

## 6. Demolition and Construction

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### 6.1 Introduction

6.1.1 This chapter describes the demolition and construction activities relating to the Proposed Development. In particular it describes the following aspects:

- The existing Site
- The proposed works
- The construction logistics
- The construction techniques
- The construction practices
- Relationship to other construction projects in the immediate vicinity
- Environmental Issues
- Anticipated Programme

6.1.2 This chapter describes the demolition and construction activities which are then assessed within other sections of the Environmental Statement.

### 6.2 Basic Assumptions

6.2.1 The phasing and logistics for the Proposed Development assume that construction works will be undertaken in phases. The indicative phasing is set out in Section 6.4 below.

6.2.3 Operations on the Site are assumed to remain as existing until the respective phase of the Proposed Development is commenced.

6.2.3 It is intended wherever possible to utilise existing buildings and site hard standings on and within future phases of the Proposed Development to provide materials storage, vehicle holding and site accommodation for earlier phases of the Proposed Development.

### **Existing buildings to be retained**

6.2.4 The Proposed Development retains three buildings within the Site as part of the Proposed Development. These are shown on Parameter Plan 003. These buildings are within the existing Excelsior Industrial Estates. The buildings are as follows:

- Plot 5 Excelsior Rollins House (incorporating Live Work Units )
- Plot 2 Excelsior - Guild House
- Millwall FC Stadium

6.2.5 As part of the Proposed Development Guild House will be extended to provide additional accommodation on upper floors. Millwall FC Stadium will be subject to façade improvements.

## **6.3 Basic elements of development for construction**

### **Demolition**

6.3.1 As part of their lease obligations the outgoing tenants will be obliged to remove their fixtures and fittings. These will be reused in their operations on other sites. Any unit which is to be demolished will be vacated prior to demolition.

6.3.2 A full type 3 asbestos survey will be completed on all buildings prior to commencement of demolition. All asbestos containing materials will be removed in a controlled manner which is in accordance with current regulations and disposed to a licensed waste tip.

6.3.3 All heating, water pipework and general metal contained within the buildings will be carefully removed and taken away for recycling prior to the main demolition. Similarly all timber and plasterboard will be set aside in separate waste containers and will be taken away for recycling. Items such as roller shutter doors, gas radiant heaters and high bay lighting can be reclaimed for reuse on other sites dependant on market demand. If there is a commercial market demand then the portal frames may be carefully taken down and reused elsewhere.

6.3.4 Prior to the commencement of demolition of each part of the existing Site , a demolition survey report will be prepared by a structural engineer. This will identify any risk or issues which need to be addressed as part of the contractors' proposed demolition methodology and sequencing. It will also be necessary to disconnect the main incomings services into the buildings at the roadside.

6.3.5 All masonry is likely to be crushed on site to a grade 6F2 or similar. This material can be reused for general fill across the Site. The concrete slabs will be crushed and may be suitable for reuse on site as part of a piling mat and all reinforcing bars will be removed for recycling.

- 6.3.6 All major demolition works will be undertaken using a long reach excavator machine and all works will be undertaken with sufficient consideration to minimise the impact of demolition on the environment. All demolition works will also be undertaken in accordance with the guidelines set out in the Mayor of London's Best Practice Guidance entitled "The Control of dust and emissions from construction and demolition"
- 6.3.7 The sequencing of the breaking up of the ground floors slabs and removal of footings or road surfaces within each development phase will be carefully considered in order to mitigate the impact of any contaminated ground on the Site or the underlying groundwater across the Site, as well as the environmental impact of trafficking across unsealed roads.

### **Infrastructure**

#### **Utility Services**

- 6.3.8 The existing services in relation to the Site are shown on drawing number 8450-Study-4000 and the existing services in relation to the Proposed Development are shown on drawing number 8450-Study-4020. These drawings are contained in Technical Appendix 6.1. Prior to undertaking any infrastructure works across the Site it will be necessary for a full survey to be undertaken to accurately log the position of the services within the ground and in the proposed work area. This may involve electronic scanning for underground services or alternatively formation of trial holes.
- 6.3.9 Infrastructure works are likely to extend to service reinforcements, diversions and realignments to suit the Proposed Development. These works will relate to gas, water, drainage, electricity and media communications. Detailed network analysis would be carried out in conjunction with the utility companies to establish system capacities and to establish the optimum solutions for each service with regard to onsite and offsite network reinforcement to minimise impact to the local community. The existing networks would be extended into each plot to serve the Proposed Development as the plots are developed.
- 6.3.10 The following drawings diagrammatically illustrate the potential utilities infrastructure for the Proposed Development:
- 8450-Study-4100 – Proposed Gas Distribution
  - 8450-Study-4101 – Proposed Telecomms Distribution
  - 8450-Study-4102 – Proposed Water Distribution
  - 8450-Study-4103 – Proposed Sewer Distribution
  - 8450-Study-4104 – Proposed Electrical Distribution (UKPN)
  - 8450-Study-4105 – Proposed Electrical Distribution (Private Wire Network)
  - 8450-Study-4106 – Proposed Indicative Community Heat Network

6.3.11 All these drawings are included at Technical Appendix 6.1.

## **Electricity**

### **Existing Services**

6.3.12 The local distribution network operator (DNO) is UK Power Networks (UKPN), formerly EDF.

6.3.13 The record drawings obtained from UKPN show that there are four existing distribution substations located within the vicinity of The Site providing medium voltage (MV) and low voltage (LV) supplies to buildings located on and adjacent to The Site.

6.3.14 The existing MV and LV cable distribution routes follow the existing road layout except to the west of Millwall FC Stadium where they traverse the large car park north of Stockholm Road on a north/south axis.

6.3.15 An extra high voltage (EHV) circuit is routed along the south side of Surrey Canal Road. This is labelled EHV Route 389 on the UK Power Networks record drawings.

### **Diversions**

6.3.16 Three of the existing substations are located within The Site boundary and clash with new building locations as shown on the Proposed Parameter Plans. These will need to be re-provided as either new standalone buildings or be incorporated into the proposed new buildings. Each substation will need to be protected during the relevant construction phases to ensure existing non-redundant supplies are maintained until the replacement substation and services are installed.

6.3.17 The following MV/LV sections of cables may require re-routing:

- The cables routed across the Millwall FC Stadium large car park north of Stockholm Road to suit the Proposed Development layout for Stockholm 1 and Stadium Avenue plots.
- The cables currently routed around the north end of the Lions Centre from Bolina Road to a substation located to the north east of the Millwall FC Stadium to suit the Proposed Development layout for the Bolina East plot.
- The cables routed under the overhang of the Stadium 1 plot may be affected if this corner of the Millwall FC stadium is filled in at ground level with development.
- The cables routed from the existing substation within the middle of the Excelsior plot to the south side of Surrey Canal Road.
- The cables routed from an existing substation located on the eastern edge of Stockholm 2 plot to the Surrey Canal Road.

- The cables routed along Surrey Canal Road due to creation of new road junctions.

The existing verges are significantly higher than the road level and therefore the cables will need to be lowered to enable the junctions to be formed. It is unlikely that the existing cables are deep enough for the ground level to be lowered whilst maintaining the minimum requirements for cable cover.

6.3.18 The actual requirement for diversions would require detailed site investigations to establish precise locations as the utility company record drawings are not always accurate. UK Power Networks will also need to carry out their own study to confirm which cables are live and which are redundant

6.3.19 It should be noted the EHV Cable Route 389 routed along Surrey Canal Road is an important part of the network and therefore works to this cable need to be avoided to minimise disruption and costs. Based on the proposed levels of the new road junctions works to this cable route would be avoided.

6.3.20 The existing individual supplies that serve buildings which become redundant due to the Proposed Development would need to be removed to suit the construction phasing.

#### **Loads and Capacity for Proposed Development.**

6.3.21 The electrical demand for the Proposed Development has been estimated as a worst case scenario. This scenario encompasses the land uses that could be incorporated as shown on the Parameter Plans and the maximum floor space detailed in the Development Specification.

For certain land uses the Development Specification allows for a range of floor areas and therefore the worst case scenario utilises the maximum floor space for the highest demand usages.

The estimated worst case demands for each land use are tabulated below:

Table 6.1: Electrical Demand Loads

<b>Land Use</b>	<b>Electrical Load (kVA)</b>
A1/A2 - Retail	430
A3/A4 – Cafes/Restaurants	490
A5 – Hot Food Takeaways	40
B1 -Business	1800
C1 - Hotels	2400
C3 - Residential	6725
D1 - Community	360
D2 – Leisure and Entertainment	950
<b>TOTAL</b>	<b>13195</b>

6.3.22 The estimated total worst case demand for the Proposed Development, excluding the Millwall FC Stadium, is approximately 13.2MVA. The existing demand for The Site is estimated at between 5MVA and 8MVA. Therefore the electrical infrastructure would need to support an additional 5.2MVA to 8.2MVA load.

6.3.23 The Energy Strategy document discusses the potential for providing a Private Wire Network (PWN) for The Site served from SELCHP. A new MV distribution system would need to be provided to connect to a new or existing primary substation located at the north side of the SELCHP building. A new MV network would be provided around The Site to serve new distribution substations (MV/LV).

6.3.24 Should this strategy be adopted then the existing UK Power Network's system would not require reinforcement. If however, it is not adopted then the existing UK Power Network would need to be extended to serve new distribution substations (MV/LV) around The Site. UK Power Networks would need to carry out a detailed network study to establish if the Proposed Development can be supported by the existing infrastructure or if the network needs to be reinforced from local primary substations with additional MV circuits installed primarily along Surrey Canal Road.

## Gas

### Existing Services

6.3.25 From record drawings obtained from Scotia Gas Networks The Site is currently served by:

- An intermediate pressure (IP) gas main (600mm dia.) routed through the Site along Surrey Canal Road;
- Low pressure (LP) mains in Bolina Road (250mm dia. reducing to 180mm dia.);
- Low pressure (LP) mains in Stockholm Road (125mm dia.), and
- Low pressure (LP) mains in Rollins Street (150mm dia.).

6.3.26 All the LP mains appear to be served from a 250mm diameter LP mains located in Ilderton Road. From these mains the existing buildings are served by small diameter individual supply pipes.

### Diversions

6.3.27 The routes of the existing mains follow the existing roads and it appears, from the Proposed Parameter Plans, no diversions would be required due to the proposed buildings. It should be noted that the intermediate pressure main routed along Surrey Canal Road is an important part of the gas main network and therefore works to this pipe need to be avoided to minimise disruption and costs. Based on the proposed levels of the new road junctions works to this gas main route would be avoided.

The existing small diameter individual supply pipes that serve buildings which become redundant due to the Proposed Development would need to be removed to suit the construction phasing. This particularly applies to all the plots in the following plot areas:

- Bolina North
- Orion
- Excelsior

6.3.28 The existing gas supply to Millwall FC Stadium connects into the LP gas network via a gas meter located adjacent to Zampa Road. The exact route of the pipe from the gas meter to Millwall FC stadium needs to be determined as it does not appear on the utility record drawings. This supply would be maintained if it does not require diversion due to the Proposed Development. If diversion is required then a new supply would be installed prior to disconnection of the existing supply in order to minimise disruption.

#### **Loads and Capacity for Proposed Development.**

6.3.29 The gas demand for the Proposed Development has been estimated as a worst case scenario. This scenario encompasses the land uses that could be incorporated as shown on the Parameter Plans and the maximum floor space detailed in the Development Specification. For certain land uses the Development Specification allows for a range of floor areas and therefore the worst case scenario utilises the maximum floor space for the highest demand usages

6.3.30 The estimated worst case demands for each land use are tabulated below:

Table 6.2: Gas Demand Loads

Land Use	Gas Load m <sup>3</sup> /hr
A1/A2 - Retail	47
A3/A4 – Cafes/Restaurants	46
A5 – Hot Food Takeaways	4
B1 -Business	198
C1 - Hotels	237
C3 - Residential	2060
D1 - Community	165
D2 – Leisure and Entertainment	251
TOTAL	3008

6.3.31 Gas demand for The Site is significantly higher than the existing demand.

6.3.32 The Energy Strategy proposes a district heating network to serve the Site fed from SELCHP. However, in order to guarantee supplies standby/backup plant using gas fired boilers is also proposed. It is envisaged that a central energy centre would be located in the Orion plot. A gas supply, probably an intermediate pressure supply, from the existing pipe routed along Surrey Canal Road would be required to serve this facility. New supplies to individual plots would be required to serve, for example restaurant units. These will be served from extensions of the existing low pressure pipe network. The low pressure mains in Zampa Road, Bolina Road and Stockholm Road are likely to require reinforcement. The intermediate

pressure main along Surrey Canal Road is also likely to require reinforcement in order to support the back-up energy centre. Scotia Gas Networks would need to carry out a detailed network study to establish if the Proposed Development can be supported by the existing infrastructure or if the worst case reinforcement scenario described in 1.3.9 is necessary.

## **Water**

### **Existing Services**

6.3.33 From asset location maps obtained from Thames Water The Site is currently served by a combination of the following water mains:

- 4" distribution main routed along Bolina Road;
- 125mm branch main in Stockholm Road served from a distribution main in Ilderton Road;
- Two branch connections served from a trunk main in Surrey Canal Road, and
- 180mm distribution main in Rollins Street.

6.3.34 From these mains the existing buildings are being served via private mains and individual supply pipes.

### **Diversions**

6.3.35 The routes of the existing mains follow existing roads and it appears, from the Proposed Parameter Plans, no diversions would be required due to the proposed buildings. It should be noted that the 300mm main routed along Surrey Canal Road is designated as a trunk main on the water company plans and as such will be a strategic section of their network. Works to this pipe therefore need to be avoided to minimise disruption and costs. Based on the proposed levels of the new road junctions works to this water main would be avoided.

6.3.36 The existing individual supply pipes that serve buildings which become redundant due to the Proposed Development would need to be removed to suit the construction phasing.

6.3.37 The existing water supply to Millwall FC Stadium is routed through Gate 3. The exact route of this pipe needs to be determined as it does not appear on the utility record drawings. This supply would be maintained if it does not require diversion due to the Proposed Development. If diversion is required then a new supply would be installed prior to disconnection of the existing supply in order to minimise disruption.

### Loads and Capacity for Proposed Development.

6.3.38 The water demand for the Proposed Development has been estimated as a worst case scenario. This scenario encompasses the land uses that could be incorporated as shown on the Parameter Plans and the maximum floor space detailed in the Development Specification. For certain land uses the Development Specification allows for a range of floor areas and therefore the worst case scenario utilises the maximum floor space for the highest demand usages.

**The estimated worst case demands for each land use are tabulated below**

Table 6.3: Water Demand Loads

Land Use	Daily Consumption (m <sup>3</sup> )
A1/A2 - Retail	2.0
A3/A4 – Cafes/Restaurants	8.2
A5 – Hot Food Takeaways	1.2.
1 -Business	42.0
C1 - Hotels	30.0
C3 - Residential	732.0
D1 - Community	12.0
D2 – Leisure and Entertainment	8.8
TOTAL	836.2

6.3.39 The 180mm distribution main in Rollins Road may be adequate to serve the Excelsior and Timber Wharf plots of the Proposed Development. However the 4” distribution main in Zampa Road and Bolina Road and the 125mm distribution main in Stockholm Road are likely to require reinforcement.

- 6.3.40 To assess the overall impact of the Proposed Development on the local water mains network the water company would require a study to be carried out to determine the implications and whether the worst case reinforcement scenario as described in 1.4.8 is necessary.
- 6.3.41 It would be necessary to extend new sections of branch mains and supply pipes from the water company's network to supply all new buildings on the Proposed Development.

## **Drainage**

### **Existing Services**

- 6.3.42 From asset location maps obtained from Thames Water the extent of the existing sewers serving The Site include:
- Small local combined sewer commencing at the south end of Bolina Road and running north;
  - Small local combined sewer routed in Ilderton Road commencing at the junction with Stockholm Road and running north, and
  - Large combined sewer which runs east to west along the south side of Surrey Canal Road before turning south to run parallel to the new East London Line and then east to west along Rollins Street before connecting into the trunk sewer in Ilderton Road. The trunk sewer commences at the junction with Stockholm Road and runs south.
- 6.3.43 There are also likely to be private branch sewers running from The Site, draining from individual buildings connecting into the Thames Water sewers.

### **Diversions**

- 6.3.44 The routes of the existing utility sewers follow existing roads and it appears from the Proposed Parameter Plans no diversions would be required.
- 6.3.45 The existing individual drains from buildings which become redundant due to the Proposed Development would need to be removed to suit the construction phasing.
- 6.3.46 The existing drainage outflow from Millwall FC Stadium exits via a pumping station located in the south east corner of the facility to a sewer located on the south side of Surrey Canal Road. The exact route of this pipe needs to be determined as it does not appear on the utility record drawings. This service would be maintained if it does not require diversion due to the

Proposed Development. If diversion is required then a new service will be installed prior to the disconnection of the existing supply in order to minimise disruption.

### Loads and Capacity for Proposed Development.

6.3.47 The foul drainage demand for the Proposed Development has been estimated as a worst case scenario. This scenario encompasses the land uses that could be incorporated as shown on the Parameter Plans and the maximum floor space detailed in the Development Specification. For certain land uses the Development Specification allows for a range of floor areas and therefore the worst case scenario utilises the maximum floor space for the highest demand usages.

6.3.48 The estimated worst case demands for each land use are tabulated below:

Table 6.4: Drainage Demand Loads

Land Use	Daily Load (m <sup>3</sup> )
A1/A2 - Retail	2.3
A3/A4 – Cafes/Restaurants	9.4
A5 – Hot Food Takeaways	1.4
B1 -Business	48.3
C1 - Hotels	34.5
C3 - Residential	841.6
D1 - Community	13.8
D2 – Leisure and Entertainment	12.8
TOTAL	964.1

6.3.49 The sewer routed east to west (Surrey Canal Road/Rollins Street) and Ilderton Road (south) may be adequate to serve the Orion, Excelsior and Timber Wharf plots of the Proposed Development but the sewers routed along Bolina Road and Ilderton Road (north) are likely to require reinforcement in order to serve the Bolina, Stadium, Stadium Avenue, Stockholm, and Senegal Way plots.

6.3.50 A network of new sewers to serve the Proposed Development would be provided from the individual buildings.

6.3.51 To assess the overall impact of the Proposed Development on the local sewer network the water company would require a study to be carried out to determine the implications and whether the worst case reinforcement scenario described in 6.3.50 is necessary.

6.3.52 With regard to surface water drainage the Strategic Flood Risk Assessment identifies a requirement to reduce the peak rainfall rate of runoff arising from the Proposed Development by 50% when compared to that arising from the Site in its existing condition. Sustainable drainage (SUDS) techniques will be incorporated into the design of the development by use of green and brown roofs, permeable paving and open water features. Details are included in the Flood Risk Assessment and Water Resources report.

### **Communications/Media**

#### **General**

6.3.53 New pit and duct networks would be installed throughout the Proposed Development to allow for at least three communication providers (BT, Virgin Media and “others”) to support The Site. The BT and Virgin networks will connect into existing local networks.

#### **BT**

6.3.54 The vicinity of The Site is well served by existing BT infrastructure with services distributed along Bolina Road, Stockholm Road, Surrey Canal Road and Rollins Street.

6.3.55 Due to the creation of new road junctions along Surrey Canal Road some existing manholes will need to be modified as the cover level near to the junctions will be raised.

6.3.56 Detailed site investigations to establish precise locations as the utility company record drawings are not always accurate would be required and BT will also need to carry out their own study. BT would need to reinforce their network with the installation of additional cables within the existing cable duct network serving The Site.

6.3.57 During each construction phase the individual supplies to existing buildings that become redundant due to the Proposed Development would have to be removed.

#### **Virgin Media**

6.3.58 A Virgin Media trunk route passes through The Site along Surrey Canal Road and therefore works to this cable need to be avoided to minimise disruption and costs. Based on the proposed levels of the new road junctions works to this cable route would be avoided.

6.3.59 Although there are distribution services serving residential buildings to the south of Rollins Street there are no distribution services within The Site boundary

6.3.60 Detailed site investigations to establish precise locations as the utility company record drawings are not always accurate would be required and Virgin Media will also need to carry out their own study. However no diversion works are envisaged.

#### **Fibernet (Global Crossing)**

6.3.61 A Fibernet fibre optic service, which forms part of Global Crossings London Metro Network, is routed through The Site along Surrey Canal Road and therefore works to this cable need to be avoided to minimise disruption and costs. Based on the proposed levels of the new road junctions works to this cable route would be avoided.

6.3.62 Detailed site investigations to establish precise locations as the utility company record drawings are not always accurate would be required and Fibernet will also need to carry out their own study. However as stated in 6.3.61 no diversion works are envisaged.

#### **Combined Heat and Power (SELCHP)**

6.3.63 The Energy Strategy is based on the connection of the Proposed Development to the nearby SELCHP, by utilising the waste heat as a source for a community heat network. It is also proposed to provide a private wire electrical system.

6.3.64 The community heating network and the electrical private wire network would require new distribution systems to serve all the buildings of the Proposed Development. An indicative community heating network is illustrated on drawing 4850-Study-4106. The proposed private wire network is illustrated on drawing 4850-Study-4105. These drawings are included in Technical Appendix 6.1.

6.3.65 Both the community heat network and the private wire network will originate from the north end of SELCHP adjacent to the East London Line Extension. Both networks would be routed across the railway line, using an Under Track Crossing. They will then be routed adjacent to the railway line southwards towards Surrey Canal Road via a Network Rail bridge archway. Both services need to cross the Surrey Canal Road to serve the Excelsior and Timber Wharf plots.

6.3.66 As illustrated by the drawings the vast majority of the new networks will be distributed The Site and therefore co-ordination with the existing utility services and their associated

extensions to serve new buildings of the Proposed Development will be relatively straight forward.

6.3.67 The Under Track Crossing, the Network Rail bridge crossing and the Surrey Canal Road crossing are the three key areas which will require detailed investigation and liaison with various parties including Network Rail, landowners, local authorities, traffic authorities and utility companies to ensure minimal disruption.

### **Impact on Existing Users**

6.3.68 During each phase of construction, supplies to non-redundant existing buildings located on and off The Site will need to be maintained and a detailed strategy will be put in place to ensure disruption to Millwall FC Stadium, local businesses and local residents is minimised. Where existing services need to be diverted new supplies would be installed prior to the removal of the existing services to minimise disruption to the disconnection and reconnection element of the works only.

6.3.69 Detailed investigations would be carried out in conjunction with the utility companies and in consultation with local businesses and residents to ensure a robust and detailed strategy is developed, and put in place, prior to works commencing for each construction phase.

6.3.70 Where infrastructure works or investigations are undertaken in public highways then the contractors appointed will be required to obtain all licences and consents for the works from London Borough Lewisham in advance of the works. All works to public highways will be reinstated upon completion of the works.

### **Envac waste system**

6.3.71 The operational waste from the Proposed Development is to be disposed of via the ENVAC waste system. A central waste collection point is proposed to be constructed on the Orion Plot. The system will require the installation of a 500mm diameter carbon steel waste pipe system, through which a vacuum is used to transport waste and recyclables. These pipes will be located within the estate road system as well in the sides of the public highway. The system also requires an electric cable and air hose supply pipe system to be installed within the excavation. The precise location of the pipe will need to be determined following detailed site investigations to find the exact location of all below ground services. An indicative layout for the pipe system is shown on drawing no. F-SUR.C-1 which is in Technical Appendix 6.2

6.3.72 Each building will be fitted out with a series of three waste disposal inlets, which gravity feed into the main pipe network at pre set collection times. The system enables separate collection

of organic recyclables, mixed dry recyclables and residual waste. The number and exact location of each collection point will be advised at the detailed Planning application stage.

6.3.73 The central waste collection station is proposed to be located within the Orion Plot. The approximate size of the station is 400 sq.m and requires a working height of 9m. This collection station requires refuse vehicle access to collect the individual containers.

### **Buildings**

6.3.74 Full details of the Proposed Development are set out in the Development Specification.

### **Open spaces**

6.3.75 The indicative phasing plans set out the extent of the open spaces which will be delivered within each phase of the Proposed Development.

6.3.76 The open and private spaces will be constructed behind hoardings as part of the construction sites. Once a phase of the development has been completed then the hoardings will be removed and the area opened up for public access.

### **Works on Highways**

6.3.77 It will be necessary for all roadworks to be undertaken in accordance with the Highway Agency's "Design manual for Roads and Bridges (DMRB) Guidelines." Published June 2010 The Proposed Development will also have the following implications on the existing public highways which are contained within the Site or in close proximity to the Site.

6.3.78 A raised table top will be formed on Surrey Canal Road with a traffic light control system. This will provide a north south access route from the Excelsior and Timber Wharf developments on the south of Surrey Canal Road to the Stockholm Road buildings. This intersection will be formed as part of Phase 3 of the works. The logistics and timing of works associated with delivering this junction together with the formation of the new junction which serves the east side of Stockholm 2 will need to be discussed and agreed in detail with London Borough Lewisham to ensure that the works cause the minimum of inconvenience to traffic, pedestrian and cycle users on Surrey Canal Road.

6.3.79 The works to form the new junctions will be the subject of a S278 Agreement.

6.3.80 The relevant statutory notices will need to be served to cover the above works and detailed negotiations with London Borough Lewisham will be undertaken to agree the final works methodology and proposed programme prior to them being implemented. Works to all roads will be undertaken to adoptable road standards.

## 6.4 Construction Phasing and Programme

6.4.1 The Proposed Development is likely to be separated into various development phases which are indicated in Technical Appendix 6.3.

6.4.2 Construction works will not commence until late 2012 by when the East London Line Phase 2 works have been completed. The works are expected to be completed in 2026. The final phasing or sequencing of the Proposed Development may alter depending upon market conditions and commercial negotiations relating to the occupancy of the various buildings.

6.4.3 For the purposes of the construction logistics plans, it is assumed that no two phases will run concurrently with the exception of Phases 1A and 1B. In the event of any changes to the phasing or sequencing then the construction logistics will be revised.

6.4.4 The indicative development sequencing is as follows:

Table 6.5

Phase	Buildings	Infrastructure	Anticipated Commencement date	Anticipated Completion Date
Phase 1A	Excelsior 1-4	Road to east side of Excelsior and junction on to Surrey Canal Road	Late 2012	Mid 2015
Phase 1B	Orion	New junction on to Surrey Canal Road and closure of existing crossover from Orion	Late 2012	Early 2015
Phase 2	Timber Wharf 1 and 2	Road between Timber Wharf and Excelsior	Mid 2015	Early 2018
Phase 3	Stockholm 1 and 2	Table top junction across Surrey Canal Road linking Stockholm and Timber Wharf and new junction to east of Stockholm 2	Early 2018	Mid 2020
Phase 4	Senegal 1 and 2 plus Stadium Avenue and	Road through Stadium Avenue	Mid 2020	Late 2021

	Stadium 1 and 2			
<b>Phase 5</b>	Bollina North 1 and 2 and Bollina West	Bollina Road to be closed off and then reformed in new position	Late 2021	Late 2024
<b>Phase 5A</b>	Bollina East		Late 2024	Early 2026

6.4.5 The phase which has been assessed as being the “worst case” scenario with maximum impact on the sensitive receptors has been determined as being Phase 1 when both Phase 1A and 1B are expected to be on site.

6.4.6 The main logistics and issues arising from each of the respective phases are as follows:

#### **Phase 1A**

6.4.7 This phase delivers Plots Excelsior 1-5 inclusive as well as Station Square.

- Construction vehicles will need to be parked on Rollins Street to facilitate materials’ deliveries and waste away from the Site. This will mean that Rollins Street will need to be restricted to a single width carriageway under traffic light control during construction working hours. The Site access point will be located on Rollins Street.
- A vehicle holding area and materials storage area will be located on the existing scaffold yard which is located to the west of the Site.
- Pedestrian access on to the Site will be via an access gate on to the scaffold yard and then through a delineated pedestrian zone to the site accommodation and then across to the Site.
- Site accommodation will be in the existing buildings on the scaffold yard which are on the rear north area of the Site.
- The contractor for Phase 1A will be required to maintain a clear 4.8m zone for fire brigade access around Plot 5 Excelsior Rollins House incorporating Live Work Units and Plot 2 Excelsior - Guild House. These plots will remain occupied during construction.
- Resident parking for Rollins House will need to be relocated to a compound in the Jewson’s yard for the duration of the construction works
- Phase 1A works cannot commence until the East London Phase 2 works have been completed.

## **Phase 1B**

6.4.8 This phase delivers Plot Orion.

- Construction vehicles will need to be taken from a construction vehicle holding area to the Site entrance on Surrey Canal Road.
- Access into Phase 1B (Plot Orion) of the Proposed Development can only be accommodated from Surrey Canal Road. In order to minimise disruption to Surrey Canal Road it is intended to make a one way route around the internal perimeter of Plot Orion. In order to implement this route it will be necessary to form the permanent vehicle entry point as an early works item and to also continue the existing vehicle entry point into the Orion Industrial Estate until this plot has been fully constructed.
- The vehicle holding area and materials storage area will be located on the eastern units of the Stockholm Road Industrial Estate and vehicles will be taken from Stockholm Road on to Ilderton Road and then on to Surrey Canal Road.
- Site accommodation will be in the site cabins which will be located in the north area of the eastern Stockholm Road industrial unit. Pedestrian access on to the Site will then be through the pedestrian link which is being formed under the East London line. The area will be contained as part of the Phase 1B construction site and no public access will be permitted during construction hours. During match days the Millwall Football Club emergency route to the west side of the East London Line will be opened up and be segregated exclusively for the use of the Football Stadium.
- Phase 1B works cannot commence until the East London Phase 2 works have been completed.

## **Phase 2**

6.4.9 This phase delivers Plots Timber Wharf 1 and 2 plus the road between Phase 1A and Phase 2.

- Construction vehicles will need to be parked on Rollins Street to facilitate materials deliveries and waste away from the Site. This will mean that Rollins Street will need to be restricted to a single width carriageway under traffic light control during construction working hours. The Site access point will be located on Rollins Street.
- A vehicle holding area and materials storage area will be located on the east unit of Stockholm Road Industrial Estate. Construction vehicles will then be taken from the holding area back along Stockholm Road to Ilderton Road and then onto Rollins Street.
- Pedestrian access on to the Site will be via a defined pedestrian access gate on Rollins Street.
- Site accommodation will be in the refurbished buildings on the Phase 1A of the Proposed Development for the groundworks stage of the works. Once the structure has been constructed to

ground slab level then Site accommodation will be transferred to the proposed basement car park area on the Timber Wharf Development.

- The proposed access road between Excelsior and Timber Wharf developments will be constructed as early works in Phase 2. This road will provide an additional construction vehicle delivery point. Vehicles will access this road from Rollins Street and egress the Site on to Surrey Canal Road.

### **Phase 3**

6.4.10 This phase delivers Plots Stockholm 1 and 2 plus the road linking Stockholm Road and Surrey Canal Road.

- Construction vehicles will enter the Site from Stockholm Road and off Ilderton Road. There will be a number of vehicle unloading points within the construction site.
- A vehicle holding area and materials storage area will be located on either Bolina Industrial Estate or on a site located in close proximity to the Site. Vehicles will then be required to access the Site from Stockholm Road.
- Pedestrian access on to the Site will be via the public road off Surrey Canal Road which is located to the west side of the East London Phase 2 site. This route will remain clear and for exclusive use as the Millwall Football Club emergency route known as Surrey Canal Road Gate 3 during Stadium events.
- Site accommodation will be in the site cabins which are located in the north section hardstanding area of the eastern Stockholm Road industrial unit.
- The public space between Stockholm 1 and Stockholm 2 will be formed as part of Phase 3 works. This will also include the junction on to Surrey Canal Road.

### **Phase 4**

6.4.11 This phase delivers Plots Stadium Avenue 1 and 2, Senegal 1 and 2, Senegal Way and Stadium Avenue.

- Construction vehicles will access the Site from Zampa Road and off Ilderton Road.
- A vehicle holding area and materials storage area will be located on the Site of the former Millwall Community Centre. The Community Centre will be relocated onto Phase 3 of the Proposed Development prior to the commencement of Phase 4 works.
- Pedestrian access on to the Site will be via a defined pedestrian access gate on Zampa Road.
- Site accommodation will be on the former Millwall Community Centre site.

- Daily pedestrian access to the Stadium will be maintained during Phase 4. There will be a security point at the entrance to the Site on Zampa Road for the proposed Phase 4 works (Plots Stadium 1 and 2, Stadium Way and Senegal 1 and 2). Access for public and staff of Millwall Football Club on non match days will be controlled entry from the security point. Pedestrians will have a well lit and delineated pedestrian route from the gate on Zampa Road to the Stadium.
- Vehicular access for Stadium staff on non Stadium event days will be provided through to the east side from the former community centre and where there will be provision for 50 no. car parking spaces on a daily basis. The route through to the car park and pedestrian access will be managed by the Main Contractor who is responsible for constructing the buildings within Phase 4. On Stadium event days and due to the need to maintain a segregation between supporters and traffic, the access to the Site will be through the main construction site where a well lit and safe route will be provided by the Main Contractor from Stockholm Road and on the alignment of the new Senegal Way.
- The precise requirements for security clearance and passes will be agreed between Renewal and Millwall Football Club and will form a condition of the Main Contractor's building contract.
- During Stadium events the existing evacuation routes will be available from the Stadium. These evacuation routes are included as Technical Appendix 6.4
- A position for the television broadcasting services for Sky will be located on the east side of the Proposed Development and following consultation with Millwall Football Club. The area which will be provided will be equivalent to that already provided and be sufficient for 2 articulated HGV's, one rigid HGV and a BT van. The area will be fenced off for safety purposes.
- The Memorial Garden will be retained or relocated in consultation with Father Owen and the relatives of those whose ashes have been placed there. This will be completed prior to the commencement of this phase of the Proposed Development.

#### **Phase 5A**

6.4.12 This phase delivers Plots Bolina North 1 and Bolina West , Bolina Gardens and Bolina Road.

- Construction vehicles will access the Site from Zampa Road and off Ilderton Road.
- A vehicle holding area and materials storage area will be located on the site of the former Millwall Community Centre. The Community Centre will be relocated into Phase 3 of the Proposed Development prior to commencement of Phase 4.
- Bolina Road will be closed to through vehicular traffic as part of the Thameslink works and will not be reopened.
- Pedestrian access on to the Site will be via a defined pedestrian access gate which will be located on Bolina Road.

- Site accommodation will be on the former Millwall Community Centre site.
- A control access point will be established on Zampa Road. This will regulate construction vehicle access into Phase 5 works and also visitors to Millwall Football club and the completed part of the Proposed Development on Phase 4.
- The pedestrian link to South Bermondsey Station will be formed

### **Phase 5B**

6.4.13 This phase delivers Bolina East.

- Construction vehicles will access the Site from Zampa Road and off Ilderton Road.
- A vehicle holding area and materials storage area will be located off site in an area in close proximity to the Proposed Development. The exact location will be agreed in advance with London Borough of Lewisham.
- Pedestrian access on to the Site will be via a defined pedestrian access gate on Bolina Road.
- Site accommodation will be located off site or in a unit of the completed development. Full details will be agreed in advance with London Borough of Lewisham.
- The existing radio mast will be located on to a completed building within the Proposed Development prior to commencement of construction works in this phase. All necessary consultation with stakeholders will be completed and relevant planning consent obtained.

## **6.5 Interrelationship with other development works in the vicinity**

6.5.1 There are known to be two other major construction projects that could take place adjacent to the Proposed Development.

### **East London Line Phase 2 works**

6.5.2 The East London Line Phase 2 construction works (ELL2) which, as set out in the relevant Environmental Statement dated March 2000, is scheduled to commence in early 2011 and to be completed by Autumn 2012. Party walls notices have been served on Renewal which supports this commencement date.

6.5.3 The extent of the ELL2 works are shown in Technical Appendix 6.2.

6.5.4 Phases 1A,1B, 3 and 4 of the Proposed Development are not intended to be commenced until the East London Phase 2 (ELL2) works have been completed due to the Limit of Deviation of the ELL2 works encroaching into the Application Site. In the event that the ELL2

works are delayed then Renewal will need to discuss and agree the precise sequencing of the Proposed Development and the ELL2 works with Transport for London. Similar discussions will need to be held regarding the construction of Surrey Canal Road Station and the underpasses at Rollins Street and Stockholm Road in the event that they are not included within the ELL2 works which are scheduled to commence in early 2011.

### **Thameslink Works**

6.5.5 Railtrack made two separate applications in 1997 and 1999 under the Transport and Works Order for works to remodel and extend the infrastructure for Thameslink trains. The extent of the proposed construction sites and works compounds are indicated in Technical Appendix 6.3

6.5.6 The works basically comprise of the reconfiguration of the existing at grade flat junction in the Bermondsey area to allow “Kent services” to be redirected on a new section of track which is installed under a new Thameslink line. This will be delivered by constructing a box structure which contains four low level tracks over which the two Thameslink tracks will be installed.

Network Rail, at a meeting held with Renewal and their advisors in September 2009, confirmed that the Thameslink works are scheduled to commence in 2012 and be completed by 2014/2015. The Thameslink proposal uses part of the Silwood Triangle as a works compound and the disused ELL track bed as an access to the proposed works. As such there is no direct construction works or traffic interfaces between the Thameslink works and the Proposed Development. Thameslink also propose to close Bolina Road for vehicular through access from the railway viaducts through to Silwood Street. This will have no impact on the ongoing use of the existing Bolina Industrial Estates which will continue to trade during the proposed works, assuming construction is delivered within the period 2013-2015.

The nearest sensitive receptor within the Proposed Development to the Thameslink works is Phase 5 of the Proposed Development. Development of this phase is currently scheduled to commence in 2024. There are no anticipated issues arising from occupation or construction of the Bolina buildings (Plots North1 and 2, East and West) which are in closest proximity to the Thameslink works.

## **6.6 Construction Practices**

### **Further investigations**

6.6.1 Prior to commencement of construction activities it will be necessary to undertake some additional site investigations. These will include the following:

- Type 3 asbestos survey required prior to demolition.

- Intrusive soil investigations to confirm ground conditions, environmental status and identify any geotechnical constraints that may impact the Proposed Development.
- Geoarchaeological borehole survey to identify any potential archaeological impacts and follow up evaluation and monitoring exercise if required.

6.6.2 The results of these investigations will be incorporated into the final detailed design for each respective development plot.

### **Demolition**

6.6.3 A detailed demolition methodology is included in sections 6.3.1-7 inclusive above

### **Ground Improvement**

6.6.4 Dependant upon the results of the intrusive soil investigations noted in 6.6.1 there may be a need to implement some ground improvement works across various areas of the Site. In specifying the extent of ground improvement works, the proximity of the adjacent railways and the proposed design solutions will be agreed with the relevant stakeholders in advance of the commencement of the works.

### **Earthworks**

6.6.5 Parts of the Proposed Development will incorporate the formation of multi-storey basements. The formation of these basements and also ground works associated with delivery of the main buildings and infrastructure will generate approximately 129,000 m<sup>3</sup> of arisings over the Proposed Development period. The grading of the arisings will be determined prior to either reusing on site or disposing off site.

6.6.6 For plots with no basements then excavation will be to formation level. Where basements are provided then the appropriate earth retention system will be installed prior to excavation to reduced level.

6.6.7 The final ground levels are shown on Parameter Plan 007.

### **Piling Methodologies**

6.6.8 A suitable piling mat will be laid prior to piling works being undertaken. Piling will commence when sufficient formation level has been created on a development plot. Piles are likely to be continuous flight auger in order to minimise the impact on adjacent lands. Piling or any other foundation design using penetrative methods shall also take into consideration the prevention of pollution of controlled waters and to comply with policies ENV PR10 Contaminated Land and ENVPR17 Management of water the LBL Unitary Development Plan.

### **Hydrogeology**

- 6.6.9 The nature of the underlying water table and hydrogeology means that the proposed designs for the buildings will need to consider how the structure is tethered to the underlying strata. Given the highly permeable stratum within the Site it may be necessary to adopt significant dewatering and sheet piled construction techniques. In considering the design the sensitivity of the adjacent structures and removal of fine soil particles during dewatering will be considered in detail.

#### **Retaining Structures and Embankments**

- 6.6.10 There are a number of existing retaining structures to the railway embankments around the perimeter of the Site. The structural integrity of these structures will need to be considered in detail and in conjunction with the Proposed Development. The impact of the proposed works on the surrounding railway embankments will also need to be considered and the proposed design solutions will need to be agreed with the relevant stakeholders in advance of the commencement of the works

#### **Contamination**

- 6.6.11 The desk top study referred to in Chapter 15 has identified a range of potential contamination sources across the Site. Following completion of the intrusive investigations it is intended that a Land Quality Statement and Waste Soil Assessment report will be prepared and submitted to London Borough Lewisham. These reports will be used as a basis for the remediation design across each of the development plots.

#### **Drainage works**

- 6.6.12 The drainage works will be designed to accord with the requirements of the London Plan Essential requirements and also to meet a minimum BREEAM Very Good or Code for Sustainable Level 4.
- 6.6.13 Further investigations will be required to determine the adequacy of the existing drainage systems across the Site. This will involve Thames Water undertaking a detailed study of the Proposed Development. It is likely that there will be a need for reinforcement of the existing network within Bolina Road and also there will be attenuation of surface water flows as well as Sustainable Drainage measures within the whole development.

#### **Craneage and Operating Machinery**

- 6.6.14 Full details of the craneage and operating machinery will be provided by the Main Contractor for each development plot prior to commencement of works. The Main Contractor will be responsible for obtaining all licences associated with the operation of the machinery and for providing a detailed methodology on the operation of the plant and equipment before commencement of the works. Where required the Main Contractor will seek the necessary consents to use the equipment from Network Rail.

6.6.15 Where possible, Contractor's plant will be selected for low noise and low emissions characteristics. Where necessary plant may be placed in sound reducing enclosures. Where practical electrically operated machinery will be used in preference to petrol or diesel powered equipment and operators will be required to switch off their plant and not leave it idling.

### **Construction Methodology**

6.6.16 A Main Contractor will be appointed by Renewal for each development plot. The Main Contractor will be responsible for providing detailed contractors' proposals for the construction of each of the buildings contained within the respective development plot. Where applicable, this methodology will be reviewed and commented upon by stakeholders prior to commencement of the works.

### **Structural Frame**

6.6.17 The structural frames for the various buildings are likely to be formed from steel. Further details will be provided with the reserved matters submissions and when further structural analysis has been completed which takes into consideration the Site conditions and the proposed heights of the various buildings.

### **Building Envelope**

6.6.18 The external building envelope will be constructed in accordance with the Development Specification and Parameter Plans. Where possible consideration will be given to designing building components which can be manufactured and / or fabricated off site.

### **Building Services**

6.6.19 The installation of the mechanical, electrical and public health systems will be undertaken in accordance with current regulations which prevail at the time of the respective development plot. The buildings will generally be controlled by Building Management Systems. The systems will be fully tested and commissioned prior to handover to the building operator. Full details of the energy efficiencies and building performance relating to each building are contained within the submitted Energy and Sustainability statements.

### **Fit Out Items**

6.6.20 Fitting out of the completed buildings will either be undertaken as part of the main construction works on each development plot or as a specialist fit out contract by or on behalf of an operator. The works will be undertaken in accordance with current regulations and to accord with the design parameters which are set out within the supporting Energy and Sustainability statements.

### **External Works**

- 6.6.21 The phasing plans set out the extent of the open spaces which will be delivered within each phase of the Proposed Development.
- 6.6.22 The openspaces and private spaces will be constructed behind hoardings as part of the construction sites. Once a phase of the Proposed Development has been completed then the hoardings will be removed and the area opened up for public access.
- 6.6.23 Where trees are retained within the Site then adequate protection will be provided to protect their roots as well as the trunks and crowns. A full survey of the trees to be retained has been undertaken and details have been submitted on how the trees are to be protected during the construction phase.

## **6.7 Construction Logistics**

### **Site Establishment**

- 6.7.1 A Main Contractor will be appointed to manage the construction works on each development plot. The Contractor will also be required to perform the role of the Principal Contractor under the Construction Design and Management Regulations 2007. Each development plot will provide their own site welfare facilities and the Site will be delineated by timber hoarding or other appropriate security fencing to the full perimeter of the Site and to a minimum height of 2400mm. Where possible site accommodation will be contained within the respective development plot, however in certain instances it will be necessary for site accommodation to be located on other areas of the Site or remotely. Details of the Proposed Site establishment are identified with the construction logistic plans which are contained in Technical Appendix 6.5

The Main Contractor will be responsible for dealing with any graffiti on the hoardings and to regularly check to ensure that their site is fully secured.

### **Site Protection**

- 6.7.2 The Main Contractor for each development plot will be responsible for the security of their respective sites. The Main Contractor will be required to segregate and control vehicle and pedestrian access at the proposed entry points on to the Site and to maintain records of all movements onto and away from the Site.

### **Millwall FC Stadium**

- 6.7.3 The General Safety Certificate for Millwall Football Club which has been issued by the London Borough of Lewisham has been reviewed as part of the construction logistics for the Proposed Development. It is intended that the existing means of ingress or egress which are defined in Schedule D of the certificate will be maintained through the various phases of the development as well as the agreed evacuation routes which are shown in Technical Appendix 6.4.
- 6.7.4 In instances where construction works are close to the existing access routes and / or evacuation routes or have a direct impact on them, then revised routes or temporary arrangements will be agreed in advance with Millwall Football Club and the London Borough of Lewisham. Prior to the construction of each phase or plot a Construction Logistics Plan which takes into account the Emergency Evacuation requirements and general stadium operations will be submitted to London Borough of Lewisham for approval, following discussions with Millwall Football Stadium.
- 6.7.5 It is intended that regular liaison meetings will be held between Renewal and their team including, their Main Contractor, and Millwall Football Club to review construction logistics and to ensure that all construction activities are coordinated with Millwall FC Stadium's site operations to enable construction activities and stadium operations to be conducted in a safe manner at all times.
- 6.7.6 It is anticipated that existing car and coach parking provision and access arrangements for the Millwall FC Stadium will not be impacted during Phases 1-3 inclusive of the Proposed Development. In order to deliver Phase 4 of the Proposed Development, the number of match day car spaces will be reduced from 186 to 50 spaces. Match day coach parking for visiting supporters will remain on the Lions Centre site during Phase 4. The 50 car parking spaces will be provided to the east side of the Millwall FC Stadium. Access to the east side of the Millwall FC Stadium during Phase 4 will be through the existing construction site via Zampa Road. The Main Contractor for Plots Stadium 1 and 2 and Stadium Avenue and Senegal 1 and 2 sites will be required to maintain a safe, well lit and clear route through the Site during Stadium Event days.
- 6.7.7 Daily access to the Stadium will be maintained during Phase 4. There will be a security point at the entrance to the Site on Zampa Road for the proposed Phase 4 works (Plots Stadium 1 and 2, Stadium Way and Senegal 1 and 2). Pedestrian access for public and staff of Millwall Football Club on non Event days will be controlled entry from the security point. Pedestrians will have a well lit and delineated pedestrian route from the gate on Zampa Road to the Stadium. Vehicular access for Stadium staff will be provided through the Site to the east side and where there will be provision for 50 no. car parking spaces on a daily basis. The route

through to the car park and pedestrian access will be managed by the Main Contractor who is responsible for constructing the buildings within Phase 4. The precise requirements for security clearance and passes will be agreed between Renewal and Millwall Football Club and form a condition of the Main Contractor's building contract.

- 6.7.8 The detailed design for Phases 3 and 4 of the Proposed Development will also need to take into consideration the location of all incoming services to Millwall FC Stadium and to ensure that supplies are maintained at all times. Where any service diversions are required to facilitate the construction works, then a full method statement will be discussed and agreed with Millwall Football Club before the works are undertaken. The existing pump station in the South East corner of the Millwall FC Stadium will also be operationally retained at all times during the Proposed Development.
- 6.7.9 A position for the television broadcasting services by Sky will be located on the east side of the Proposed Development and following consultation with Millwall Football Club. The area which will be provided will be at least equivalent to that already provided and be sufficient for 2 articulated HGV's, one rigid HGV and a BT van. The area will be fenced off for safety purposes.
- 6.7.10 The Memorial Garden will be retained or relocated in consultation with Father Owen and the relatives of those whose ashes have been placed there. This will be completed prior to the commencement of this phase of the Proposed Development.
- 6.7.11 During Phase 5 and 5A of the Proposed Development the access for coach and car parking will be as indicated on Parameter Plan 13.
- 6.7.12 Main Contractors will be required to cease all construction activities for Phases 4 and 5 and to ensure that their sites are safe for a minimum of two hours before a Stadium Event ( Events are specified activities Group A,B and C as defined in the Millwall Football Certificate).

### **Construction Vehicle Movements**

6.7.13 The maximum number of vehicle movements per day is anticipated to be during the reduced level excavations for each respective development plot or for a major concrete pour. A vehicle movement is defined as either a vehicle arriving or departing from the Site. Based upon the Proposed Development this has been assessed as follows:

- Phase 1A 180 vehicle movements
- Phase 1B 180 vehicle movements
- Phase 2 180 vehicle movements
- Phase 3 180 vehicle movements

- Phase 4 180 vehicle movements
- Phase 5A 180 vehicle movements
- Phase 5B 180 vehicle movements

6.7.14 The worst case scenario assumes that piling and limited concrete work has commenced whilst the remainder of the reduced level excavation is completed. In addition to this it is expected that daily traffic generation for cars and light vehicles will be in the order of 60 vehicles per day.

#### **Construction Vehicle Cleaning**

6.7.15 The Main Contractor for each development plot will be responsible for providing appropriate wash down facilities and easily cleaned hard standings for vehicles entering or leaving their site. This will minimise any mud or detritus being deposited on the public highways. All vehicle cleaning will be undertaken within the construction site. The Main Contractor for each site will also be responsible for undertaking regular road sweeping on the roads which are immediately adjacent to the Site.

#### **Construction Deliveries and Parking**

6.7.16 Construction deliveries to each development plot will be managed to provide a “just in time” service. The Main Contractor for each development plot will be responsible for coordinating all deliveries to their site. Each development plot will have a separate delivery area and materials storage area which is remote from the construction site. Where possible these areas are provided within existing facilities on the Site. Full details of the proposed delivery points and materials storage areas are indicated in Technical Appendix 6.5

6.7.17 Off loading points will be required on Rollins Street to facilitate works on Phases 1A and 2 of the Proposed Development. These points will be controlled and comprise segregated zones which will enable public access to be diverted away from the areas. It will be necessary for Highway and Statutory consents and licences for these points to be received by the Main Contractor before commencement of works on the respective development plot.

6.7.18 All construction vehicles will be required to have their engines turned off whilst waiting and to carry a clearly identifiable pass.

6.7.19 Construction vehicle movements will comprise of a mixture of heavy, large scale loads which will be carried on Heavy Goods Vehicles and medium to light loads which will be carried on smaller lorries and vans.

6.7.20 In certain instances to set up key plant on site e.g. tower cranes, it may be necessary for deliveries to be made outside of normal working hours. In such case prior notice will be agreed with the London Borough Lewisham’s Highways department.

6.7.21 Restricted on site parking may be available for construction workers. Main Contractors for each development plot will be required to introduce a Travel Plan for the construction workers which encourages the use of public transport facilities, use of bicycles and provision of secure cycle storage.

6.7.22 The Main Contractor for each development plot will be required to employ trained banksmen to supervise the unloading and vehicle movements associated with deliveries to the Site.

#### **Construction Vehicle Routes**

6.7.23 The Main Contractor for each development plot will be required to ensure that all vehicle movements to the Site comply with the route which is agreed with the Highway Authority. It is anticipated that all deliveries to the Site will be from the A2 via Old Kent Road or Rotherhithe New Road and on to Ilderton Road. The final proposed access route on to each development plot is indicated in Technical Appendix 6.5. Vehicles will be required to go directly to the vehicle holding and delivery area. The final delivery to the Site will be managed by the Main Contractor for the Site who will ensure that vehicle movement to the Site are managed to avoid any queuing or stacking up. Vehicles will be required to leave the Site immediately upon completion of their deliveries and to return along Ilderton Road to the A2 via Old Kent Road or Rotherhithe New Road

#### **Construction Workforce Size.**

6.7.24 The maximum number of operatives on each development plot is expected to occur during the fitting out stage. Maximum numbers for each plot are expected to be in the order of:

- Phase 1A 300-350
- Phase 1B 300-350
- Phase 2 250-300
- Phase 3 300-350
- Phase 4 150-200
- Phase 5A 300-350
- Phase 5B 250-300

#### **Anticipated Working Hours**

6.7.25 The permitted hours of work for any construction works are proposed to be:

- Monday – Friday 8.00 a.m. – 6.00 p.m.
- Saturdays – 8.00 a.m. – 1.00 p.m.

- Sundays and public holidays – no audible construction works will be permitted unless prior consent is received from Lewisham.

6.7.26 It may be necessary for certain key construction activities for these hours to be extended e.g. major concrete pours, in which case prior notice will be provided. It may also be necessary for health and safety or operational reasons to undertake certain operations outside of the normal working hours e.g. crane erection or dismantling.

6.7.27 In order to minimise disruption to public highways arising from the Proposed Development it may be necessary to undertake certain works outside of the anticipated working hours. The logistics and timing associated with delivering such works will be discussed and agreed with Lewisham in advance of the commencement of the works.

### **Site Lighting**

6.7.28 It is intended that the lighting around the perimeter of the construction sites and Millwall Football Club will be maintained to provide sufficient illuminance to ensure safe pedestrian access around the sites and where these sites are not on public highways. Lighting on public highways will remain as the responsibility of the London Borough of Lewisham. During demolition and construction stages the Main Contractors will be required to submit details of their proposed lighting for construction purposes and these will be reviewed with Network Rail to ensure that they don't compromise darkness on the railway embankments during dark hours.

6.7.29 Consultation to agree a lighting strategy for the Proposed Development will be held with London Borough of Lewisham, Millwall Football Club and Network Rail.

### **Emergency Evacuation Procedure for the Site**

6.7.30 The Estates Management Company will be responsible for developing an emergency evacuation plan for the entire Site. This will need to be updated on a regular basis to take into consideration the current phasing of the Proposed Development, the remaining existing Site operations as well as the Millwall Football Club emergency plans.

## **6.8 Code of Construction Practice and Other Mitigation Required**

### **Procurement**

6.8.1 Construction activities on the respective development plots will be subject to a Site Wide Code of Construction Practice (COCP) which will be prepared in consultation with London Borough of Lewisham.

6.8.2 The purpose of the COCP will be to ensure compliance with environmental and other relevant legislation and best practice standards. The general principles of the COCP which will be

applied across all phases of the Proposed Development will be set out in a Site Wide COCP. There will then be a plot specific COCP which will apply the principles of the Site Wide COCP to each development plot. The plot specific document will form part of the tender and contract documentation for the development plot.

6.8.3 The COCP will include the following environmental management control measures:

- Dust suppression and air quality controls
- Noise and vibration techniques
- Waste management and recycling strategy
- Results of site investigations and proposals to deal with environmental issues
- Site management requirements to deal with environmental issues
- Construction logistic proposals
- Ecology proposals
- Archaeology proposals

#### **Liaison with Public**

6.8.4 Renewal will appoint a management company to manage the estate for the duration of the Proposed Development. As part of their duties they will also take ownership of the recording of the environmental impact data and for coordinating responses and investigations into any exceedance or complaints which are received.

6.8.5 All neighbours will be provided with the contact details of the management company who will issue regular updates on the current status of the development on the Site.

#### **Interface with Millwall Football Club**

6.8.6 Regular liaison meetings will be held between Renewal including their Main Contractor and Millwall Football Club to review construction logistics and to ensure that all construction activities are coordinated with Millwall FC Stadium's site operations to enable construction activities and stadium operations to be conducted in a safe manner at all times.

6.8.7 These ongoing discussions will ensure that Stadium operations (including evacuation and contingency procedures) will be coordinated in a safe manner (in line with the requirements of the safety certificate) during the construction phases and also following completion of the Proposed Development. The estate management company and the main contractors for the respective development parcels will also attend the quarterly Safety Advisory Group and will

act on any representations which arise from the meeting relating to safety or operational concerns.

- 6.8.8 Prior to the construction of each phase/ plot a Construction Logistics Plan which takes into account Millwall Football Club's emergency evacuation requirements and general business operations will be submitted to London Borough of Lewisham for approval. The Plan will be submitted following consultation with Millwall Football Club.

### **Archaeology**

- 6.8.9 An archaeological desk based assessment has been undertaken for the Proposed Development and is referred to in Chapter 8. This has recommended that a geoarchaeological borehole survey is required on the Site. It is expected that this survey will be combined with the site investigation survey. In the event that any further evaluation and monitoring of the Site is required either prior or during the ground works for each of the development plots, then the precise extent of the evaluation and monitoring will be agreed with London Borough Lewisham and once the geoarchaeological survey has been completed. The need to complete such surveys and evaluation will be a requirement of the building contract where identified in the geoarchaeological borehole survey

### **Ecology**

- 6.8.10 Any works to remove scrubland or trees will be undertaken outside the period March – August to alleviate the impact on breeding birds.
- 6.8.11 Works to deal with the Japanese Knotweed on the Site will be undertaken in order to deal with the outbreaks before development of the area within which the Japanese Knotweed has been identified. The treatment works will be undertaken in accordance with all current legislation. Renewal will make reasonable endeavours to coordinate treatment works with outbreaks which are identified on adjoining lands.

### **Landscape**

- 6.8.12 The nature of species which is proposed to be planted adjacent to Network Rail lands will be in accordance the Network Rail "native Tree Species for Planting "document dated June 2004.
- 6.8.13 All trees which are to be retained during the construction will be protected by appropriate root barriers and physical barriers to prevent damage during construction. The Contractor will be required to provide details on how this is undertaken for approval prior to commencement of the construction works on the respective development plots.

### **ICE Protocol**

6.8.14 The Demolition and Main Contractor who are appointed to undertake demolition and construction works on the Proposed Development will be required to submit the following:

- A Site Waste Management Plan.
- The principals of the WRAP toolkit for waste management will be adopted to reflect the size and nature of the development.
- Demolition will also be undertaken to accord with the best practice of the ICE Protocol.
- A demolition protocol schedule will be prepared by the contractor prior to the commencement of the demolition works.
- Where possible demolition arisings will be crushed on Site and reused.
- Construction materials will be responsibly sourced
- During the new build construction the contractor will be required to procure materials in accordance with the ICE protocol providing that recycled material is commercially available within the marketplace

6.8.15 It is expected that the following materials will be retained on Site;

- a) concrete from foundations and insitu concrete slabs; to be crushed (specification to be confirmed) and stockpiled.
- b) concrete from prestressed precast concrete beams: to be crushed (specification to be confirmed) and stockpiled.
- c) brickwork and concrete blockwork from walls and floors: to be crushed (specification to be confirmed) and stockpiled.
- d) stockpiles are to be kept separate and covered to prevent seeding.

#### **Considerate Constructors Scheme**

6.8.16 The Main Contractors who are appointed for the construction works to the various development plots will be required to register to and adopt the construction best practices associated with the Construction Confederation's Considerate Constructors Scheme. Their performance will be monitored by the Estate Management team and will also be assessed as part of the Main Contractor's contractual obligations to deliver the works to a minimum of Code for Sustainable Homes Level 4.

#### **Noise**

6.8.17 It will be a requirement of the building contracts for the development plots for the Main Contractor to adhere to general control measures to mitigate the impact of noise on sensitive receptors. These may include:

- Operation of site gates will be in such a manner as to control and minimise vehicle movements onto and off the Site. Site security will prevent unauthorised access on to the Site.
- The use of a construction vehicle holding area where vehicles will be required to turn off engines whilst stationary will reduce the number of vehicles waiting on the public highway.
- Fixed items of construction plant will be electrically driven where practicable.
- Noise generating operations will where possible be sited as far away from noise sensitive areas of the Site or adjoining areas. Where this is not possible noise emissions will be controlled by the erection of acoustic shielding or by siting operations behind site accommodation or spoil heaps.
- The sites will be fully enclosed by hoardings
- Loading and unloading of vehicles, dismantling of site equipment or moving equipment or materials around the Site will be conducted in such a manner as to minimise noise generation and where practical will be conducted away from site boundaries or sensitive receptors.

### **Air Quality**

6.8.18 The works to the Proposed Development shall be carried out to limit the emissions of air pollution by employing best practical means. The Main Contractor appointed for each development parcel will be required to adhere to general control measures to mitigate the impact of air pollution on sensitive receptors. These may include:

- Burning of waste will not be permitted;
- Materials will be delivered just in time and to minimise the need for running delivery vehicles by using a vehicle holding area where engines will be turned off;
- Wheelwashing facilities to be provide at construction traffic exits;
- Access routes on to sites to be retained as hardstanding areas where practically possible;
- Maximum speed limits to be imposed on all unmade roads;
- Mechanical road sweepers to be used where required;
- Stockpiles to be screened or covered to minimise dust;
- Spraying of water at work faces or during loading operations to be implemented where necessary. The spraying to be limited to the minimum required to damp down

the source rather than create an excess of water which may cause a contamination issue;

- All plant and vehicles to be in good repair, and
- Hazardous materials to be properly sealed and stored in appropriate storage areas.

### **Vibration**

6.8.19 The Proposed Development will need to consider the potential impact of vibration on sensitive receptors. Consultation will need to be engaged with Network Rail and Millwall Football Club to ensure that the proposed construction works do not cause vibration problems to their adjoining structures or railway embankments. In particular it is expected that construction techniques will be used to mitigate the impact of vibration. These may include:

- Non percussive piling techniques.
- Deconstruction techniques to be used for demolition.

### **Sensitive Receptors**

6.8.20 This section outlines the way in which the constructional impacts on the sensitive receptors to the Proposed Development are to be managed. Details on the way in which environmental considerations impact on the sensitive receptors are covered in the relevant environmental chapters of this Environmental Statement.

6.8.21 It is proposed that an Estate Management Company is engaged by Renewal to manage all issues arising from the interfaces with sensitive receptors through the duration of the Proposed Development. This will also extend to undertaking regular public consultation to update neighbours on the progress of the works.

### **Residential Units to South of Rollins Street**

6.8.22 Rollins Street will need to be restricted to a single width carriageway under traffic light control during construction working hours for Phases 1A and 2 of the Proposed Development. This is to facilitate the creation of a construction vehicle drop off zone and an unloading bay.

### **Plot 2 and Plot 5 Excelsior Units**

6.8.23 These units are within the Application Site and are to be retained as part of the Proposed Development. Further discussions need to be completed with the occupiers of these units to determine whether they will remain in occupation for the duration of the proposed construction works. In the event that they remain in residence then the construction plan for the works in Phase 1 will need make provision for emergency vehicle access to the buildings

and also to clearly define controlled and safe pedestrian access routes to the buildings from Rollins Street. The logistic plan in Technical Appendix 6.5 indicates how this can be provided.

6.8.24 It will be necessary for the existing car parking spaces on the Excelsior Site for the units which are to be retained to be relocated off site for the duration of the Phase 1A development. The final position for such parking is to be agreed but could possibly be part of the existing Phase 2 development site.

### **East London Line**

6.8.25 Transport for London will be provided with details of the proposed design and construction techniques which will be used to construct the various buildings and infrastructure which are in the zone of influence of the East London Line. These details will need to be approved by Transport for London prior to commencement of the construction works on each development plot. In particular consideration will need to be given to:

- Retaining structures and embankments
- Landscaping adjacent to Network Rail land
- Groundwater and below ground construction including piling techniques
- Craneage
- Security provisions at boundaries and lighting strategy including ensuring darkness on embankments.

### **Network Rail Lands**

6.8.26 Renewal will enter into an Asset Protection Agreement with Network Rail for the duration of the Proposed Development. As part of this agreement it will be incumbent upon Renewal or their agents and the Main Contractor who is appointed for each development plot to provide details of the proposed design and construction techniques which will be used to construct the various buildings. These details will need to be approved by Network Rail prior to commencement of the construction works on each development plot. In particular consideration will need to be given to:

- Retaining structures and embankments;
- Landscaping adjacent to Network Rail land;
- Groundwater and below ground construction including piling techniques
- Craneage; and

- Security provisions at boundaries and lighting strategy including ensuring darkness on embankments.

### **Existing Industrial Units on the Site**

6.8.27 The existing industrial units on the Application Site will be retained in use until they are required to provide site facilities for the Proposed Development. The sequencing of these uses is shown on the logistic drawings in Technical Appendix 6.5. Vehicular and public access to the units which are to be retained will remain as the existing arrangements.

### **Millwall Football Stadium**

6.8.28 Refer to above section 6.7.3 for details of the construction interface between Millwall Football Stadium and the proposed works.

### **South Bermondsey Station**

6.8.29 Full consultation will need to be undertaken with Network Rail and Southern Trains prior to the completion of a detailed design for the new pedestrian link and new cycle path. Once a detailed design has been agreed with all stakeholders then the sequencing and construction methodology for delivering the link and cycle route will need to be agreed with all stakeholders.

### **Construction Employment and Training**

6.8.30 Initiatives will be employed for providing employment and training opportunities for the local population in relation to the proposed construction works. This could include:

- Providing the opportunity for local labour resources to be used;
- Ensuring that where practicable that products and services are procured locally; and
- Providing equal opportunities.

6.8.31 Further consultation will be held with Lewisham to determine how this could be most effectively implemented.

### **Waste Management**

6.8.32 Details of the proposed waste management procedures for the Site are described in the Waste Strategy that is submitted with this planning application.

6.8.33 The construction works will be undertaken in a manner which attempts to minimise waste and to incorporate reuse of materials and recycling rather than disposal to landfill.

6.8.34 All waste and or unwanted materials arising from the works shall be disposed of in accordance with the SWMP.

**Controlled Waste**

6.8.35 All materials which are hazardous to health will be handled and stored on construction sites in accordance with the relevant Control of Substances Hazardous to Health Regulations and current regulations.

6.8.36 Consideration will be given to the location of all storage points for hazardous materials to minimise the risk of pollution to groundwater or drainage systems.