In addition, there is a long-term option to improve/signalise the Caledonian Road/Brewery Road junction, providing crossing facilities for pedestrians.

6.79 These possible junction improvements are not part of the submitted proposals. Rather, they are long-term, possible 'further mitigation' responses to traffic flows, calculated on a series of worst-case scenarios, for the completed development in the Design Year of 2020.



### Socio-economics

6.80 King's Cross Central is large enough to have effects on a range of socio-economic factors for residential and working communities across a large part of north London. It would also introduce a mix of new residents and employment opportunities that could underpin an economic and social revival of communities that are currently experiencing severe levels of deprivation and exclusion.

6.81 Once complete, accounting for displacement (of some existing businesses) and multiplier effects<sup>3</sup>, a range of between 22,288 and 25,105 full time equivalent jobs would be created (the May 2004 NTS reported between 24,773 and 29,496). Up to 8,383 of these (full time equivalent) jobs are likely to be taken by local residents in the Central and Wider Impact Zones<sup>4</sup> (the May 2004 NTS predicted up to 8,849), without any specific positive interventions (job brokerage and skills training initiatives, for example, could increase these local employment figures). The proposed development would have a major beneficial impact in terms of job creation.

6.82 At the same time, the creation of a new office/commercial cluster would encourage the redevelopment and refurbishment of antiquated, vacant, commercial buildings such as those on Pentonville Road, King's Cross Road and Gray's Inn Road. There are other potential development plots behind the British Library, at Vale Royal and along Market Road. These wider changes would spread employment opportunities and further transform the area into a modern employment district for London.

6.83 The number of local jobs created would significantly increase the potential total 'spend' in local services, businesses and shops, enabling them to increase income and possibly expand and improve. There would be a moderate beneficial impact on local income levels, with far-reaching implications for the local economy and individual social and economic circumstances.

<sup>3</sup>Multiplier effects; economic activities (jobs, expenditure or income) that would result from knock-on indirect effects of the proposed development.

<sup>4</sup>The Central Impact Zone is defined by the following Camden and Islington Wards - Caledonian, King's Cross, St Pancras and Somers Town.  
The Wider Impact Zone is defined by the following Camden and Islington Wards - Barnsbury, Bloomsbury, Clerkenwell, Cantelowses, Holborn and Covent Garden, Holloway and Regents Park.

6.84 The proposed development would provide 1,700 new homes on the Main Site, with up to an additional 246 on the Triangle Site, reintroducing a 24- hour residential presence in the area and creating somewhere between 594 and 934 affordable/low-cost units across the Main Site and the Triangle Site. A mix of different unit sizes would be provided, with a range of small units for which there is high demand and a significant number of family sized (affordable housing) units, that are in short supply. In addition, up to 650 student housing units are proposed on the Main site.

6.85 The level of affordable housing, the full range of intermediate housing products proposed, and the opportunity to target a proportion of these directly at existing Council/RSL tenants would have beneficial effects of moderate significance. The proposals provide scope for a significant net increase in affordable/low cost housing in the area, catering for identified housing needs of low income groups with wider, beneficial structural effects.

6.86 The proposed development could generate a child population of between 790 and 857 across the whole site (the May 2004 NTS reported a predicted child population of 757 to 1,025). This would include between 276 and 300 primary school aged children and between 276 and 300 secondary school children.

6.87 The proposals include provision for a Children's Centre and a 2-form entry primary school: the latter could accommodate up to 420 pupils which would more than meet the needs of the proposed development. The spare capacity could be filled by children from the immediate vicinity.

6.88 On secondary education, Camden Council have identified options to expand/upgrade local schools within the Borough to accommodate 1 or more additional forms of entry. The development would make a financial contribution to help provide this additional capacity, via a legal agreement.

6.89 Therefore the revised proposals would have a beneficial effect of moderate significance on school capacity.

6.90 The range of new facilities introduced on site, including facilities within Handyside Park and a multi-use games area, and support for projects in local schools would have benefits for educational performance. Given the long construction period, it is children who are currently attending schools that are likely to gain most from the employment and other opportunities generated.



6.91 The impact of the development proposals on local educational performance is expected to be major beneficial.

6.92 In addition, the mix and range of new community and leisure facilities are likely to have a major beneficial impact on the social capital<sup>5</sup> of communities in the Central and Wider Impact Zones. Improved social capital is likely to be a major contributor to regeneration in the area, with knock-on effects on health, income, employment and education.

6.93 King's Cross Central would represent a dramatic change to the local environment and the removal of some 'hotspots' for criminal activity. The high level of management and 'stewardship' proposed are likely to have a major beneficial impact on perceptions of the wider King's Cross area, not just the area within the development boundary.

6.94 Overall, King's Cross Central would result in a major improvement in social and economic conditions in the neighbourhoods that surround it and beyond. The significance of negative impacts on the local population would generally be low.

6.95 The assessment also considers a number of further mitigation measures that could be taken or agreed under joint working with the Local Authorities and their partners to enhance the positive impacts and maximise the regeneration potential of the new development. These range from considering methods of promoting and increasing local employment, to raising the environmental standard of surrounding areas, improving community safety and fostering links between local schools, businesses and higher education.

### Health

6.96 Health effects have been identified based on the predicted impacts on selected determinants of health. The determinant indicators selected for this study include socio-economic determinants (unemployment, ethnicity and unemployment, educational attainment, proportion of homes

judged unfit to live in, crime, social capital), and physical environment determinants (air quality indicators, road traffic accidents, and noise). A literature review has been undertaken to demonstrate the current understanding with regard to linkages between these determinants and specific health effects. In addition, an assessment has been made of the potential effect on health services within the locality of the development. The effects of shadow flicker associated with wind turbines have been assessed as negligible.

6.97 Currently, the site and surrounding area is performing poorly with regard to many of the determinants of health. For example unemployment levels are high, particularly among certain ethnic groups and many people are living in poor quality, unsuitable housing, with few options available for progression. This is supported by health based statistics which show, overall, a lower than average standard of health in the area.

6.98 Through the development of the King's Cross Central proposals, adverse effects on health are identified through:

- some loss of jobs through displacement of existing businesses;
- very small changes in air quality indicator concentrations at ground level; (The minor effects on air quality described reflect poor background air quality; the additional pollutant loading from the development at ground level would be very small.)

6.99 At the same time, positive effects on health are predicted through:

- new local employment, supported by stimulation of a graduated housing market to maintain community stability;
- positive impacts on local income levels;
- effects on school capacity (through new facilities/resources);
- provision of a primary care health centre to the north of the canal and a walk-in centre to the south of the canal);

- effects on educational performance within local schools;
- the provision of new, good quality housing;
- the creation and management of new high quality environments, to reduce crime and the fear of crime and enhance perceptions of King's Cross;
- the provision of new community and leisure facilities and opportunities for exercise (the revised proposals include public health and fitness facilities in development zone B and a sports centre in development zone Q);
- increased connectivity between Camden and Islington, by opening the site up and providing new routes and spaces with appropriate pedestrian priority.

(Note: Because of the close relationship between health and socio-economic and environmental factors the effects on health repeat many of the findings of other parts of the assessment).

6.100 Provision of new health services described within the Revised Development Specification would provide positive effects beyond the site boundary by addressing under provision of GPs within the locality, providing opportunities for service rationalisation and benefits for staff recruitment/retention through provision of attractive working and living environments.

6.101 Overall, the development is projected to lead to beneficial effects on the health of its new residents and surrounding communities, through positive effects on the determinants of health.

<sup>5</sup>Social Capital includes the institutions and relationships that shape the quality and quantity of everyday life and hold communities together.

## Nature Conservation

6.102 The King's Cross Central site largely comprises previously developed land in an urban setting and its ecology and nature conservation status reflect this. Although a number of individual impacts of the proposals have been identified, in reality the main effects largely arise from the inevitable land take of development resulting in loss of 'wasteland' habitats with consequent effects on species associated with such habitats.

6.103 The assessments of significance below reflect the effects of construction (see Table 3), operations and permanent land-take together, for each part of the site and its nature conservation receptors.

6.104 There would be adverse effects of moderate nature conservation significance on Camley Street Natural Park partly as a result of direct impacts of construction of a new pedestrian and cycleway, and also the long term increased numbers of people in the area and increased night time lighting of the canal towpath opposite.

6.105 Similarly increased disturbance and lighting, and potential discharges from moored boats, would also affect the Regent's Canal (and Canal habitat). Although only a relatively short section of the canal would be affected, the juxtaposition of the canal and Camley Street Natural Park enhances the canal in this area and the predicted effects are assessed as adverse, of minor significance.

6.106 Many of the other nature conservation impacts identified arise from the loss of wasteland or similar habitats and associated species. These would be adverse effects of minor significance. The effect on the built environment habitat would be adverse of moderate significance.

6.107 Sparsely-vegetated sites on nutrient-poor substrates form an important component of urban ecology in London. The nature of these sites is such that they come and go, with bare sites becoming sparsely-vegetated and passing through a succession of stages until overtaken by scrub. As one site is lost in this manner, or is re-developed, another is created by clearance and so the cycle continues.

6.108 The loss of such habitat at King's Cross Central would, on its own, be of no greater consequence than the loss of other local sites. However, the situation is affected not only by the rate at which sites are lost to the habitat mosaic, but also by the rate at which new ones are added. In recent years, the equation has become unbalanced, so

that the loss of sites outstrips their creation and overall there is a net decline.

6.109 The effects on habitats would also affect breeding habitat for black redstart. It is dependent on wasteland sites for its survival. The proposals would halt the cycle of re-use and abandonment of such land over a considerable area. However the adverse effects would be to a degree off-set by the commitment to provide green/brown roofs over a minimum of 15% of the roof area of new buildings within the Main Site, with priority zones identified within Parameter Plan KXC021 (Figure 10). Taking all these factors into account, the overall effects on the black redstart are judged to be adverse and of minor significance.

6.110 Other than predicted adverse effects of minor significance for Red-list and Amber list birds, all other effects on key nature conservation features are assessed as negligible.



Camley Street Natural Park





*Coal and Fish building*

### Water Resources

6.111 The drainage system would be designed so as not to cause any surface ponding on the ground during a 1 in 30 year event or less. For more extreme events, non-building areas such as roads and car parks would be preferentially ponded, such that critical facilities would not be affected. The impacts of ponding of water on the site by rainfall would be a short-term adverse effect of minor significance.

6.112 A 10% reduction in combined discharges to the public combined sewer system is proposed for the Main Site and a 10% reduction in stormwater flows is proposed for The Triangle Site. The risk of flooding of nearby areas from sewers would be reduced as a result. This would be a long term change in risk with a minor beneficial effect.

6.113 Decreased flows to sewers could also impact on water quality in watercourses due to reduced combined sewer overflows. This would result in a long-term change with a minor beneficial effect on water quality.

6.114 The proposed amenity water features, including rills and fountains, would be closed circulating systems of treated water, with any overflows to the public combined sewers within the agreed discharge constraints for the site. The impacts would be negligible.

6.115 Water quality of the canal could be affected by an increased number of moored boats. This would be regulated by British Waterways and could result in a long term minor, adverse impact locally, although any increase in pollution at the site would be offset by a corresponding decrease elsewhere as a result of boat re-location.

6.116 Groundwater quality could be impacted by water soaking into the ground causing long-term migration of contaminants. However, remediation of contaminated ground would result in this being a minor beneficial effect.

### Soils and Contamination

6.114 The past land uses of the King's Cross Central site have resulted in some contamination of ground and local perched groundwater. The proposed development would involve excavation for foundations, basements and utility trenches. There would also be earthworks associated with achieving the finished levels of the development. It is likely that some ground remediation would be required as part of the redevelopment.

6.118 Existing site investigation records have been reviewed, and these have informed the proposed remediation strategy. The strategy for each part of the site would be implemented through a plan approved by the local planning authority. Decontamination of the site would be validated by testing during and after the remediation works.

6.119 Assessment of the environmental impacts has found that the proposed remediation and development would result in negligible or beneficial effects in all categories.

6.120 The combination of the removal, treatment and encapsulation of residual contaminants during remediation and the mainly impermeable nature of the development would have an overall beneficial effect on the environment.

## Noise and Vibration

6.121 The main noise impact caused by the operation of the King's Cross Central development would be the change in traffic noise levels along roads leading to and from the site due to the additional traffic generated by the scheme. The changes in noise level have been calculated for the main access routes in the vicinity of the development and these changes have been found to be not perceptible. The effects are considered to be of negligible significance.

6.122 The operation of the development is not anticipated to give rise to any perceptible vibration at locations outside of the development.

6.123 The gas governor currently located towards the south of the development site would be moved to a location nearer the Regent's Canal. This location is away from residential properties and is subject to road traffic noise. Consequently noise caused by this equipment would be of negligible significance.

6.124 The likely noise and vibration effects of the proposed wind turbines is considered to be of negligible significance.

## Air Quality and Climate Change

6.125 Existing air quality in the area does not comply with the Government's Air Quality Objectives. Therefore, the London Boroughs of Camden and Islington have both declared Air Quality Management Areas (AQMAs) and proposed measures to improve the situation in their areas.

6.126 The potential impacts of changes in traffic flows and heating emissions from the King's Cross Central development on air quality have been assessed. Due to the location of the site, with good public transport links, the scheme is not likely to significantly increase traffic flows in the area, therefore the change in pollutant concentrations from road traffic, even at worst case locations and using worst case assumptions, would be very small.

6.127 The revised proposals incorporate Combined Heat and Power/Combined Cooling Heat and Power (C(C)HP) and the potential future use of biomass boilers within the development. Worst case assumptions have been made about the possible gas demand for the development including C(C)HP and the technology that would be utilised for heating plant. On this basis, the development would lead to a small increase in nitrogen oxides and carbon dioxide emissions and a medium increase in PM<sub>10</sub> emissions. These emissions would be at height and would lead to very small changes in concentrations of nitrogen dioxide and PM<sub>10</sub> at ground level.

6.128 The overall impact is classified as minor adverse, due to its situation in an area where concentrations are expected to be above the air quality objectives in any event.

6.129 Carbon dioxide is a global pollutant, which does not have any direct local effects. Local emissions from biomass boilers would be carbon neutral overall, as the use of this source would not contribute to the natural global carbon cycle.

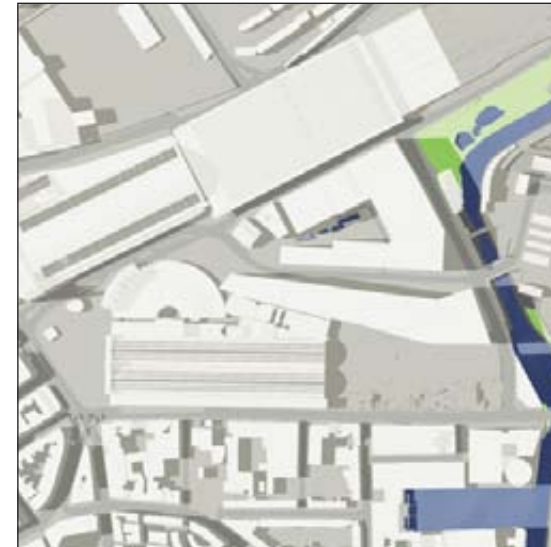
## Microclimate

6.130 The site lies within the urban context of central London and buildings within and adjacent to the site influence wind flow patterns at pedestrian level and cast shadow upon nearby public realm. The wind climate is typical for central London, with prevailing winds from the south-west and north-east. The site occupies a gentle south-facing aspect.

6.131 Some localised increases in wind speed would arise from the proposed site layout, particularly where open space would be located to the windward side of substantial structures. Nevertheless, pedestrian level wind conditions would be comfortable for the proposed uses throughout the site.

6.132 All areas of public realm would receive some degree of sunlight throughout the day during spring, summer and autumn and would therefore be suitable for the proposed uses. Solar access would reduce during winter. Principal new open spaces including Station Square, Granary Square, Handyside Park, York Square and Cubitt Park/Square (formerly Long Park) would enjoy good levels of solar access, particularly during spring, summer and autumn.

6.133 The projected shade patterns for King's Cross Central are typical of city streets and squares with some shade at different times of the day (depending on orientation) and less sunlight in the winter as a result of the low sun. Areas in shadow would still receive daylight even though they would not receive direct sunlight.



Shading Plan: 1200 March 21st

6.134 The proposed development south of the canal would establish extensive new public realm for mixed active and passive uses, with a principal north-south orientation that optimises solar access. It is considered that the overall solar shading effect for the Southern Area is beneficial, of minor significance

6.135 Development south of Goods Way would increase shading of the canal area and the overall effect on the Regent's Canal (incorporating Camley Street Natural Park) is assessed as an adverse effect, of minor significance.

6.136 Within the Northern Area the establishment of extensive new public realm for mixed active and passive uses on former vacant and under-used land, along a principal north-south orientation would optimise solar access. East-west orientated routes would have less solar access. The overall effect on the Northern Area (including the Triangle Site) is assessed as beneficial of minor significance.



Shading Plan: 1400 March 21st

#### Urban Services

6.137 New power supplies to the site would be provided from Longford Street and City Road substations. There would be some minor adverse effects from using the spare capacity at Longford Street. However, the provision of new supplies to the site from the City Road substation and a new primary substation on site is considered to provide a benefit to the local area surrounding King's Cross since it would provide the potential for further additional capacity to supply other developments and load growth.

6.138 The on-site separation of storm and foul flows and any diversion of the Camden Sewer away from the Granary building would enhance future flexibility and remove constraints. These would be beneficial effects.

6.139 New water supplies to the site would require upstream reinforcement of the existing Thames Water resource and distribution network. These works would be part of Thames Water's regulated network development enhancement. Enhancement of the existing local network would provide opportunities for others, with beneficial effects of minor significance.

#### Waste

6.140 It is estimated that up to 1,800 tonnes of domestic waste and 20,500 tonnes of commercial waste could be generated by the development per annum. Domestic waste would be collected and disposed of by the London Boroughs of Camden and Islington. Industrial and commercial waste would be collected by appropriately licensed waste management companies. This would be managed and disposed of through the facilities that are available at the time. Waste management would be regulated by the requirements of the Environmental Protection Act 1990 Part II including the 'Duty of Care'.

#### Inter-relationships between Effects

6.141 Inter-relationships between effects have been addressed throughout the EIA process and some of the main ones are explained here. For example, heritage issues are inextricably linked to considerations of townscape and views and the two topics have been assessed in conjunction with one another. There are also clear inter-relationships between a number of individual socio-economic factors and indeed between these factors and community health. For example, the creation of homes, jobs and a safer environment are likely to bring health benefits to the local population.

6.142 Changes in traffic levels result in changes to the environment. For example they lead to changes in noise and/or air quality conditions. Changes in traffic induced levels of noise and air quality may also contribute to effects on health. At the same time, there may be indirect beneficial effects on health through changes in accessibility to public transport, leading to improvements in access to jobs, community facilities and recreation.

6.143 The introduction of rooftop wind turbines would improve the environmental performance of the development by generating renewable energy on site but they are likely to have adverse effects on townscape/views along York Way.



### Effects Without the Triangle Site

6.144 If the Main Site was developed without the Triangle Site, the effects on the environment would not be materially different from that set out above for the full (Main Site plus Triangle Site) development. There are some instances where the effects would be different and examples are given here.

6.145 Some of the benefits of comprehensive development would be lost; for example in the context of cultural heritage and townscape, the 'gateway' to the site would be weakened by the lack of definition to the east. With respect to soils and contamination, in so far as there would be potential benefits from the removal of any contaminated material from the Triangle Site, these benefits would not be realised.

6.146 For microclimate, should the Triangle Site not be developed, the Main Site frontage on York Way could experience accelerated wind flows. However, with proposed tree planting along the western edge of York Way dissipating wind speeds in any event, the effect on York Way would be broadly the same.

6.147 There would be no material effect on the requirement for off site reinforcement of urban services, but there would be no need for minor utility connections from supplies in York Way, or across York Way from the Main Site, and no need to discharge foul sewage to the York Way combined sewer.



*The Triangle Site, September 2005*



*Euston Road frontage of King's Cross Station*

### Effects with King's Cross Station Enhancement

6.148 If the King's Cross Station Enhancement goes ahead, the adverse effects on the environment would not be materially different in significance than for the development of King's Cross Central alone. There are some instances where the effects would be different and examples are given here.

6.149 In the case of cultural heritage and townscape, the potential cumulative effects would be beneficial, with the benefits to the Euston Road frontage, from the removal of the temporary concourse, outweighing any adverse effects from the additional development and works.

6.150 For transport, with the King's Cross Station Enhancement, the impact of the King's Cross Central development on rail and London Underground Available Capacity would be slightly reduced.

6.151 For microclimate, development within the gap between King's Cross Station and the Great Northern Hotel to provide a King's Cross Station Enhancement concourse would reduce channelling of south-westerly winds, improving pedestrian level conditions to the north, and at the entrance to the Boulevard. The introduction of the concourse would slightly extend shadow northwards. However, the northern part of Station Square would continue to receive good levels of solar access from mid morning to mid afternoon in spring and autumn, extending through to late afternoon in summer. Removal of the temporary concourse would give rise to minor wind turbulence at the base of the south facing elevation of King's Cross station.

Table 4: Summary of King's Cross Central Operational Effects

	Summary of Effects	Type	Significance	Changes in significance due to Scheme Revisions
Cultural Heritage and Townscape	Demolition of one Listed Building and 3 unlisted heritage buildings within Conservation Areas; other buildings and structures would be refurbished and embedded within the new development, including the Listed gasholder guide frames. The character and appearance of the Conservation Areas would change. New high-quality streets and civic spaces would replace fragmented areas of vacant and under-used land. There would be a net increase in tree planting (in appropriate areas) and many historic surfaces would be restored/re-used. Some local views would be lost and new views created. Public access to the site would increase. The overall appearance of the site would be enhanced.  Visual impact of wind turbines acceptable in context of industrial archaeology and scale and character of modern sustainable development but is likely to give rise to adverse effects along York Way.	Many adverse effects of minor-moderate significance and many beneficial effects of minor-major significance. The net effects on heritage, townscape and views would be beneficial, of moderate significance.		No change
Archaeology	Possible disturbance to / loss of buried archaeological features through new basements, piling and other foundations, regrading of site levels, insertion of infrastructure, services and landscape features and other works. Any effects are likely to relate to the Industrial and Modern periods but chance finds of other periods cannot be ruled out.  The development and post-site works could make a significant contribution and aid with setting future archaeological research objectives for King's Cross and Greater London.	Any effects on industrial/modern resources are likely to be adverse, of minor-moderate significance. (Other adverse effects are likely to be of lower significance).  Could be beneficial, of moderate significance.		No change  No change
Transport	The scale of the regeneration proposals is such that the travel demands arising from the development would be significant and complex, with a range of both beneficial and adverse effects. It is likely that the trip distribution and travel patterns of users would evolve over time and distribute taking account of available capacity on the public transport (mainline rail, Underground and bus) and highway networks.  At the same time, the development would create a new commercial cluster at the most accessible site in London by public transport and reduce the need for interchange from various modes.  The revised proposals would have a reduced trip demand compared to the May 2004 proposals.	The assessment finds that the trip demands of the development could be accommodated on the various public transport and highway networks, within existing and committed transport facilities and services.		No change
Socio-economic	Creation of new jobs, together with displacement and multiplier effects Effects on local employment and income levels New housing provision/new tenure profile  Effects on school capacity Effects on educational performance  Effects on social capital of local communities. Effects on crime, fear of crime and perceptions of King's Cross.	Beneficial (overall) Beneficial Beneficial  Beneficial Beneficial  Beneficial Beneficial	Major Moderate Moderate  Moderate Major  Major Major	No change No change Formerly Beneficial Minor-Moderate Formerly Adverse Moderate Formerly Beneficial Moderate-Major No change No change
Health	<i>Effects on socio-economic factors leading to health effects:</i> Creation of new jobs, together with displacement and multiplier effects. Effects on local employment and income levels. Effects on school capacity. Effects on educational performance.  Effects on social capital of local communities. Increase in exercise opportunities. Provision of new, good quality housing.  Creation of a housing ladder and other, wider/indirect benefits. Effects on crime, fear of crime and perceptions of King's Cross.  <i>Effects on physical environment factors, leading to health effects:</i> Effects on air quality indicator concentrations. Potential for reduction in road traffic accident rate. Noise from additional traffic and plant/machinery.	Beneficial (overall) Beneficial Beneficial Beneficial  Beneficial Beneficial Beneficial  Beneficial Beneficial  Adverse Beneficial Negligible	Major Moderate Moderate Major  Major Minor-Moderate Moderate  Moderate-Major Major  Minor Moderate n/a	No change No change Formerly Adverse Moderate Formerly Beneficial Moderate - Major No change Formerly Beneficial Minor Formerly Beneficial Minor-Moderate No change No change No change

	Summary of Effects	Type	Significance	Changes in significance due to Scheme Revisions
Health	Effects on pressurised health services (with new provision/investment to meet the needs of the development).	Beneficial	Moderate	Formerly Beneficial Minor - Moderate (assuming new provision)
	Effects on recruitment and retention of health care staff and opportunities for rationalisation.	Beneficial	Moderate-Major	Formerly Beneficial Minor - Moderate
	Effects of shadow flicker from wind turbines.	Adverse	Negligible	New
Nature Conservation	The main effects largely arise from the inevitable land take of the proposals resulting in loss of 'wasteland' habitats with consequent effects on species associated with such habitats.	Adverse	Moderate	No change
	Effects on Camley Street Natural Park from new pedestrian and cycle link plus increased population pressure and increased night-time lighting in the area, and on Built Environment habitat.	Adverse	Minor	Formerly Adverse Moderate
	Effects on Regent's Canal, Canals, Wasteland, Canalsides and Railsides, Waterways and Wetlands and black redstart.	Adverse	Minor	No change
	Effect on Red- and Amber-list birds.	Adverse	Negligible	New
	Effect on other birds (from wind turbines).	Adverse	Negligible	Formerly Adverse Minor
	Effects on Terrestrial invertebrates.	Mostly adverse	Negligible (Minor beneficial for Railside Land in Islington)	No change
Water Resources	Ponding of water on the site.	Adverse	Minor	No change
	Reduced risk of flooding from sewers.	Beneficial	Minor	No change
	Decreased flows to sewers leading to changes in quality of watercourses.	Beneficial	Minor	No change
	Effects of new water features.	Negligible	n/a	No change
	More moored boats along the Regent's Canal affecting water quality.	Adverse	Minor	No change
	Effects on ground water quality of rain water infiltrating the (remediated) ground.	Beneficial	Minor	No change
Soils and Contamination	Remediation and development of the site (with impermeable surfaces) would reduce the risk of contact between users of the site and any contaminated material.	Beneficial overall	Minor	No change
Noise and Vibration	Change in traffic noise levels along roads leading to and from the site and vibration effects from operation of the development. Noise effects of the relocated gas governor. Effects from wind turbines on existing and proposed residential uses.		Negligible	No change
Air Quality and Climate Change	Changes in traffic flows (see Transport above) would lead to very small changes in pollutant concentrations. C(C)HP and other heating plant within the development would lead to a small increase in nitrogen oxides and carbon dioxide emissions and a medium increase in PM <sub>10</sub> emissions. These emissions would be at height and would lead to very small changes in concentrations of nitrogen dioxide and PM <sub>10</sub> at ground level. Carbon dioxide is a global pollutant, which does not have any direct local effects.	Adverse	Minor (because within AQMA)	No change
Microclimate	There would be some localised increases in wind speeds in parts of the development. Nevertheless, pedestrian level wind conditions are likely to be comfortable for the proposed uses throughout the site. All areas of principal public realm would receive sunlight throughout the day during Spring, Summer and Autumn and would therefore be suitable for the proposed uses. The projected shade patterns are typical of city streets and squares. North and south of the canal the development would establish extensive new public realm with an orientation that optimises solar access. The Regent's Canal would suffer some increase in shading as a result of the development. Proposals to install wind turbines on the roofs of a number of buildings within the development would not have any impact on the pedestrian level wind environment.	Beneficial Adverse	Minor Minor	No change No change
Urban Services	Utilising spare capacity for power supplies from Longford Street. Provision of new power supplies to the site and new primary substation (potential for further enhancement to serve other developments). Provision of wind turbines and other renewable energy sources. Separation on-site of storm and foul flows (enhances future flexibility). Diversion of Camden sewer (if implemented; sewer is currently beneath a building). Reduced peak flows to sewers. Introduction and operation of new water supplies to the site (enhancement of the local network provides opportunities for others).	Adverse Beneficial Beneficial Beneficial Beneficial Beneficial	Minor Minor Minor Moderate Minor Minor	No change No change New No change No change No change
Effects without the Triangle Site	Small reduction in area and corresponding reductions in some adverse and beneficial effects (for example there would be no need for new services/works across York Way).	No significant changes to findings above; some benefits of comprehensive development would be lost.		No change
Effects with King's Cross Station Enhancement	Different massing of development and public realm arrangement between the stations, leading to different townscape/heritage, transport and microclimate effects.	No significant effects to findings above for adverse effects; there would be townscape benefits to the Euston Road frontage from the removal of the temporary concourse and also transport benefits.		No change



## Overall Summary

6.152 Early consultation identified the construction phase as of most concern to local people. The large scale of the proposed development and the long timeframe suggested the potential for significant adverse effects on areas adjacent to the site. However the assessment has shown that the effects would be lower than might be anticipated for an inner city location; this is largely because the site is enclosed by substantial railway development on three sides, restricting the main effects on residential properties and open space to the eastern boundary (York Way) and moorings on the Regent's Canal.

6.153 Most of the construction effects would be confined within the site and the adverse effects are generally assessed as of negligible or minor significance, with some moderate adverse effects. Not all effects would be adverse; for example the creation of up to 900 (full time equivalent) local jobs during the construction phase would bring benefits to the area.

6.154 The adverse operational effects are generally confined to effects on resources such as the loss of some heritage buildings and wasteland habitats. Adverse effects on air quality arise from very small increases in pollutant concentrations at ground level, from traffic and heating plant, in the context of poor background levels and Air Quality Management Area designations.

6.155 The operational effects on people would mostly be beneficial and many of these beneficial effects are of major significance, as one might expect from a regeneration project of this scale. These effects include the retention and refurbishment of the heritage buildings and the creation of jobs, housing and a high quality public realm.

6.156 Discussions with the Councils and others, since the applications were submitted in May 2004 have led to changes to the scheme, offering additional benefits, notably in respect of cultural heritage and townscape, community facilities and environmental performance.



*King's Cross Central site looking south, September 2005*



