

6.5 LANDSCAPE AND ECOLOGY

6.5.1 OVERVIEW OF LANDSCAPE APPROACH

The landscape approach illustrated in Figure 6.85 has sought to respond to the Application Site's close relationship with the Lee Valley SMINC and the LVRP.

The landscape approach aims to:

- visually integrate the landscape into the wider landscape context, in particular linking the landscape in the north and east of the Application Site to the LVRP;
- reduce the predicted visual impact of the built form from key locations, in particular LVRP;
- use planting and topography to soften and enhance site edges;
- establish a landscape setting, driven where possible by ecological principles, for the built form to sit within;
- utilise brown and green roofs to provide ecological benefits from the buildings and promote ecological diversity within the Edmonton EcoPark, and to integrate buildings into the wider context;
- enhance the approach to Edmonton EcoPark along Lee Park Way for both the public and staff; and
- integrate safe pedestrian routes for both visitors and staff within the Edmonton EcoPark, and enhance routes for the public outside the Edmonton EcoPark.

This approach to landscaping at the Application Site has informed the design development of the Project and is reflected in the extent of works shown in the Book of Plans (AD02.01) and indicative Landscape Plans in the Design Code Principles (Ad02.02). The approach set out has informed the design framework for the Application Site contained within the Design Code Principles (AD02.02).

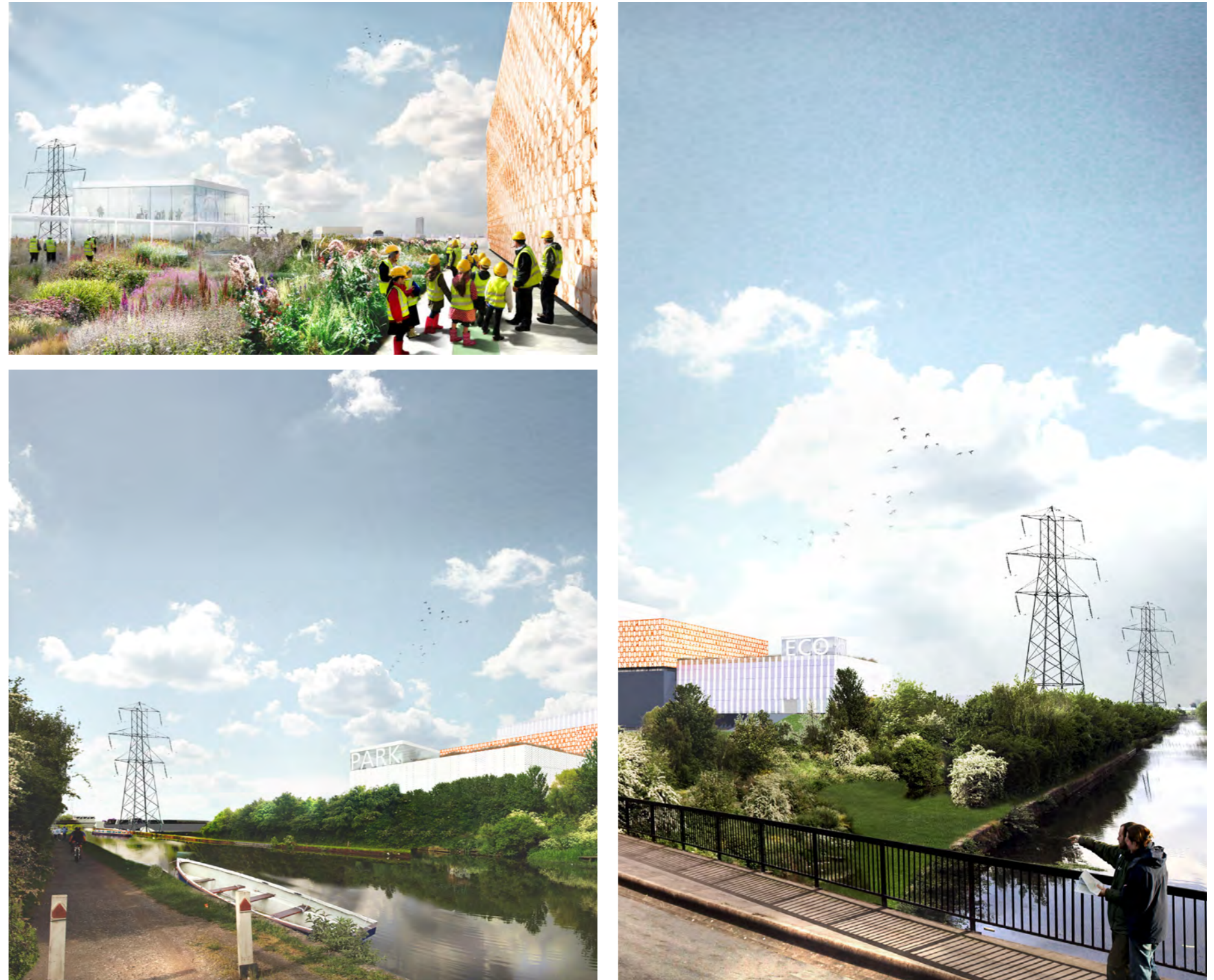


Figure 6.84: Illustrative views of the Project green roof and from the River Lee Navigation and from Lee Park Way

6.5 LANDSCAPE AND ECOLOGY



Figure 6.85: Illustrative landscape approach

- Legend**
- Existing trees and vegetation to be retained if possible
 - Informal tree planting
 - Formal tree planting
 - Shrub planting
 - Meadow
 - Lawn strip
 - Marginal Planting - Enfield Ditch
 - Brown roof
 - Green roof
 - Pedestrian ramp and steps
 - Proposed location for memorial bench

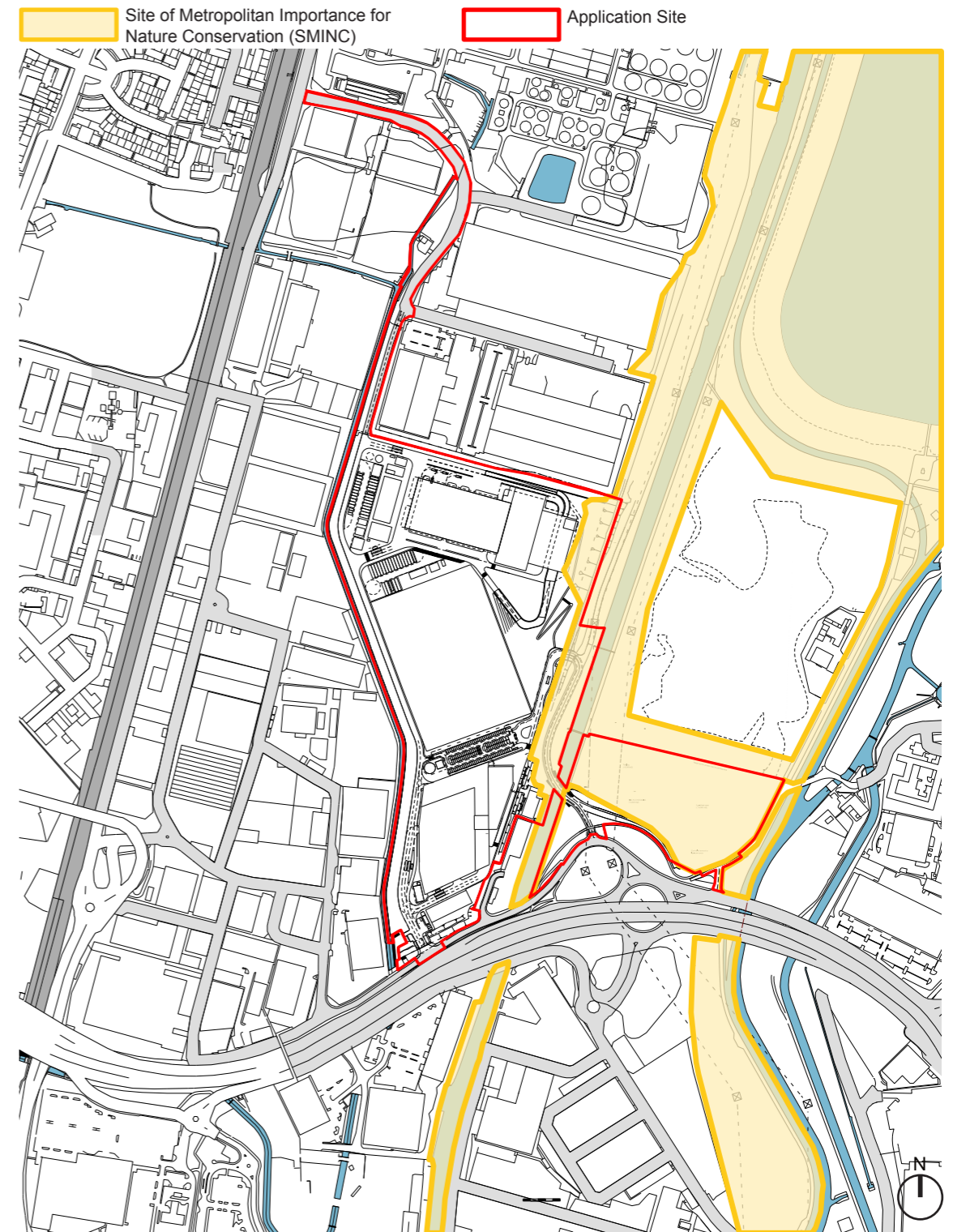


Figure 6.86: Outline of SMINC boundary

Options development

The views into the Edmonton EcoPark from Lee Park Way and the LVRP were considered as a key element in the design development for the landscape strategy.

Options were explored to re-profile the landscape in the north-east of the Edmonton EcoPark to screen low level operations, establish a landscape setting and reduce the perceived height of the proposed ERF. These options included interventions to the existing landscape and introducing a new landscape embankment adjacent to Enfield Ditch. Figures 6.87 to 6.90 show the low, medium and high embankment options that were considered. The low and medium embankment options would not fulfil operational requirements since they would only allow for vehicle access around the perimeter of the ERF. The high embankment option would allow for both vehicle access as well as the operational requirement for staff to enter the ERF at the tipping hall level.

The proposed new embankment (high option) illustrated in Figure 6.90 was developed as the preferred solution since it would provide pedestrian access to the tipping hall at the higher level and reduce potential drainage issues. This also provided additional screening from Lee Park Way to the lower part of the ERF, optimising the amount of existing vegetation which could be retained. It maintains the existing position of Enfield Ditch.

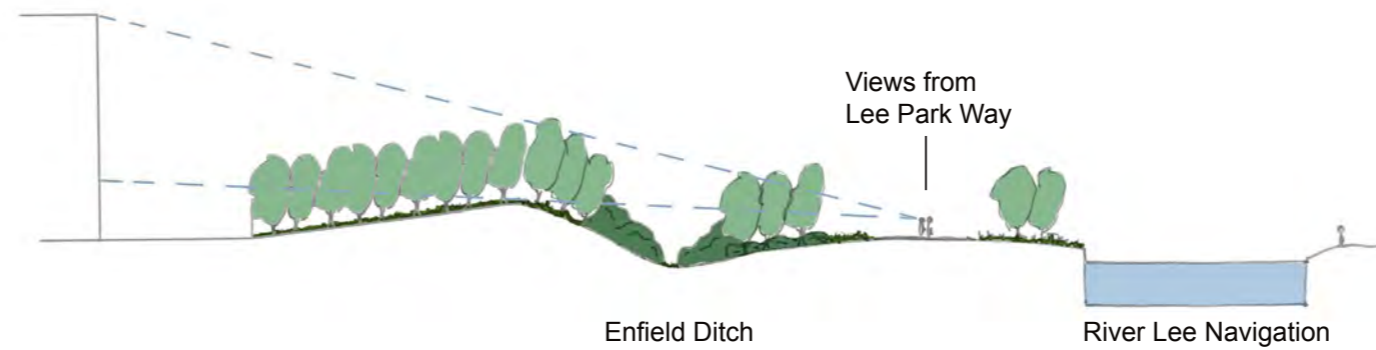


Figure 6.87: Lee Park Way existing arrangement

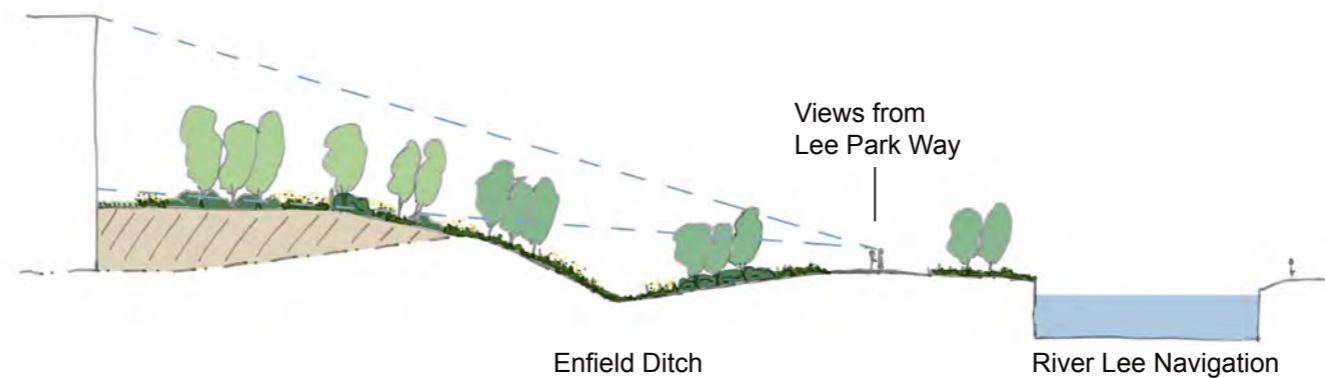


Figure 6.88: Lee Park Way low embankment option

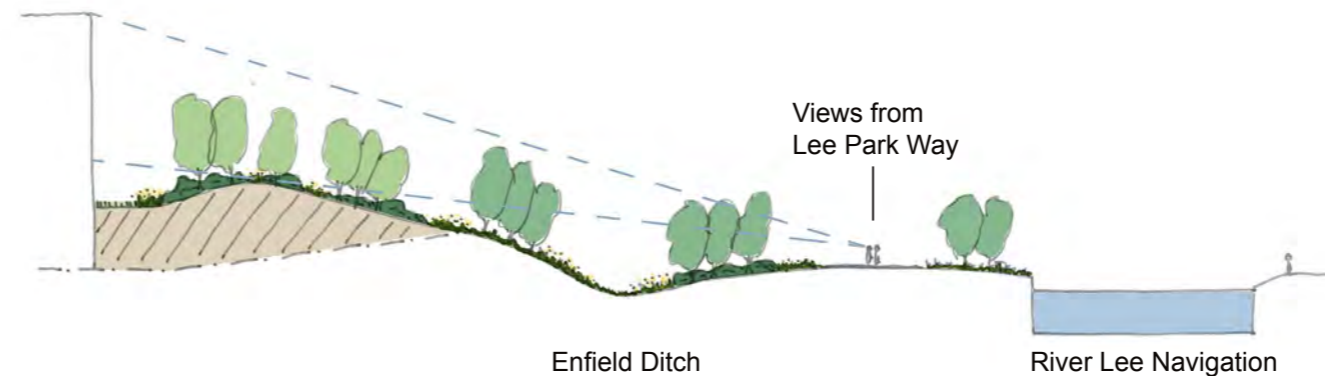


Figure 6.89: Lee Park Way medium embankment option

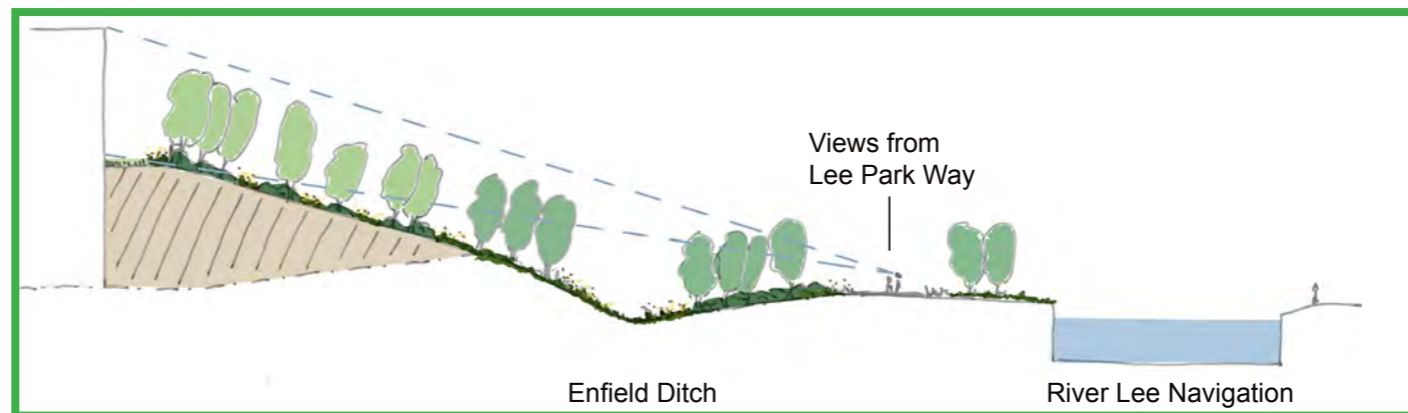


Figure 6.90: Lee Park Way high embankment option



6.5 LANDSCAPE AND ECOLOGY

6.5.2 TREE RETENTION AND REMOVAL

There are no protected trees or hedgerows within the Application Site. The approach across the Project has been to retain existing mature and ecologically valuable trees within the Application Site where possible, however some removal of trees would be required in some areas to allow for the works as shown in Figure 6.91. The proposed retention and removal of trees is described for each landscape zone later in this Section.

Retained trees would be protected in accordance with British Standard (BS5837). Adherence to the measures outlined in these standards and arboricultural assessment would ensure the long-term preservation of retained trees.

6.5.3 TOPOGRAPHY

The levels of the Application Site (see Figure 6.92) would generally remain as existing with the exception of the new landscape embankment created in the north-east of the Edmonton EcoPark adjacent to the ERF. The landscape embankment would rise to around 22.5m AOD to accommodate the vehicle access ramps and integration of the facility into the adjoining landscape. There would also be areas of fill associated with the existing EfW facility site clearance and site levelling through infill of the bunker and below ground elements. An unused void under the ERF tipping hall would also be filled to avoid requirements for additional supporting structures.

Excavation works are required to form the ERF waste and ash bunkers and to create a level site for the RRF. A small area of Enfield Ditch would also be re-profiled to compensate for loss of flood plain. Excavation would also be required in the areas to the north and south of the existing EfW facility to allow for attenuation tanks.



Figure 6.91: Illustrative tree retention and removal

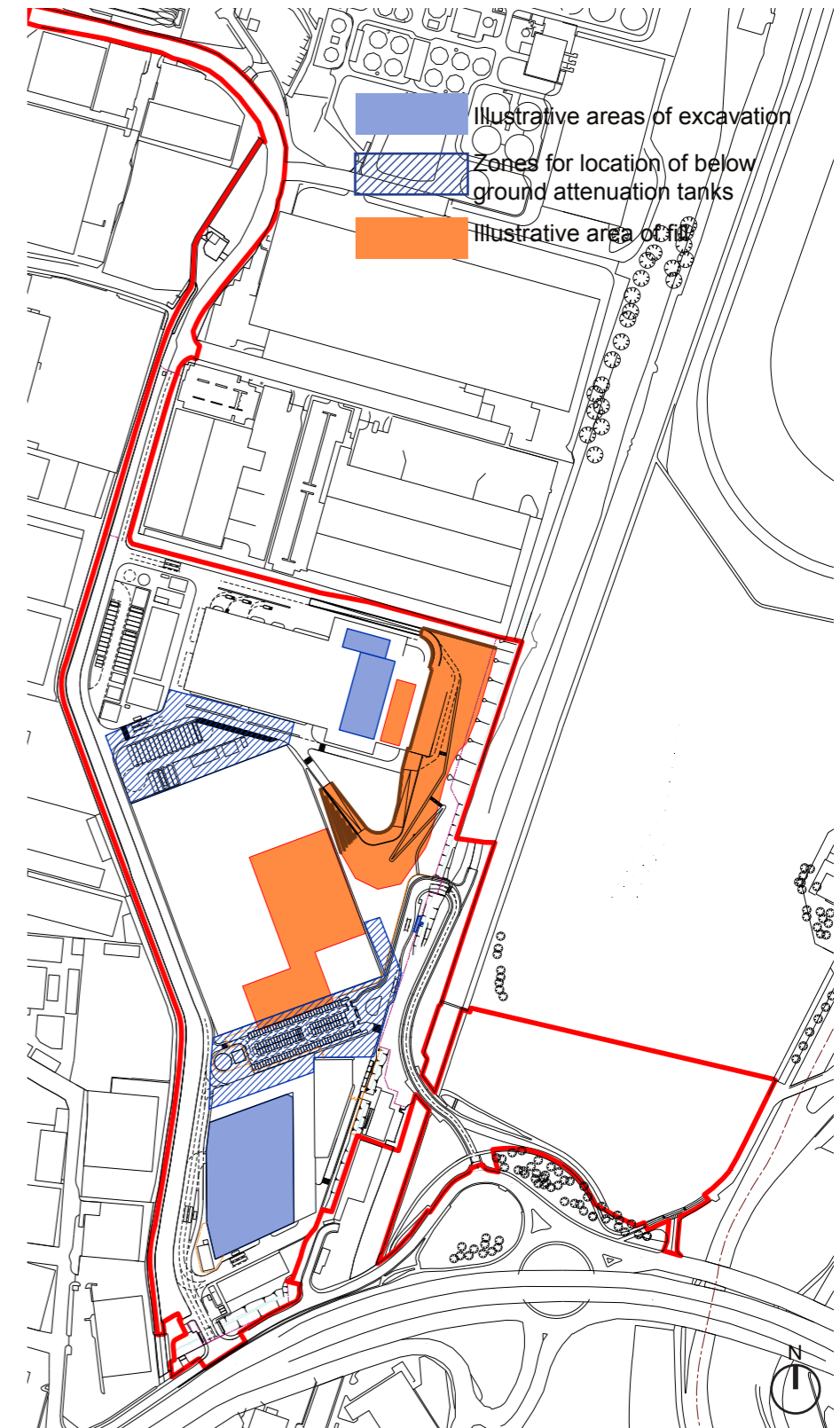


Figure 6.92: Illustrative cut and fill zones

6.5.4 ECOLOGY

The approach to ecology for the Application Site seeks to protect, where possible, and enhance the habitats found within the Application Site.

The key ecological receptors and the associated potential impacts which could arise from the construction, operation and decommissioning of the Project as identified in the ES (AD06.02) are:

- a. disturbance of bird and foraging or commuting bat species due to noise, dust and lighting within the Application Site and the surrounding designations;
- b. effects on surface watercourses by entry of contaminated run-off and the contamination of groundwater within the surrounding designations; and
- c. habitat loss within a small part of the Lee Valley SMINC located within the Application Site.

The habitat loss within the Lee Valley SMINC would mainly comprise an area of scrub and species-poor grassland within the area of the proposed Temporary Laydown Area, an area of plantation woodland along the eastern edge of the Edmonton EcoPark, and habitats either side of Lee Park Way.

The approach to ecology during construction is set out in the Code of Construction Practice (AD05.12). The implementation of ecological measures would be guided by any relevant requirements and provisions in the DCO and documents approved pursuant to the Application, including the Design Code Principles (AD02.02) and Environmental Commitments and Mitigation (AD06.03).

Effective mitigation measures have been incorporated into the design to mitigate the impacts and certain cases would provide further enhancement.

The approach to ecology has been developed in conjunction with the landscape approach and adopts the following the key principles:

- a. **inclusion of native species** - wherever possible, locally appropriate, native species would be used within the planting scheme (e.g. open woodland and wildflower meadow) for the Application Site;
- b. **retention of mature trees** - existing mature and other ecologically valuable trees within the Application Site, in particular along Enfield Ditch and Lee Park Way, would be retained where possible;
- c. **retention and enhancement of links with adjacent habitats** - would provide opportunities for fauna to traverse between the Application Site and the surrounding habitats;
- d. **provision of nest boxes for birds and bats** – on existing mature trees or free standing along Lee Park Way and where appropriate along Enfield Ditch;
- e. **inclusion of brown and green roofs within the scheme** – to include native species as appropriate; and
- f. **removal of invasive species** – appropriate treatment and control of invasive non-native species including Himalayan balsam (*Impatiens glandulifera*), Japanese knotweed (*Fallopia japonica*) and giant hogweed (*Heracleum mantegazzianum*) would be undertaken in order to comply with legislation and prevent their further spread.



Figure 6.93: Bat box on retained mature trees



Figure 6.94: Open woodland



Figure 6.95: Wildflower meadow



Figure 6.96: Log piles for habitat enhancement

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6.5.5 LANDSCAPE ZONES

The landscape approach has divided the Application Site into seven discrete landscape zones to describe the range of landscaping proposals. Areas outside of these zones are proposed to be occupied with buildings or form part of the Application Site road network. The location of the landscape zones is illustrated in Figure 6.97.

The seven landscape zones are as follows:

- a. Zone 1 - Northern zone;
- b. Zone 2 - Public areas within the Edmonton EcoPark;
- c. Zone 3 - Southern zone;
- d. Zone 4 - Western zone;
- e. Zone 5 - Lee Park Way;
- f. Zone 6 - Former EfW facility site; and
- g. Zone 7 - Temporary Laydown Area.

Information regarding the hard and soft landscaping proposals within each of these zones has been provided to illustrate the approach that has been adopted in developing the design. The description of the landscape proposals within Zone 7 Temporary Laydown Area is provided in Section 6.10 of this DAS.

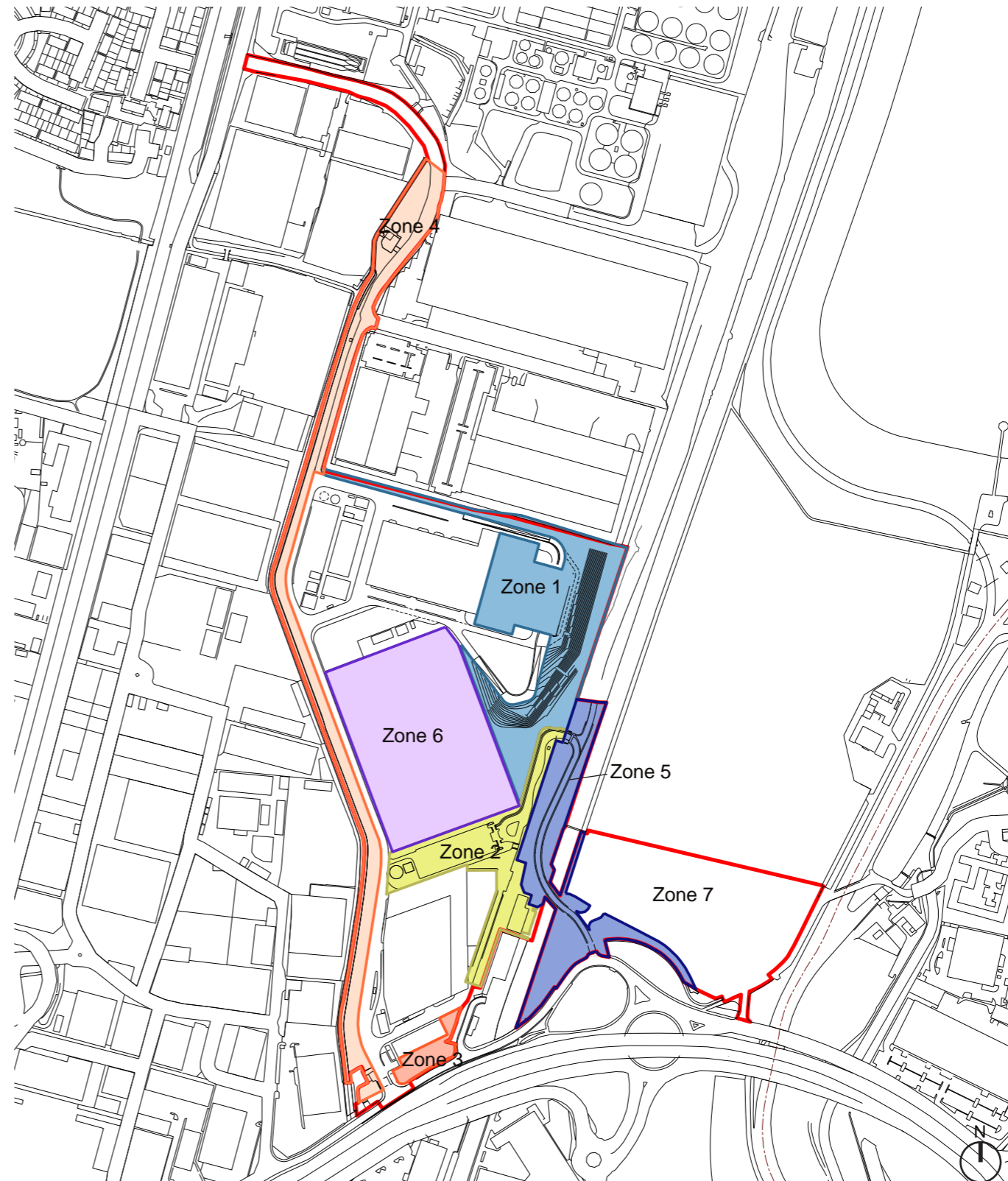


Figure 6.97: Landscape zones

ZONE 1 - NORTHERN ZONE

This zone includes the areas around the proposed ERF, the vehicle access and egress ramps for the ERF and the parts of the ERF roof which would incorporate green and brown roofs (see Figure 6.98).

The vehicle access ramp to the ERF in the north of the Application Site would rise approximately 10m above the existing ground level. The access ramp would be retained to the north by a vertical or near vertical structure such as crib walling or patterned concrete panels. The existing dense native planting along the Edmonton EcoPark boundary to the north of the ERF, which primarily consists of scrub and a few trees, would be reinstated following the realignment of the new boundary fence. Additional native trees would be included within this planting where possible providing both wildlife and screening benefits.

To the east of the ERF the existing embankment which rises approximately 3m above Enfield Ditch would be built up by approximately 10m, up to the level of the proposed main pedestrian access and the vehicle access ramps to the ERF. Where possible existing trees on the existing embankment which form part of the SMINC would be retained. To protect this existing vegetation the security fence would be located outside of this area on the new embankment. There would be a 3m wide offset of planting to either side of the fence line to aid security.

To mitigate the impact on the SMINC the new embankment would be planted with groups of native trees and seeded with a meadow mix. In addition this tree planting would help to visually reduce the scale of the proposed ERF and screen vehicle movements on the access ramps when viewed from the LVRP. The banks of Enfield Ditch would be opened up by removing areas of existing scrub to create open areas along the ditch improving light penetration to the area. In addition, all invasive species would be removed. New wet meadow mix as well as marginal planting would be introduced alongside Enfield Ditch. The proposed planting together with the improved light conditions would enhance biodiversity potential of the ditch.

The landscape and ecology design allows the potential for a new covered walkway connecting the car park, other publicly accessible areas within Zone 2 and the main public access to the ERF to extend across the new embankment. The path would be designed to a fully accessible standard and resting points would be incorporated at regular intervals. This allows the opportunity for visitors to enjoy the new landscape setting of the ERF along this footpath.

To the south-east of the ERF the planting of groups of trees would continue along the new embankment which abuts the vehicle egress ramp. Gabions, or another appropriate retaining structure, would be used as a retaining structure to support the western section of the vehicle egress ramp.

A triangular shaped open space where a meadow seed mix would be introduced would be located immediately to the south of the vehicle exit ramp, which would be in-keeping with the existing open space. An existing memorial bench would be relocated from within this area.

A green and a brown roof would be incorporated onto the roof structures of the tipping hall and the crane hall of the ERF respectively to enhance biodiversity, slow down rainwater runoff as well as to help connect the building with its setting adjacent to the LVRP.

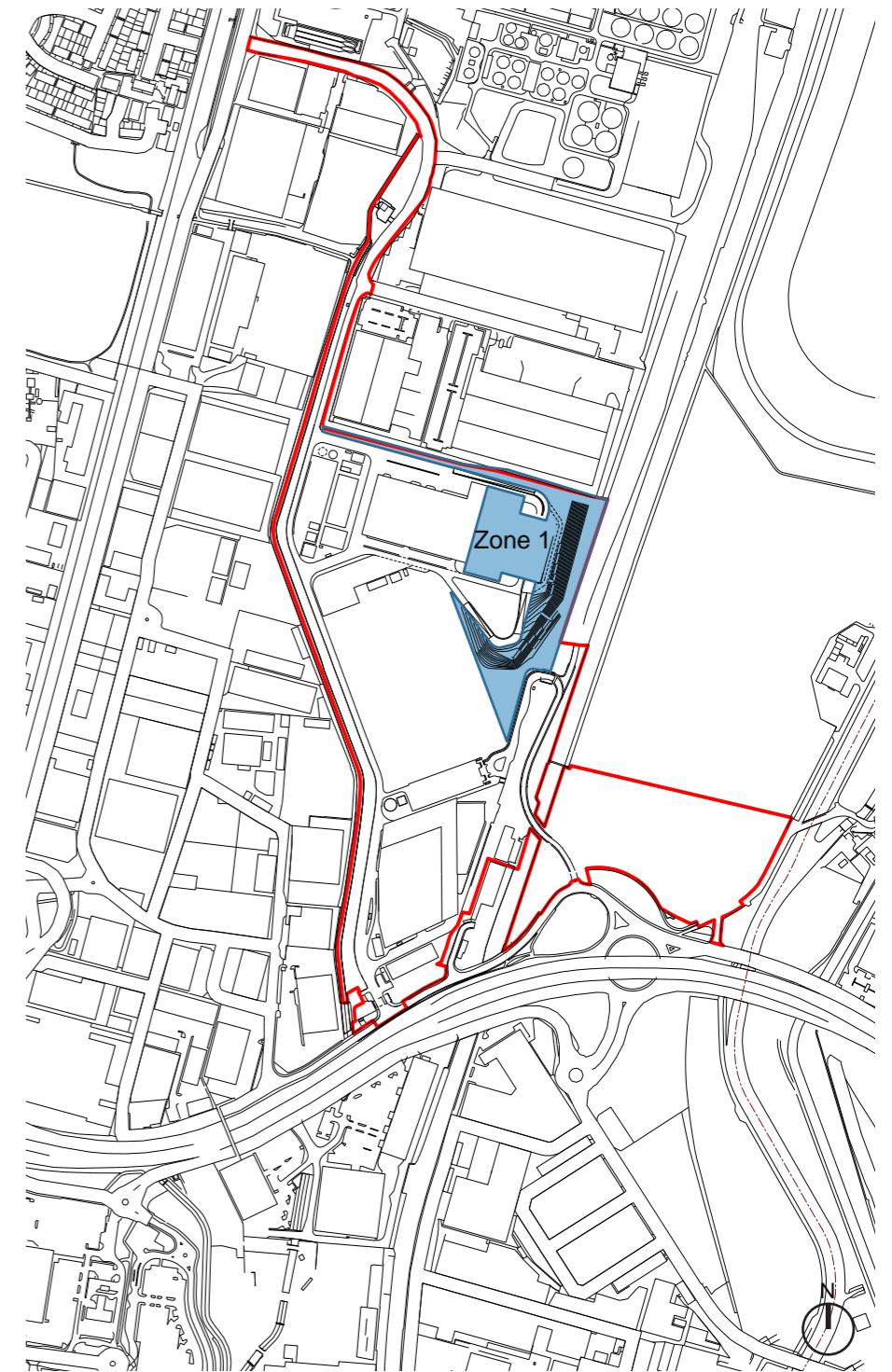


Figure 6.98: Zone 1

6.5 LANDSCAPE AND ECOLOGY

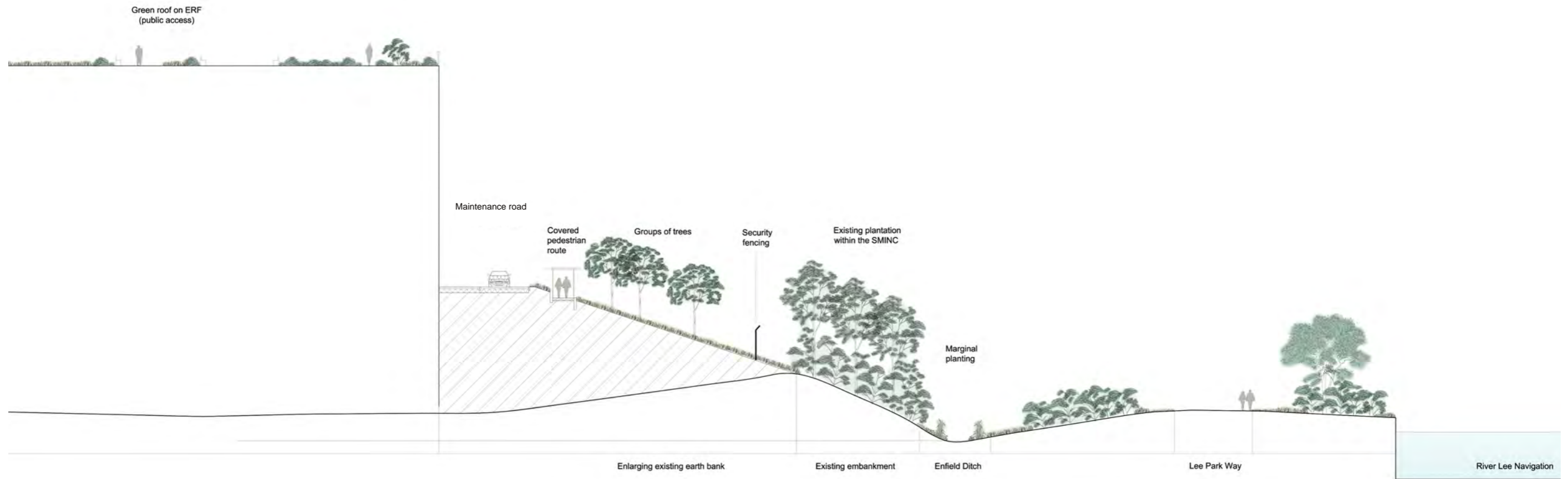


Figure 6.99: Illustrative section through ERF and proposed embankment



Figure 6.100: Open woodland planting



Figure 6.101: Green roof planting



Figure 6.102: Resin bound gravel footpath



Figure 6.103: Axonometric view illustrating ERF's green and brown roofs in their landscape context

ZONE 2 - PUBLIC AREAS WITHIN THE MAIN SITE

This zone covers the proposed publicly accessible areas within the Edmonton EcoPark.

Within this zone (see Figure 6.107) the objective is to create a pleasant environment for those visiting and working at the Edmonton EcoPark while allowing for the required traffic movements. An avenue of ornamental trees along the access road which leads from Lee Park Way would be used to guide staff and visitors towards the car park, the RRC and EcoPark House.

This public area would be separated from the operational part of the Edmonton EcoPark by an internal fence line. The style of fencing could be visually permeable allowing visual continuity between the public and adjacent landscaped operational spaces while still providing a secure internal boundary.

Feature trees could form a focal point to the east of the car park. There would be low ornamental shrub planting around the car park and EcoPark House to provide seasonal interest and to enhance general visual amenity.

The hard surfaced area at the RRC entrance would be designed to guide and reduce conflict between the various circulation flows within this area i.e. vehicles entering and leaving the RRC, and pedestrians coming to and from the car park to the RRF, RRC and EcoPark House. Where possible priority would be given to pedestrians within this area and design approaches such as changes in surfacing materials or changes in level of the roads used to reinforce the pedestrian priority.

At EcoPark House and the wharf area adjacent to the River Lee Navigation, high quality paving material would be used to provide an attractive setting to this publicly accessible building. In addition the wharf would be designed to facilitate its continued use by the Edmonton Sea Cadets who would be based at EcoPark House. A row of trees to the west of EcoPark House would visually separate it from the operational part of the Edmonton EcoPark.



Figure 6.104: Illustrative section through internal access road



Figure 6.105: Ornamental planting within car park



Figure 6.106: Ornamental planting in a planter

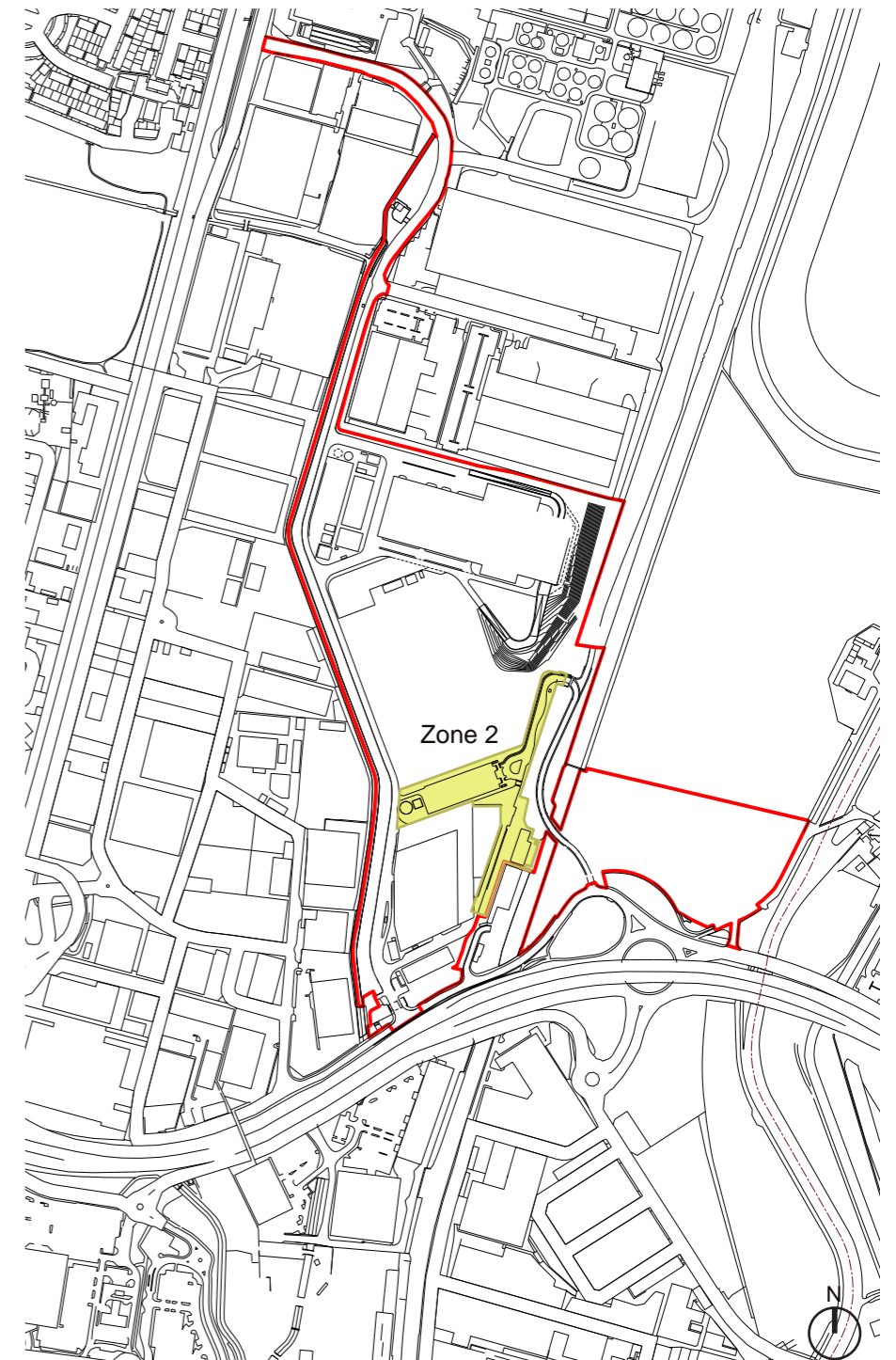


Figure 6.107: Zone 2

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ZONE 3 - SOUTHERN ZONE

This zone (see Figure 6.110) comprises the area proposed to be landscaped along the southern Edmonton EcoPark boundary. A possible future development of an energy centre, which does not form part of the Application, could be located immediately to the north of zone 3. The landscape would be designed to soften the appearance of this future development from the south and help to integrate the building into the Application Site. Some limited re-profiling would be required to provide for the flood attenuation required for the Application Site.

The landscaping within this area would be designed to provide an attractive setting for the Edmonton EcoPark when viewed from the south and to increase biodiversity along Enfield Ditch.

New mixed native and ornamental tree planting could soften the building lines. A meadow seed mix would be introduced to visually enhance the area and to attract wildlife.

Along Enfield Ditch areas of wet meadow seed mix as well as planting of marginal species would be introduced to increase its ecological value.



Figure 6.109: Marginal planting

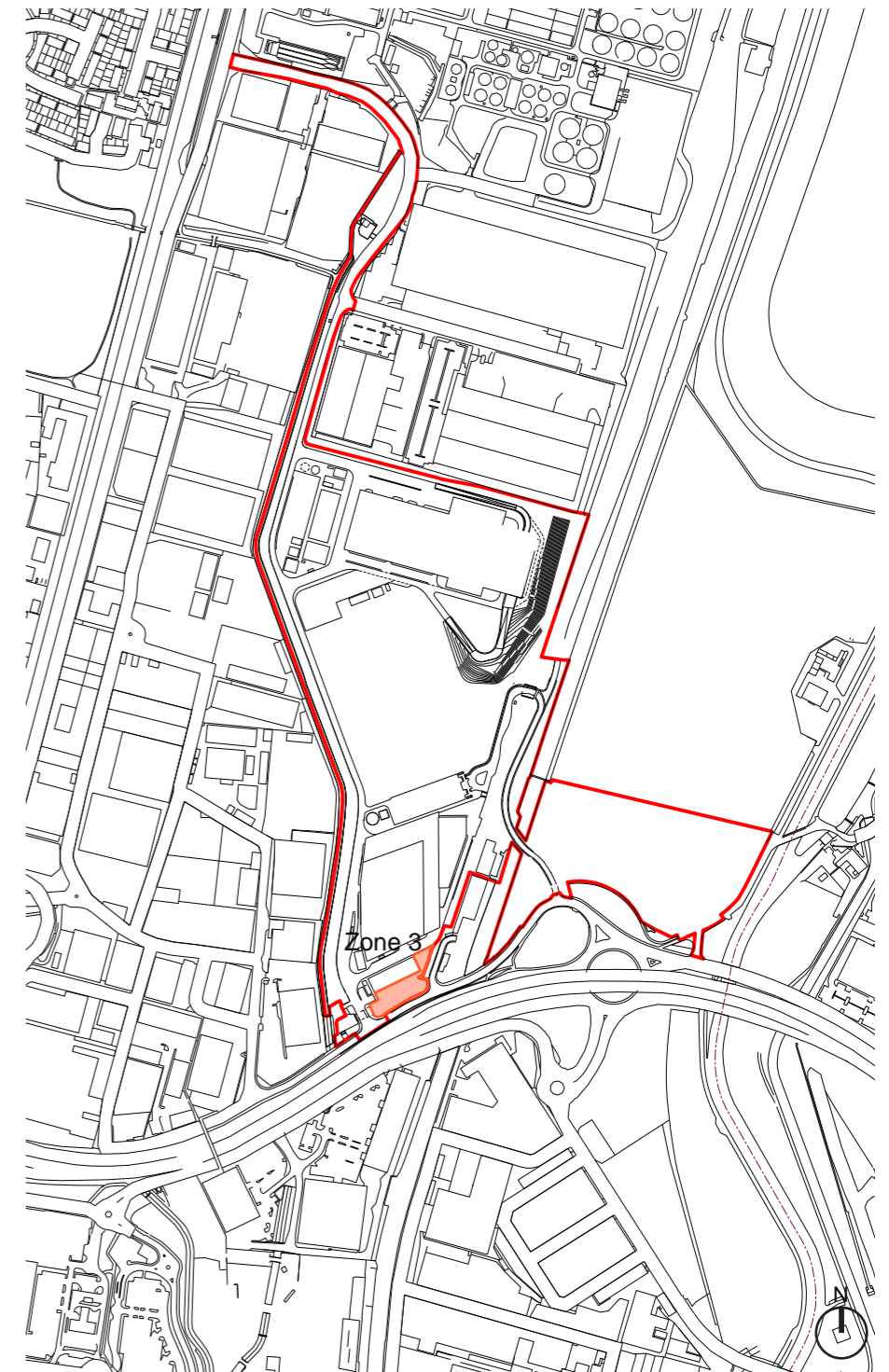


Figure 6.110: Zone 3

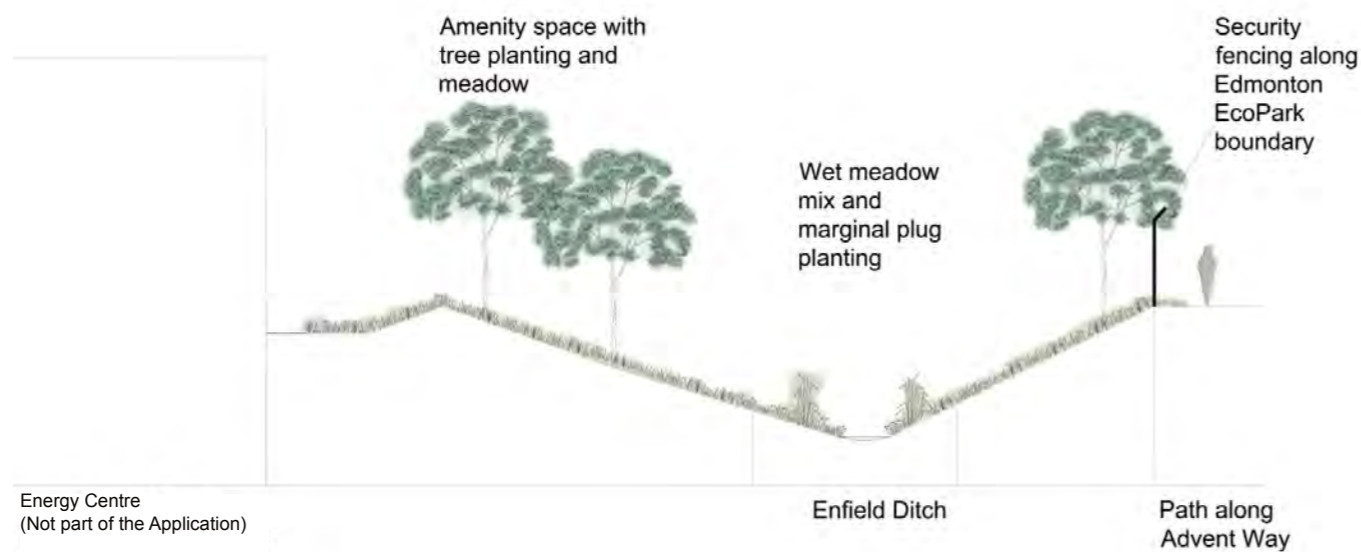


Figure 6.108: Illustrative section through Enfield Ditch

ZONE 4 - WESTERN ZONE

This zone encompasses the verge along Salmon's Brook which runs along the western boundary of the Application Site (see Figure 6.113).

The zone is heavily constrained by an existing underground service corridor which runs within the grass verge adjacent to Salmon's Brook, restricting any new tree or shrub planting in this area. To facilitate the upgrade of the road and subterranean services along the Deephams Farm Road section, the existing mature willow trees would be removed.

To enhance the ecological and amenity value of this area, an appropriate meadow seed mix would be used along the eastern bank of Salmon's Brook while the existing closely cut grass sward adjacent to the service road and over the service corridor would be reinstated following works to utilities.



Figure 6.112: Meadow planting



Figure 6.111: Illustrative section through Salmon's Brook and adjacent service road

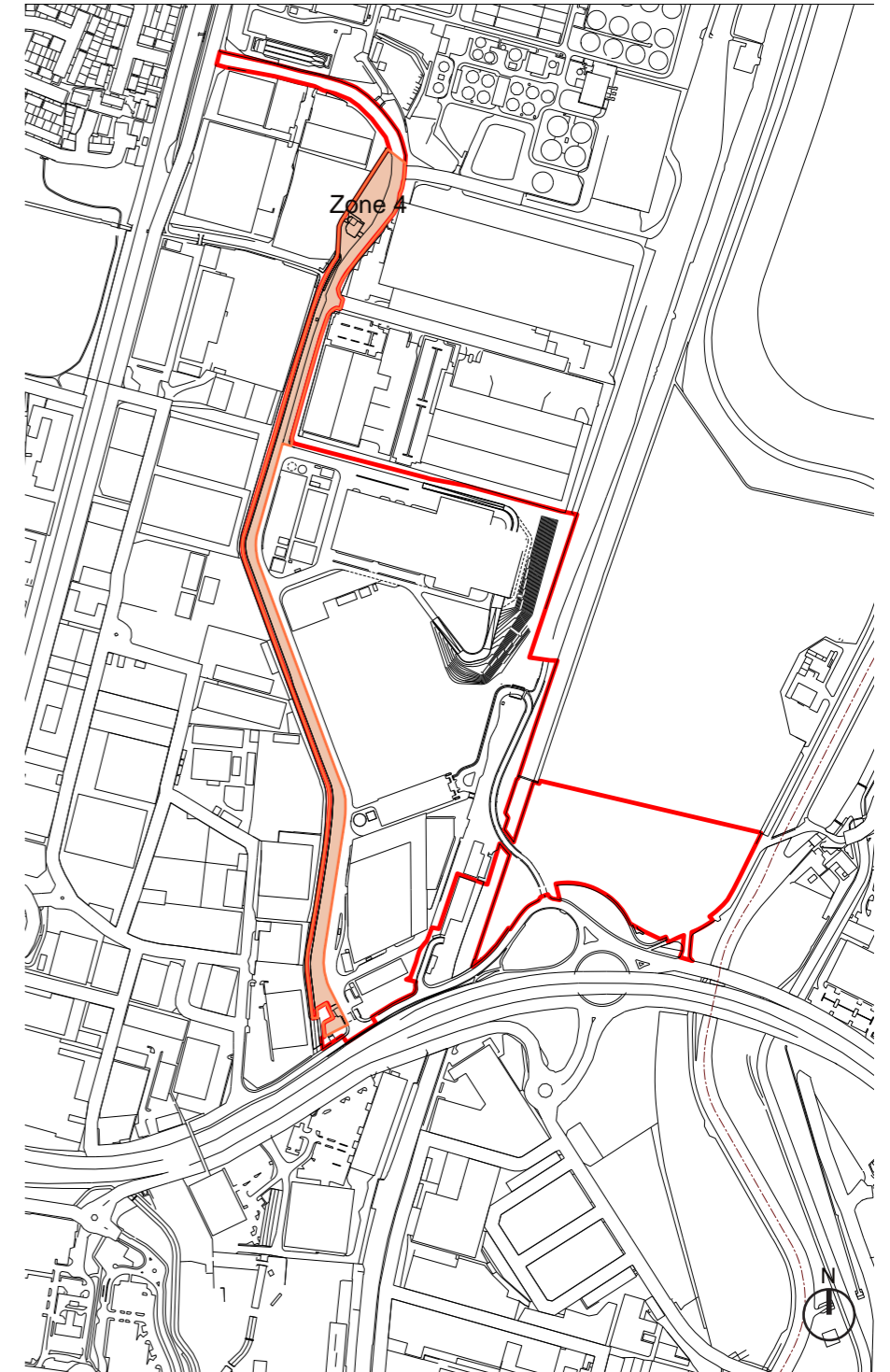


Figure 6.113: Zone 4

6.5 LANDSCAPE AND ECOLOGY

ZONE 5 - LEE PARK WAY

This zone comprises the area around Lee Park Way (see Figure 6.115) which would be upgraded to provide a new pedestrian and vehicle entrance to the Application Site and would maintain access to NCN Route 1. The landscape proposals in this zone would enhance the visual amenity along this route for the benefits of cyclists, pedestrians and canal users. The existing routes to the River Lee Navigation towpath comprise an informal footpath and timber steps which are overgrown and poorly defined. The route would be reinstated with clear and legible access routes to the River Lee Navigation towpath with surfacing in-keeping with the wider area.

New informal groups of native trees at either side of Lee Park Way would soften views of the Project and help to strengthen the foraging habitat available for birds, bats and invertebrates in this area.

Approximately a 3m wide offset of planting along the boundary fence at the Edmonton EcoPark would be incorporated for security reasons, this area would be seeded with an appropriate grass or meadow mix. Areas of native shrub planting including thorny species such as hawthorn, blackthorn and dog rose would be planted beyond this security strip to deter people from accessing the land along the edge of the Edmonton EcoPark, while providing foraging and nesting habitat for birds.

Appropriate signage providing information would be provided at the Lee Park Way entrance of the Edmonton EcoPark.



Figure 6.114: Illustrative section through Lee Park Way

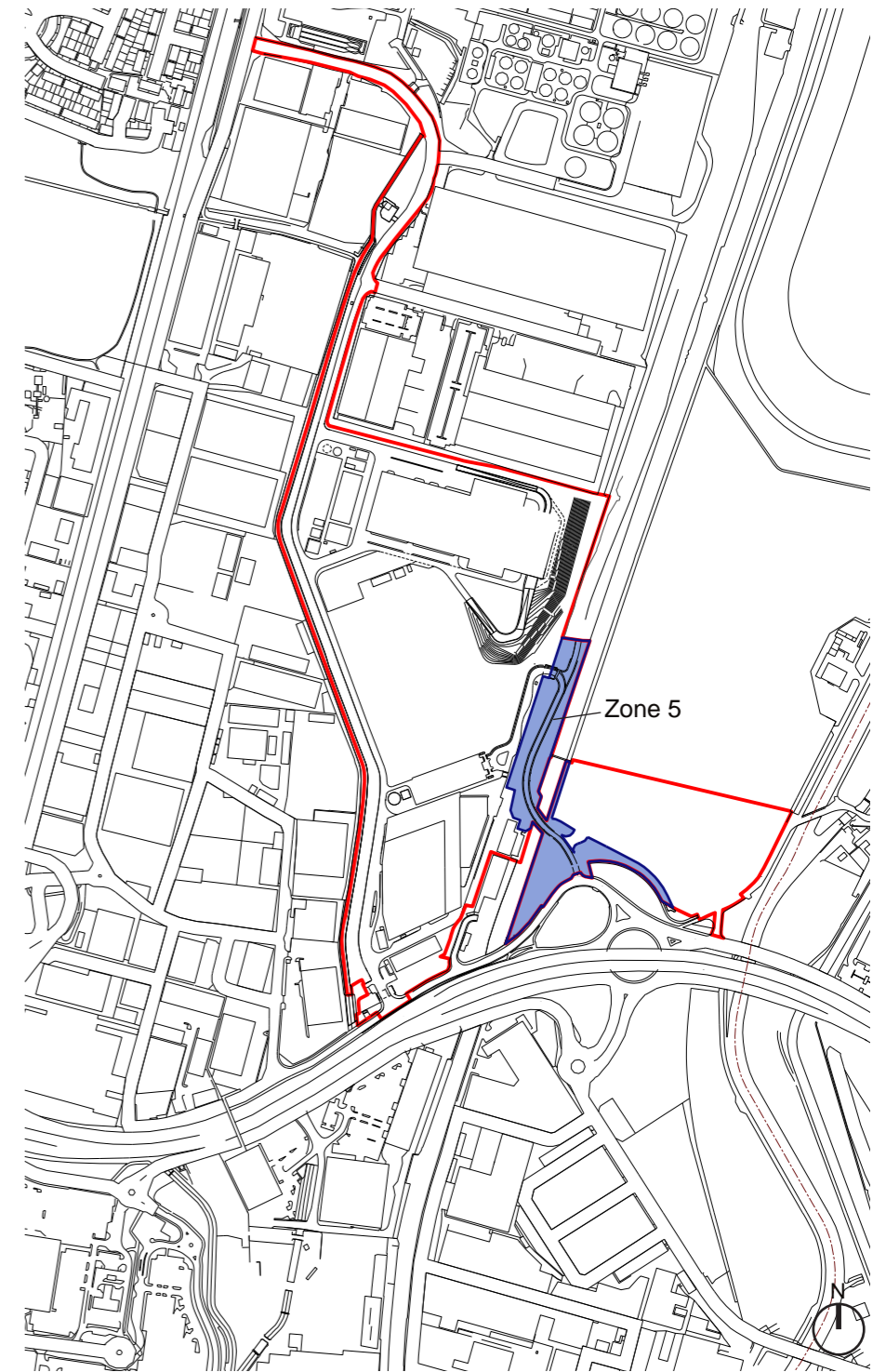


Figure 6.115: Zone 5



Figure 6.116: Entrance to Lee Park Way



Figure 6.117: LVRPA information board

ZONE 6 - FORMER EfW FACILITY SITE

This zone comprises the site of the former EfW facility (see Figure 6.118). Following the decommissioning and demolition of the existing EfW facility the ground would be left with a hardcore surface to enable its use as a future development site. This surfacing would provide the opportunity for interim uses that may be identified at a future date.

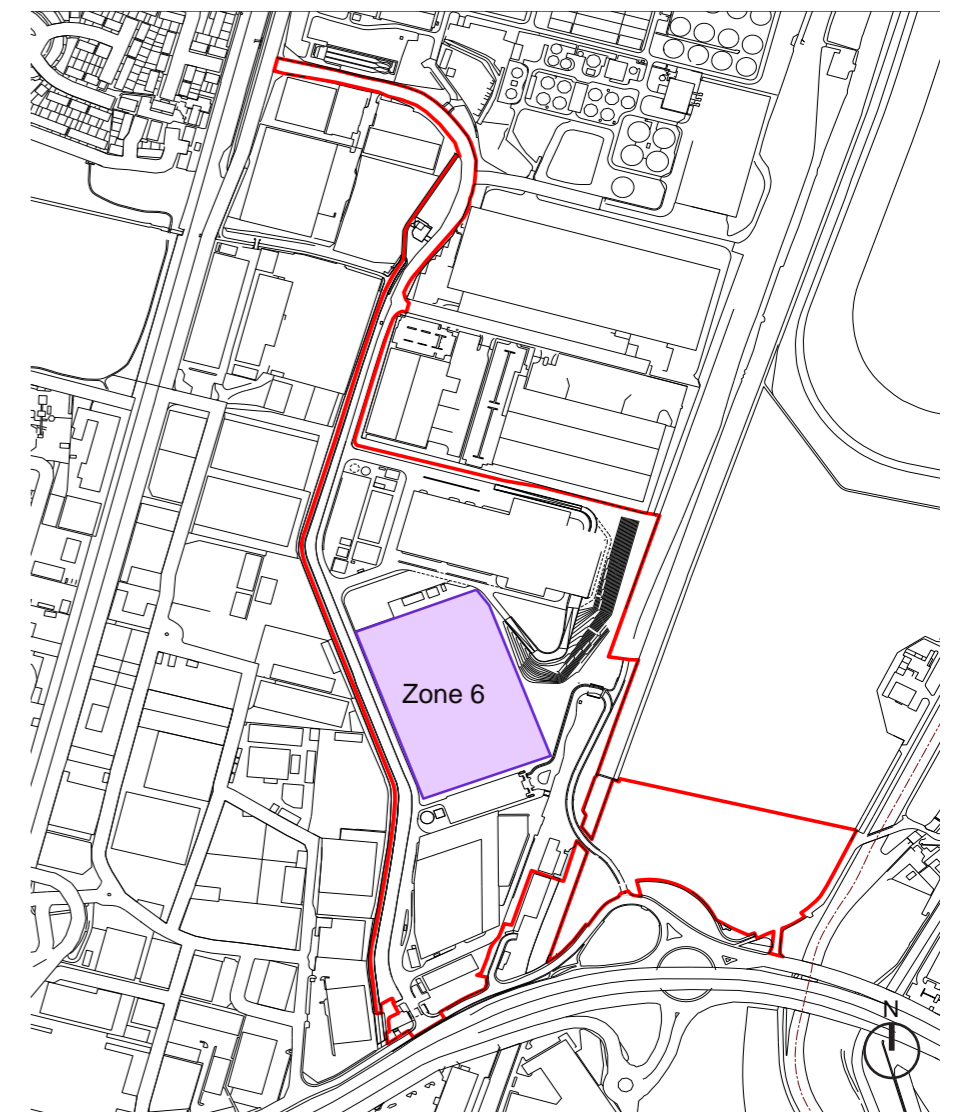


Figure 6.118: Zone 6

6.6 UTILITIES

6.6.1 OVERVIEW

This section provides a description of the utilities and services required to serve the Project and the export of energy from the ERF. Specifically, it refers to electricity import and export, water, wastewater, foul water drainage, gas requirements and telecoms. The Utilities Strategy has been developed with regard to the Project's objectives, site constraints, sustainable resource use and ecological value of the adjoining watercourses. The full details of proposals is provided in the accompanying Utilities Strategy (AD05.10).

The key principles addressed in the Utilities Strategy design are:

- reuse as much water as possible on-site;
- minimise the discharge of foul, processed water and wastewater to the public sewer;
- improve the existing drainage system, isolating the foul drainage and wastewater system from the surface drainage, to decrease the volume discharged to the Chingford Sewer;
- optimise the amount of gas used as far as possible;
- fulfil legal requirements;
- fulfil statutory undertaker requirements regarding new supplies and connections to existing networks supplies; and
- ensure that the existing EfW facility and the proposed ERF would be able to operate independently during the transition and commissioning phase.

The key elements of the Utility Strategy identified in the design process are illustrated in Figure 6.121:

- ensuring available room for implementation of new utilities on-site with minimal interference to those existing, with two completely independent areas being allocated to incoming and outgoing services 'an internal distribution corridor';
- safeguard land within the Edmonton EcoPark for a potential district heating pipework corridor (see Section 6.7 for more information); and
- sufficient water intake and discharge infrastructure support to the chosen ERF cooling system.

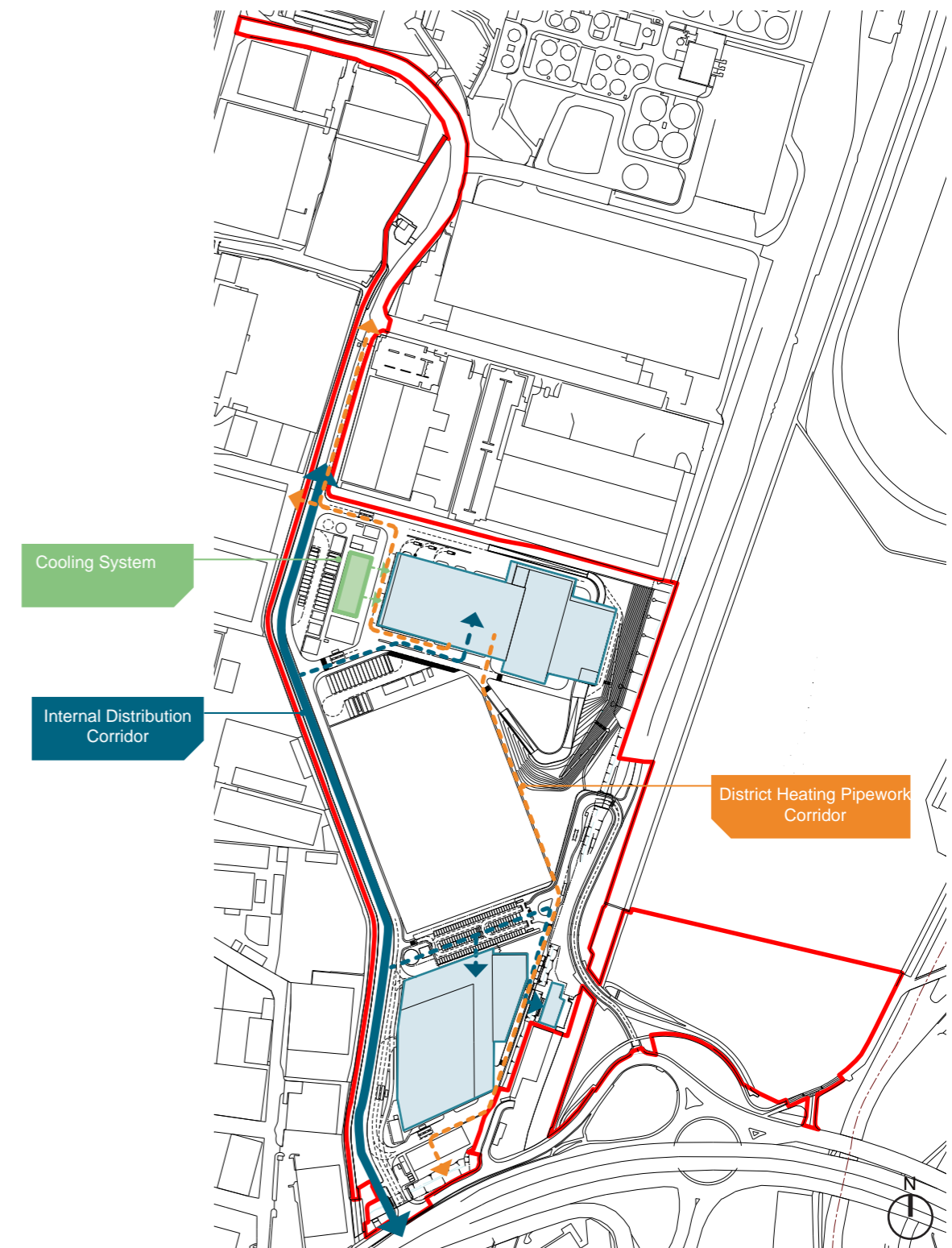


Figure 6.121: Utilities Strategy diagram

6.6.2 PRIMARY ELEMENTS OF UTILITY DESIGN

INTERNAL DISTRIBUTION CORRIDOR

An area reserved for main pipes and cables entering and exiting the Application Site has been proposed. Thus, new export/import cables, ducting and pipe work linking the ERF and the RRF with existing off-site networks would be located within a common services corridor running parallel to Salmon's Brook.

This combined corridor would control the routing of services such as: existing TWUL main, existing BT cables, Chingford Sewer, electrical export cables, main gas pipe supplying the Edmonton EcoPark, potable water main supplying the Edmonton EcoPark, surface drainage and foul drainage (when required), and internal cables and pipes for utilities inside the Edmonton EcoPark.

Figure 6.122 shows a typical section through the common services corridor which would accommodate primary utility infrastructure.

DISTRICT HEATING PIPEWORK CORRIDOR

The design safeguards a corridor of land within the Edmonton EcoPark for potential district heating infrastructure. This could be accommodated in a trench running parallel to the eastern boundary of the Edmonton EcoPark near Enfield Ditch, separate to the main utilities corridor.

COOLING SYSTEM

The selected technology for the cooling system is an Air Cooled Condenser ('ACC'). In the ACC installation, the low pressure exhaust steam from the turbine passes through a large duct to rows of condenser units cooled by air, forced through heating surfaces by large fans. The main reason for selecting this technology is because of the minimal water requirements due to no evaporative losses. Therefore, wastewater disposal requirements would be limited to that needed for cleaning of heating surfaces. Another environmental reason is that it produces no visible plume due to it being an enclosed system and therefore no moisture is lost to the surrounding atmosphere.

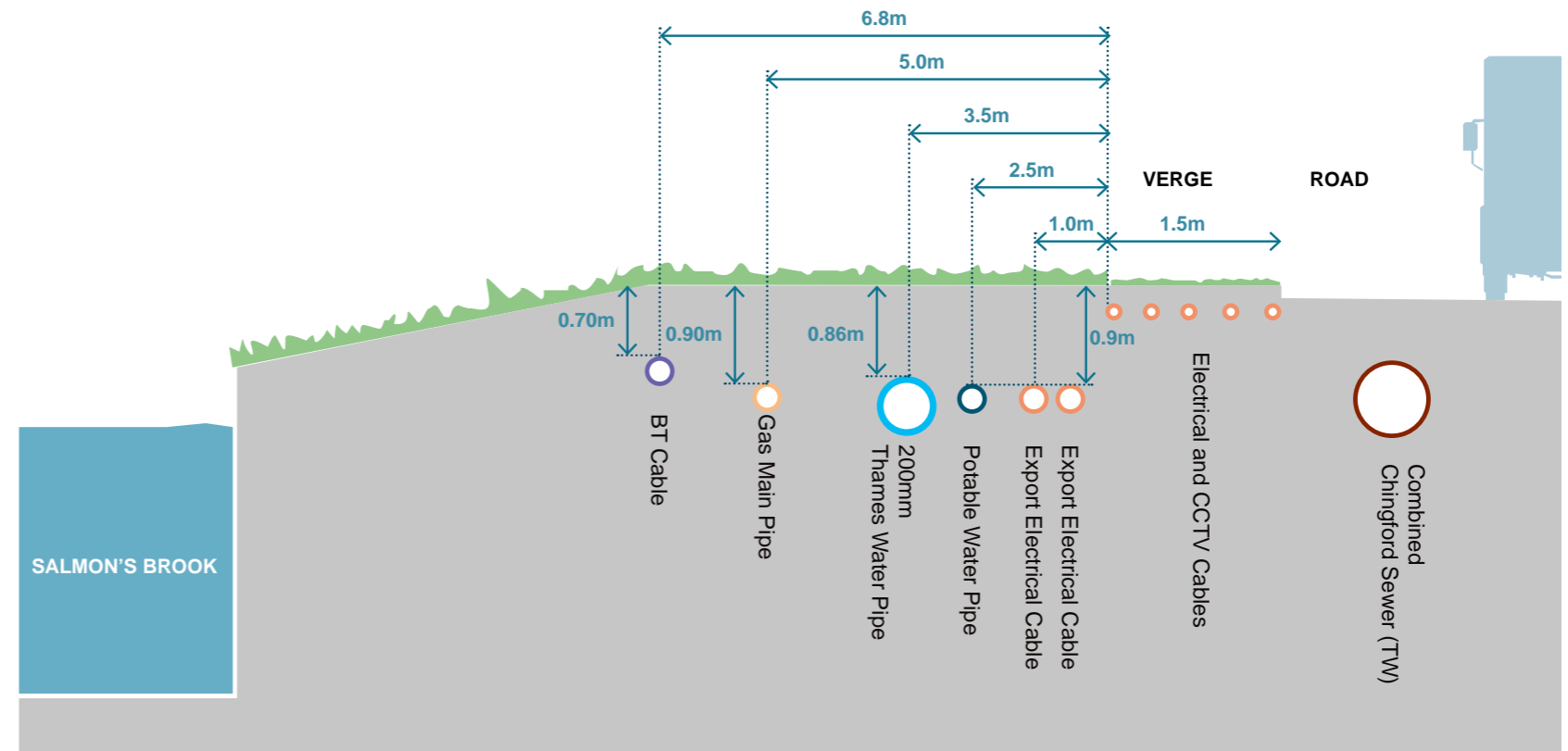


Figure 6.122: Illustrative typical cross section of internal distribution corridor (all measurements are indicative)



Figure 6.123: Example of a cooling condenser

6.6 UTILITIES

6.6.3 PROPOSED UTILITIES

ELECTRICITY

The ERF would export electricity to the electricity grid via a new transformer and switchroom, located within the Application Site boundary. Consultation with UK Power Networks (UKPN) has confirmed the point of connection into the existing grid would be at UKPN's Tottenham Grid Substation, located approximately 2km from the Edmonton EcoPark. This connection would be via two underground cables.

Existing electrical assets for energy export would be maintained on-site and in operation until such time as the proposed ERF would be completed and operational, thereby enabling the decommissioning of the existing EfW facility.

Power supply within the Edmonton EcoPark would be managed via private wire network supplied from the proposed switchroom.

GAS

Gas is required during the start-up, stabilisation and shut down of the proposed ERF. For the basis of design, it has been established that in order to achieve optimal flexibility, each process line would start up and shut down independently.

National Grid has confirmed that the nearest main with sufficient capacity to supply this optimum gas requirement is 200m away from the Application Site boundary. A new connection to this main is required. A gas pressure reduction kiosk would be installed and from there the gas would be supplied to the ERF boilers.

Existing gas assets (pipe and existing reduction pressure kiosk) for gas supply would be maintained on-site and remain in operation until such time as the proposed ERF is completed and in operation thereby enabling the decommissioning of the existing EfW facility.

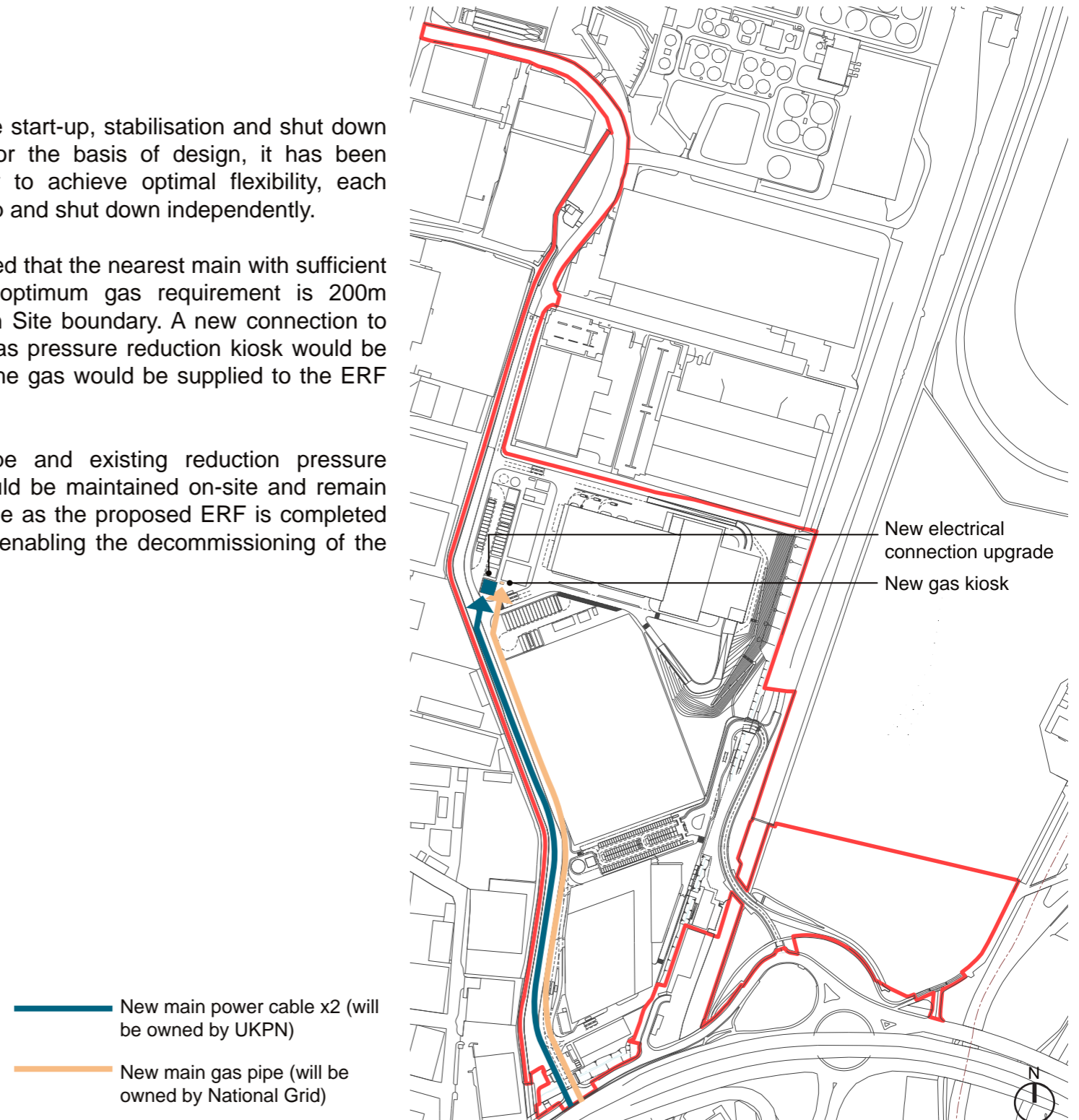


Figure 6.124: Illustrative electricity and gas alignment

WATER

Water is required for a number of purposes within the Edmonton EcoPark such as domestic, boiler water make-up, the fire fighting system, dust suppression system, scrubbers for flue gas treatment and wash-down. As the cooling system selected is Air Cooled System, no water is required for the cooling towers.

In order to achieve design principles, a water management strategy has been developed taking into account that the reuse of water on-site is essential. The sources of water being proposed are the TWUL Main, Deephams STW outflow channel (via a pumping station) and filtered rainwater harvesting. Rainwater harvesting would be used for purposes where quality of water is not crucial, such as dust suppression system, grey water, fire-fighting and wash-down. The potable water connection would be to the Main located near the main entrance to the Edmonton EcoPark.

Rainwater Harvesting

As a design principle and following recommendations from the EA, a rainwater harvesting system would be integrated in the design.

The rainwater would undergo filtering and disinfection to assure correct quality and also safety for the operators. Rainwater would be collected in reservoirs for the filtering. Treated rainwater would be used for the dust suppression system, vehicle wash area and fire-fighting.

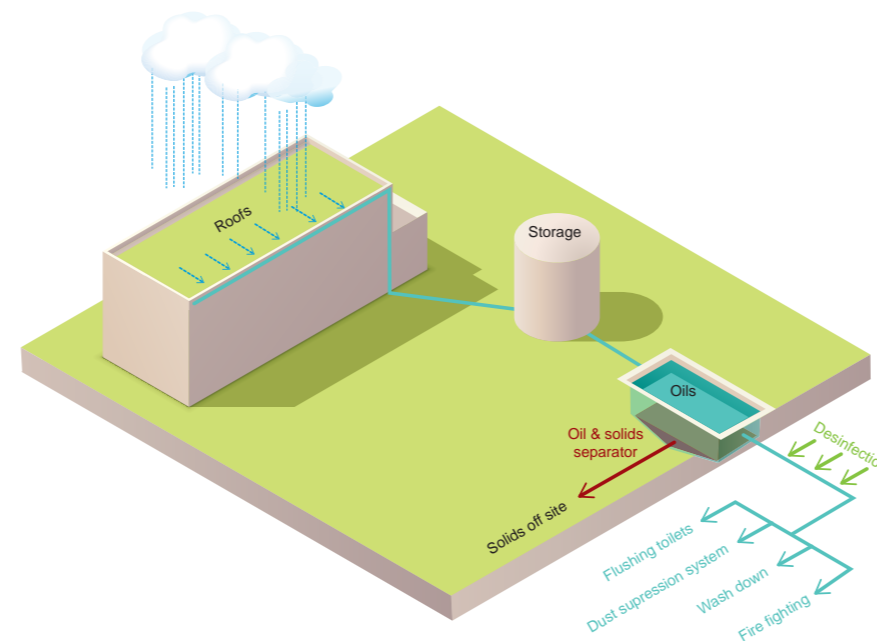


Figure 6.125: Rainwater harvesting diagram

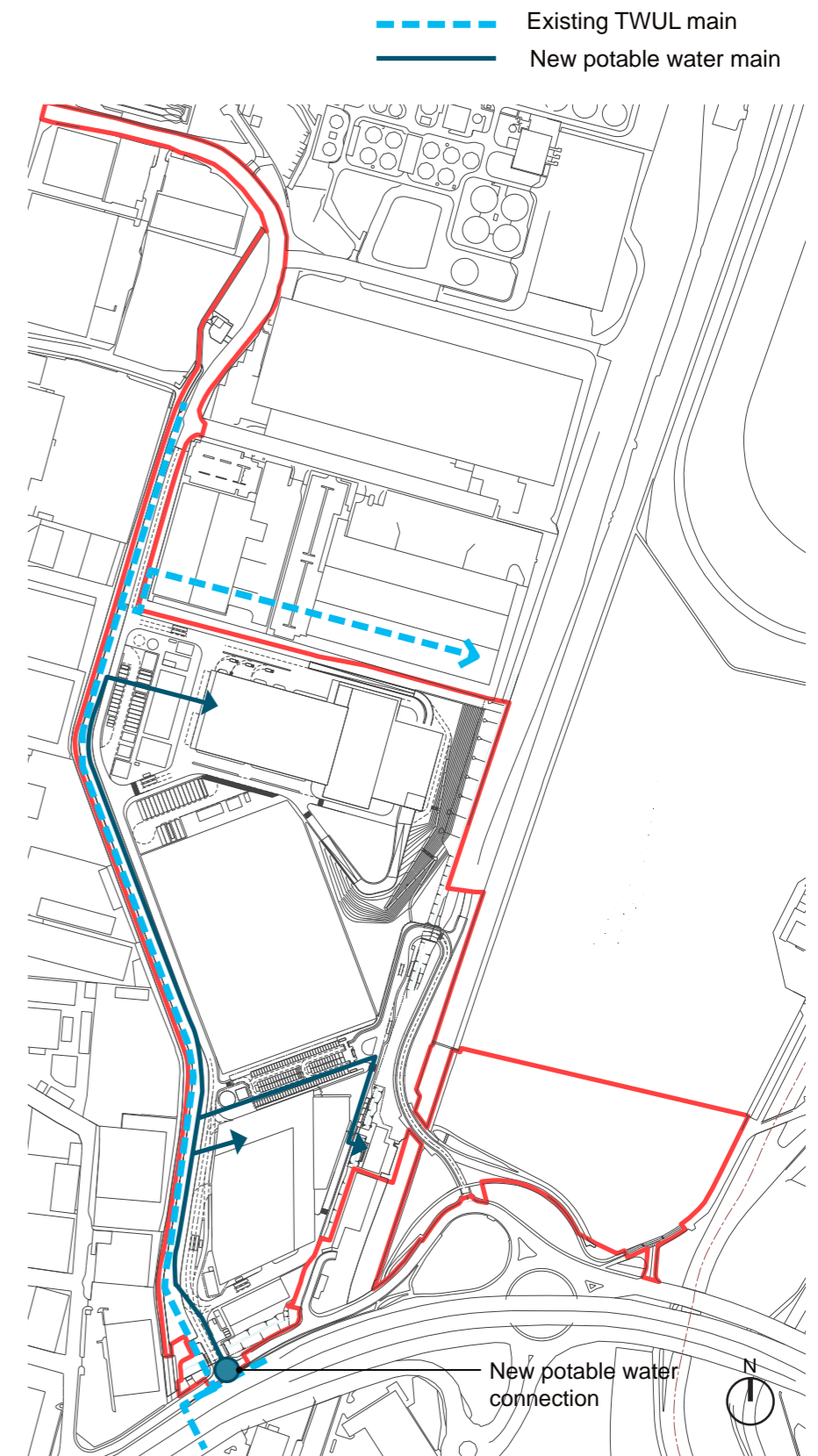


Figure 6.126: Illustrative water connections

6.6 UTILITIES

WASTEWATER AND FOUL WATER DRAINAGE

It is important that waste water and foul water are controlled and maintained at a minimum flow. Thus, two independent systems have been designed in order to improve the operation and control from the existing systems.

Proposed Wastewater Discharge

A wastewater treatment (WWTP) plant would treat wastewater streams from boiler blowdown, de-mineralised plant effluent and wash-down area effluent in order to decrease the contaminants contained in the effluent. The treated water would be discharged into the Chingford Sewer. The discharge effluent would achieve all requirements regarding the quality of the effluent.

Proposed Foul Water Discharge

Foul drainage would be designed to collect domestic waste from buildings with kitchen, washing facilities and toilet facilities. The new foul drainage would be connected to the existing Chingford and Angel sewers.

UTILITY DIVERSIONS

The only proposed diversion with a high impact on existing infrastructure is the Chingford and Angel sewer diversion proposed at the southern end of the Application Site. Due to the design of RRF layout a sewer diversion and a build over agreement has been agreed in principle for the Chingford Sewer and the Angel Sewer. TWUL has been consulted regarding the proposed combined sewer diversion and has agreed the diversion design for both sewers.

TELECOMMUNICATIONS

The proposed facility would require standard telecoms systems for internal and external communication. There are existing BT cables which run along Salmon's Brook and Enfield Ditch which would be used. BT Openreach has confirmed that infrastructure is available within the Application Site.

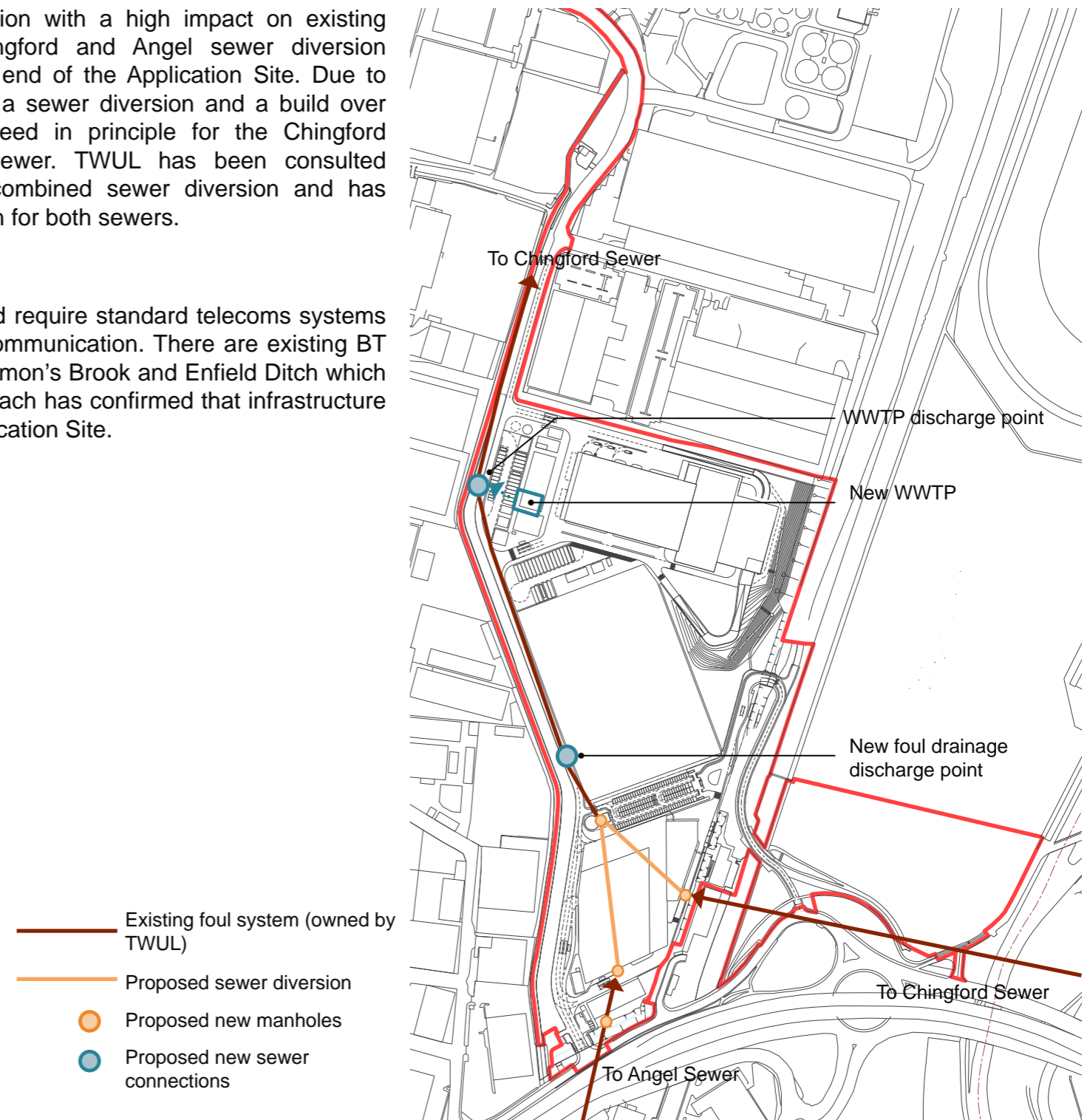


Figure 6.127: Wastewater and foul water drainage strategy

6.7 DISTRICT HEATING PIPEWORK SAFEGUARDING

6.7.1 OBJECTIVES

The proposed ERF would be designed to allow heat export and it is therefore necessary to safeguard suitable routes for heat pipe networks to supply both identified and potential future customers for this heat source.

6.7.2 PROVIDING HEAT AND ELECTRICITY



The Lee Valley Heat Network (LVHN) is being promoted by LB Enfield and is a planned heat network which is aiming to supply around 100GWh of heat to customers in the area. The Applicant is actively working towards an agreement for the supply of heat should the network materialise.

The design of the Project has allowed for heat off-take facilities to provide heat to an existing or future district heating network through Combined Heat and Power (CHP) operation. CHP operation is a term given to a thermal generating plant which can provide useful energy in the form of electrical power and heat for use in space heating and hot water applications in buildings, industrial processes and other uses.

The design of the ERF would enable heat export by including heat off-take equipment which would divert steam from the power generation process. The heat would then be exported off-site by means of a district heating system to heat customers.

The design has safeguarded two pipework routes (Figure 6.128) to enable the transmission of heat from the proposed ERF to a district heating network or heat user should this materialise. A southern route is identified linking the ERF to either a potential LVHN District Heating Energy Centre (DHEC) on the southern part of the Edmonton EcoPark. A northern route is safeguarded to allow export to the north of the Edmonton EcoPark.

An assessment was made of the heat demand in the area which could be supplied by a commercially viable district heating network. The design of the ERF has allowed for a heat supply to match the possible range of heat demand of between 10-160MWth. The initial plans for LVHN heat demand would allow the ERF to reduce its emissions sufficiently through heat export to meet the Mayor's Carbon Intensity Floor. For further information, please refer to the CHP Strategy (AD05.06).

-  District heating pipework southern route
-  District heating pipework northern route

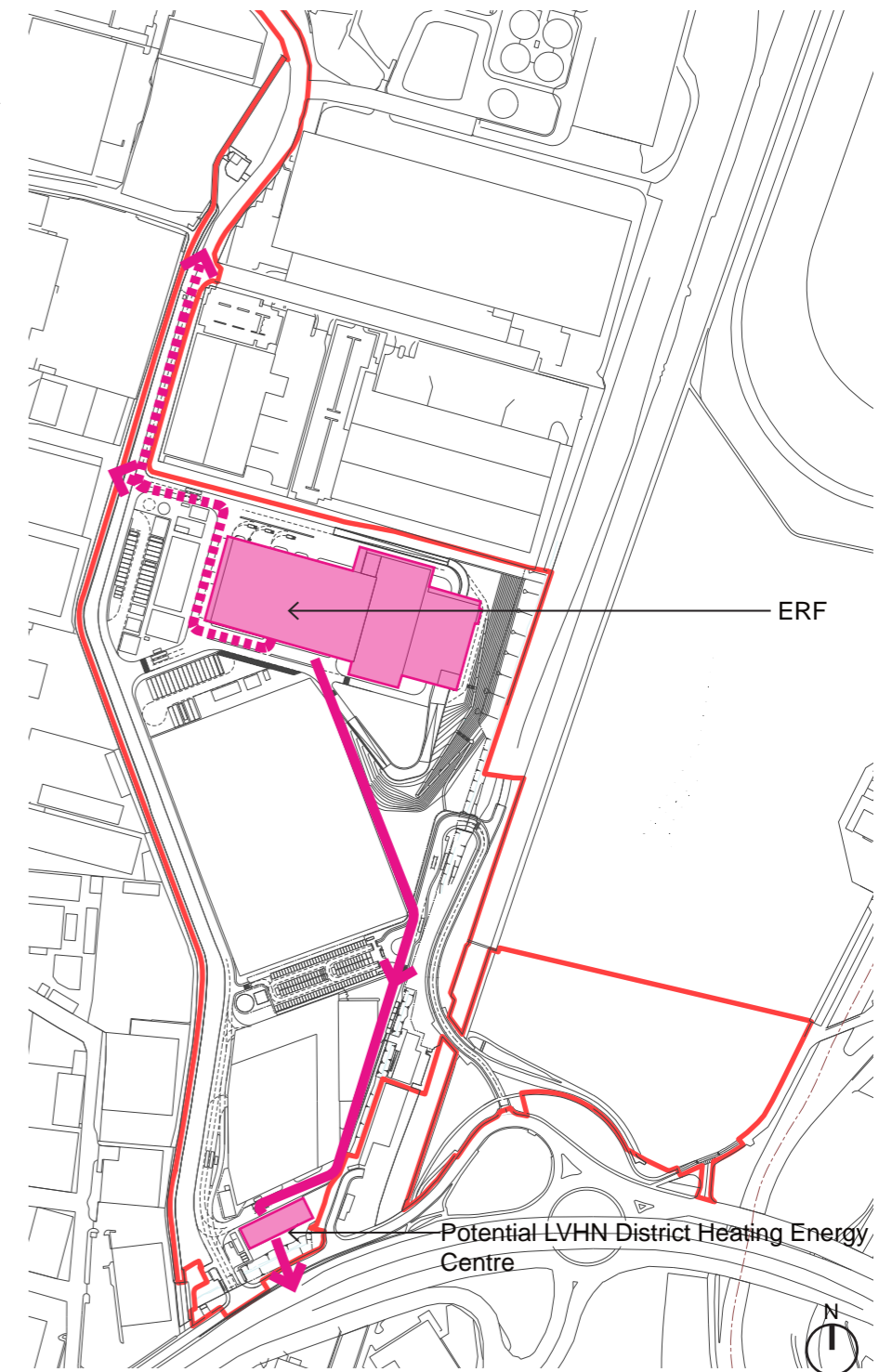


Figure 6.128: District heating pipework illustrative routing .

6.8 CARBON REDUCTION MEASURES

6.8.1 APPLYING THE ENERGY HIERARCHY

The Project's environmental drivers include applying the Energy Hierarchy to buildings in order to reduce their energy consumption. This approach is set out in more detail in the Sustainability Statement (AD05.13). The Energy Hierarchy was applied in three steps in line with GLA guidance, to identify the most effective energy strategy as illustrated in Figure 6.129:

- **Be Lean** (Use less energy)
- **Be Green** (Use energy efficient energy supplies)
- **Be Clean** (Generate renewable energy on-site)

Note that this section focuses on improvements which were sought to building energy performance and does not focus on process energy such as that in the ERF generating plant. As such the focus is on the ERF offices, EcoPark House and the RRF offices as buildings which are subject to Building Regulations Part L: Conservation of Fuel and Power.

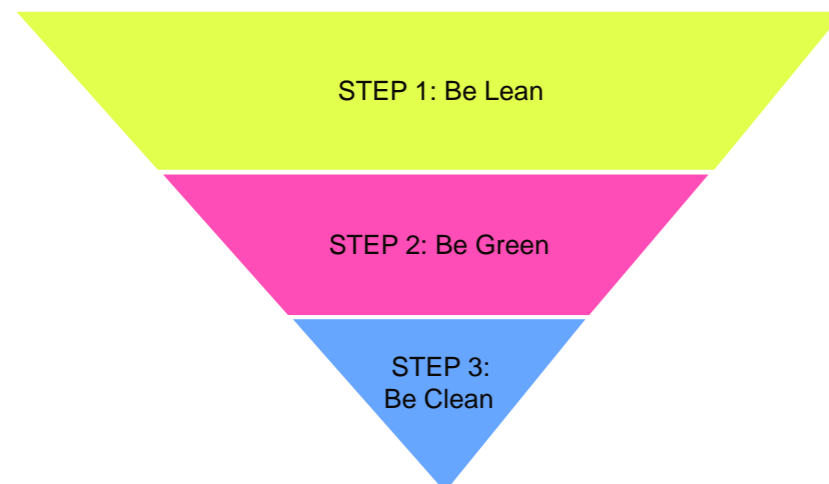


Figure 6.129: Energy Hierarchy

Be Lean

In order to *Be Lean*, the scheme has considered a series of design decisions to allow for potential reduction in energy consumption through energy efficiency measures. These potential solutions include:

- a. façade shading on EcoPark House as illustrated in Figure 6.131;
- b. the ERF offices would be located on the north side of the ERF, which would provide passive shading, minimising the amount of direct solar irradiation on the façade, allowing increased glazing levels;
- c. increased insulation levels and glazing performance for all buildings;
- d. use of thermal mass with increased exposed concrete soffits and columns where possible; and
- e. passive chilled beam systems with displacement ventilation supplied via a raised floor, as this has been proven to be a highly efficient means of providing free cooling, reducing fan power and active cooling requirements (Figure 6.130).

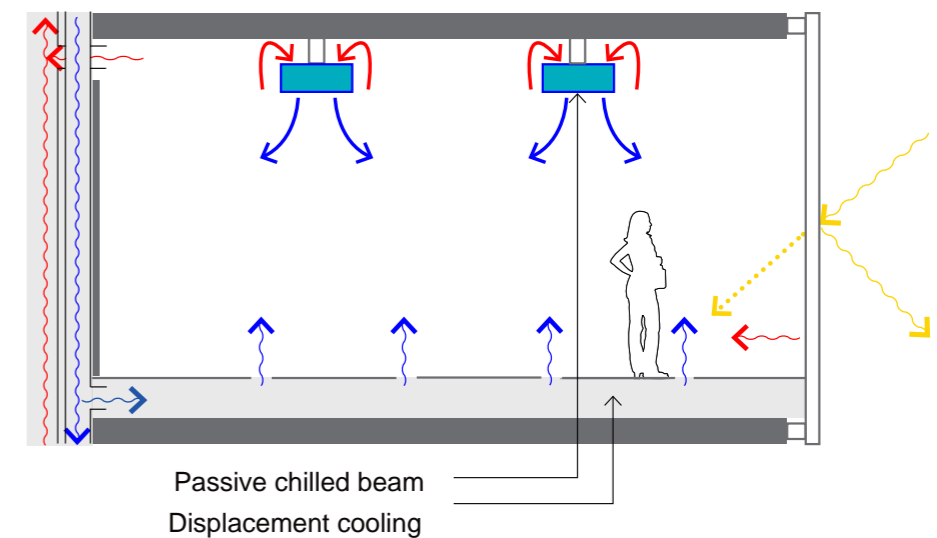


Figure 6.130: Illustrative potential passive chilled beam

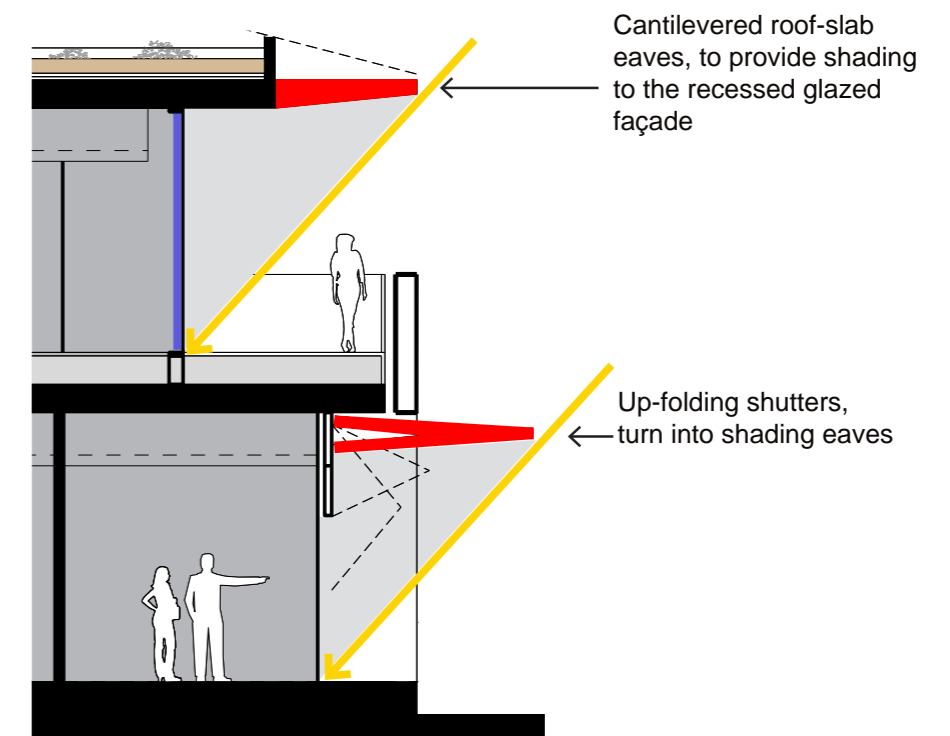


Figure 6.131: Illustrative potential EcoPark House facade shading

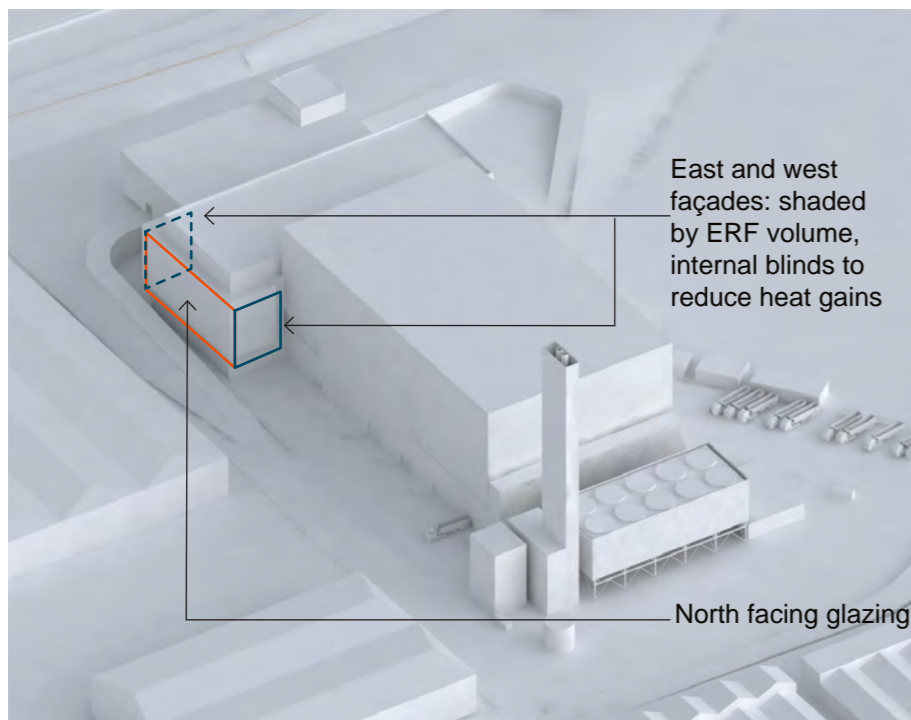


Figure 6.132: Illustrative ERF offices

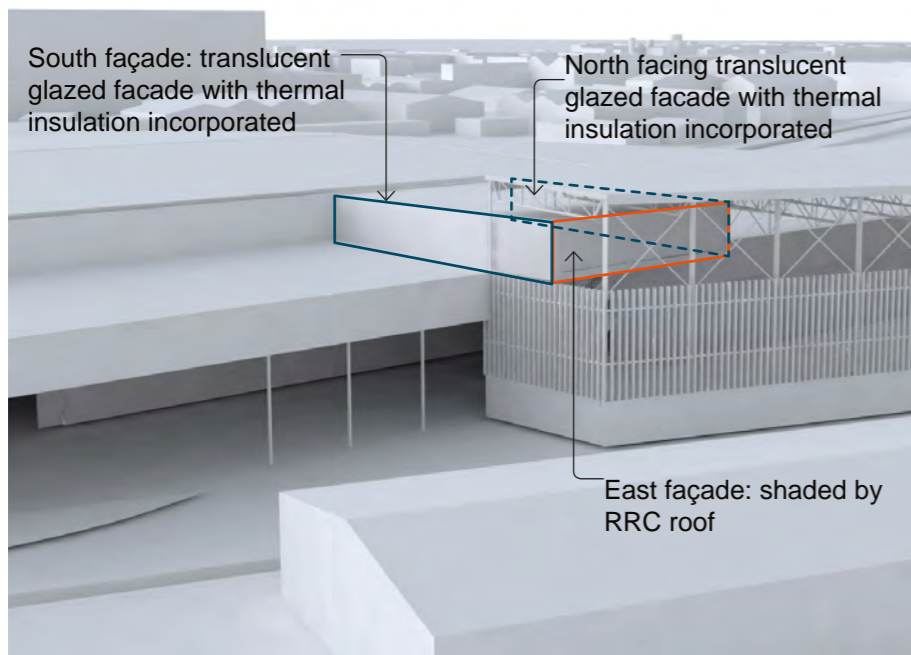


Figure 6.133: Illustrative RRF mezzanine

Be Green

In order to *Be Green*, the use of various low carbon energy supplies was considered. The following measures have been allowed for in the design:

- a. a site wide electricity connection is proposed from the ERF to on-site buildings to supply low carbon electricity directly from the ERF (i.e. a private wire arrangement);
- b. a supply of low carbon heat from the ERF heat off-take to the buildings at the Edmonton EcoPark could be investigated to deliver space heating and hot water services; and
- c. a low carbon cooling supply making use of absorption chillers supplied from the ERF heat-off take could be a potential options for the ERF offices.

Be Clean

In order to *Be Clean*, the design has safeguarded areas on the roof of the ERF and RRF for photovoltaic (PV) solar panels, which would enable buildings at the Application Site to achieve zero carbon on regulated emissions (Figure 6.135).

Through the consideration of carbon reduction measures in the design, the Project would achieve net zero carbon emissions from regulated building energy use, that is lighting, heating, cooling and ventilation energy, for the relevant buildings at the Application Site. The emissions reduction of these measures are illustrated for each step in Figure 6.134, and the building energy strategy is summarised in Figure 6.136.

Appropriate measures would be developed in the detailed design stage considering cost and feasibility of the various measures.

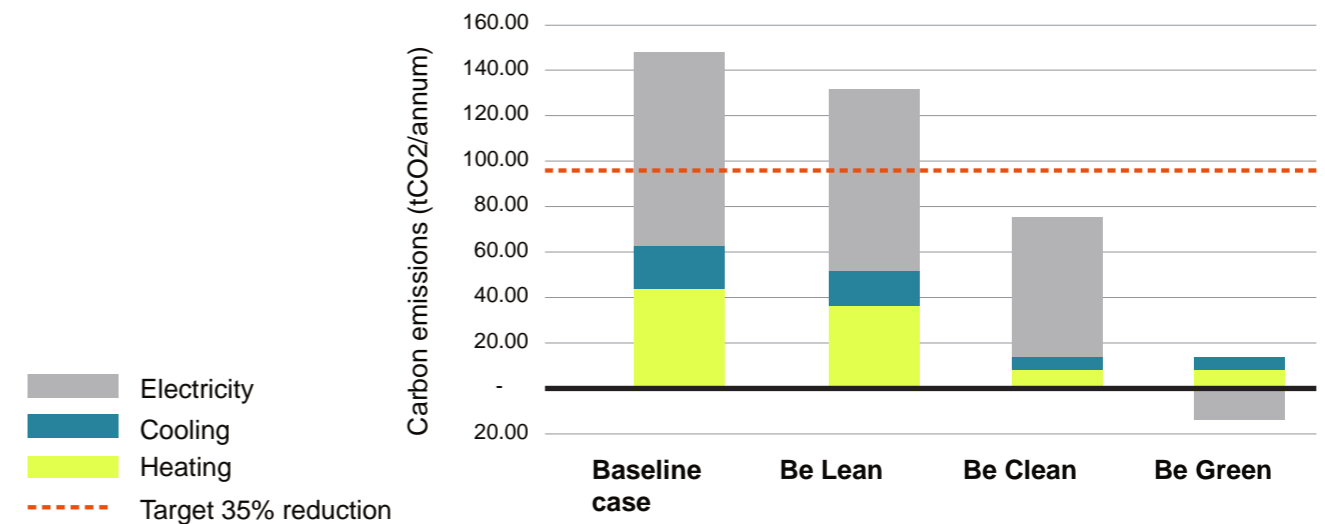


Figure 6.134: Carbon emissions reduction of measures proposed

6.8 CARBON REDUCTION MEASURES

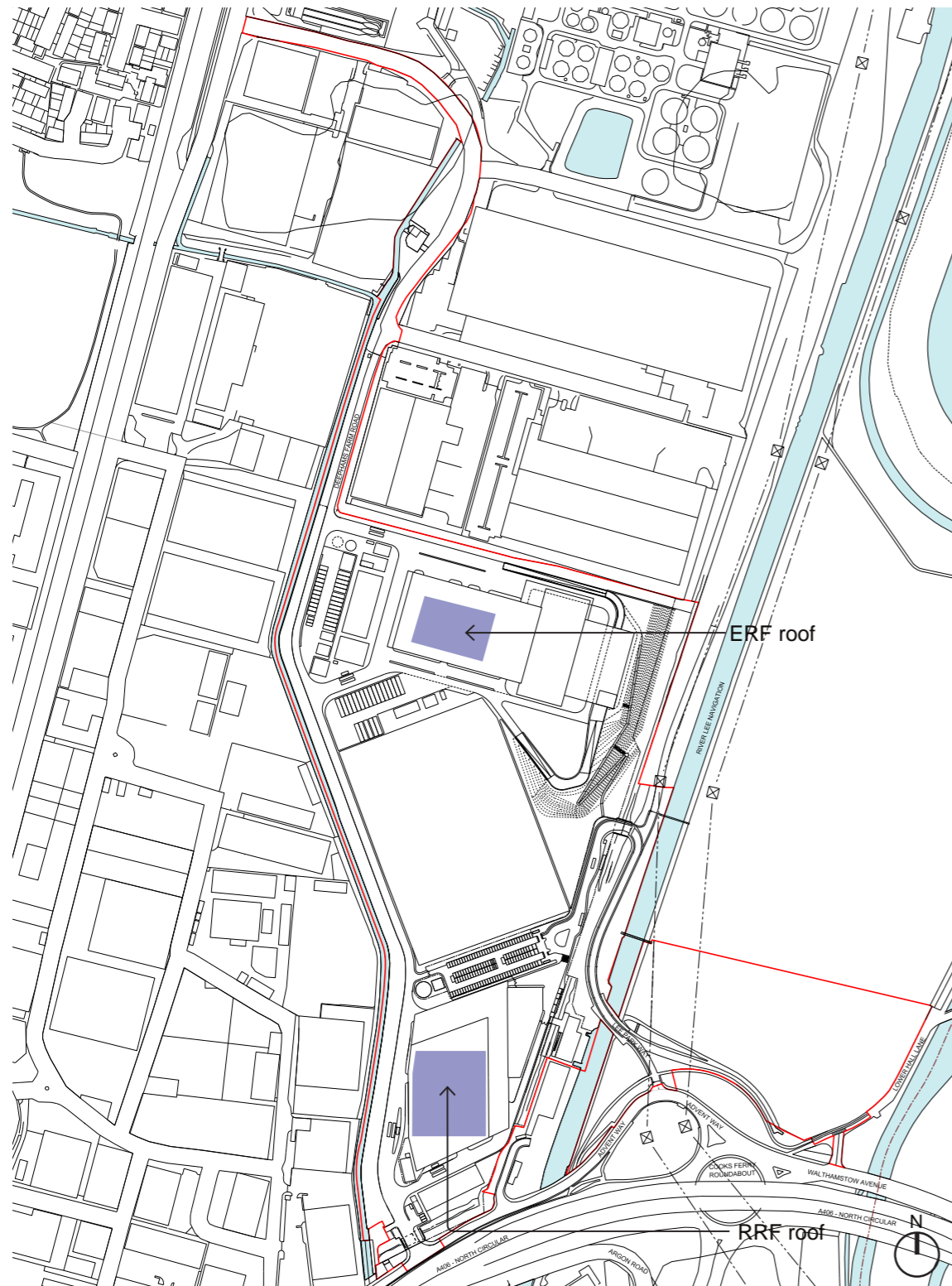


Figure 6.135: Roof areas safeguarded for the location of photovoltaic panels

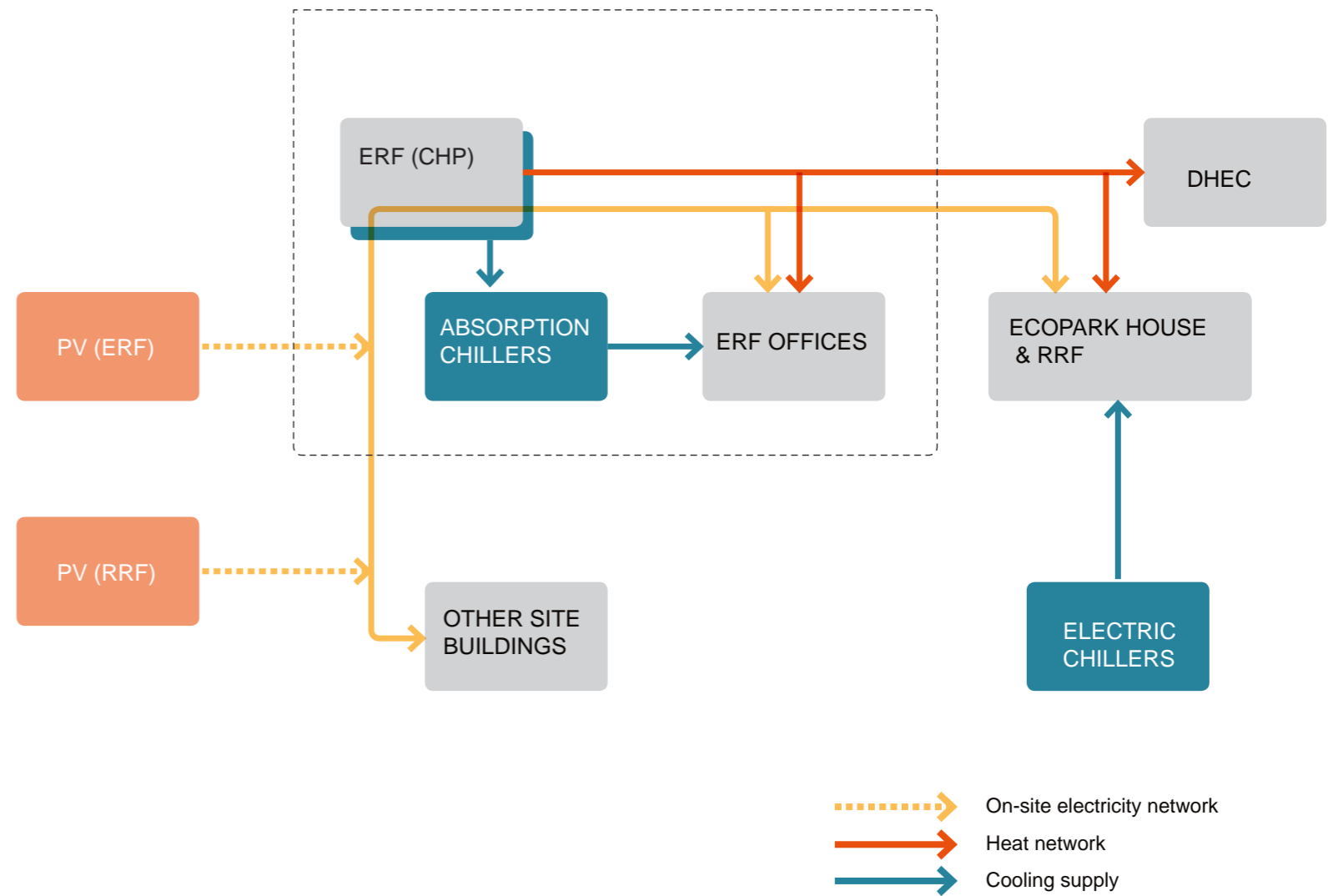


Figure 6.136: Potential building energy strategy

6.9 LIGHTING

6.9.1 OVERVIEW

The lighting strategy for the Project requires the replacement of lighting infrastructure across the Application Site to align with the new access points, circulation routes and buildings.

The lighting would provide illumination for the safe operation of the various activities proposed to be carried out in the Edmonton EcoPark, including access and wayfinding. This has been developed with consideration for potential light spill to adjoining sensitive receptors such as areas of ecological value in the LVRP.

An initial lighting design approach has been developed to allow assessment of its impact to be undertaken (see ES AD06.02). The detailed design would be taken forward on the basis of the Design Code Principles (AD02.02). Detailed design for lighting is subject to a requirement in Schedule 2 of the draft DCO (AD03.01).

Specification

Luminaires and their installation would comply with the following British Standards:

- a. BS 1853 Tubular Fluorescent Lamps for General Lighting Service;
- b. BS 4533 Luminaires;
- c. BS 5266 Emergency Lighting;
- d. BS 5489 Road lighting;
- e. BS 5649 Lighting Columns; and
- f. BS EN 60570 Electrical Supply Track Systems for Luminaires.

Lighting installations would comply with the following:

- a. CIBSE Lighting Guides and Technical Memoranda: specifically with respect to illumination levels, glare, colour rendering, ingress protection, environmental suitability, etc. for each location; and
- b. Building Regulations (Part L) regarding the use of artificial lighting for buildings, and Building Regulations Document B in respect of luminaire diffuser panels.

The ease and simplicity of maintenance would be considered as part of any selection of all luminaires. All luminaires would be of an energy efficient design (e.g LED technology). Every luminaire would be of a design that encloses the lamp and is constructed in a manner appropriate to the likely exposure to moisture, damage, or any other detrimental influence. All luminaires would be supplied and installed complete with lamps. Luminaires would be mounted in positions which would be readily and safely accessible for maintenance.

The lighting would be controlled by a combination of time switch and photo cell control to restrict the use of artificial lighting during daylight hours when sufficient illumination would be available for safe use and operation of the external areas. The ERF would be lit 24-hours a day to allow safe operation. For other areas of the Application Site such as the RRF, operational lighting would be switched off outside of operational hours.

The proposed light fittings would vary across the Application Site to accommodate the needs of their particular location on-site. Light fittings would be mounted on columns no higher than 8m. In some cases lighting would be mounted on buildings spaced at distances to provide as even amount of illumination as possible. Smaller light fittings would be mounted at 3m high on buildings and columns around pathways.

6.9 LIGHTING

6.9.2 LIGHTING ZONES

The approach to different lighting zones reflect their functional requirements as well as the level of lighting required to supplement existing private and public lighting around the Application Site. Lighting approaches respond to the following functions:

Operation

Areas around the ERF and RRF where sufficient illumination would be required to external areas for the safe operation of facilities at the Application Site. These areas would be focussed on the perimeter of the ERF and RRF and the operational road network in the Application Site. For example, light fittings under RRF/RRC open canopies would increase the illumination to these specific areas where waste operation would need to take place and be well lit.

Public Access

This includes pathways and the parking area that would be accessible to the public. Lighting in these areas would be suitable to provide a safe and secure environment for staff and visiting members of the public.

Dark Corridors

The lighting design would be modified to take into account the need for some areas of ecological value to be darker such as the watercourses at the Application Site. The need for a sensitive approach to lighting would influence lighting levels of some operational and public areas. In accordance with the Bat Conservation Trust guidelines narrow spectrum lights that emit minimal ultra-violet light and peak higher than 550nm (yellow, orange and red wavelengths) would be used where possible; flat cut-off lanterns or accessories would be used; the height of lighting columns would be considered to reduce spillage; and light levels would be as low as guidelines permit and would be turned off when not required. Lamp tiles would also be set at zero degrees – i.e. horizontally rather than slightly inclined upwards, to prevent light spillage.

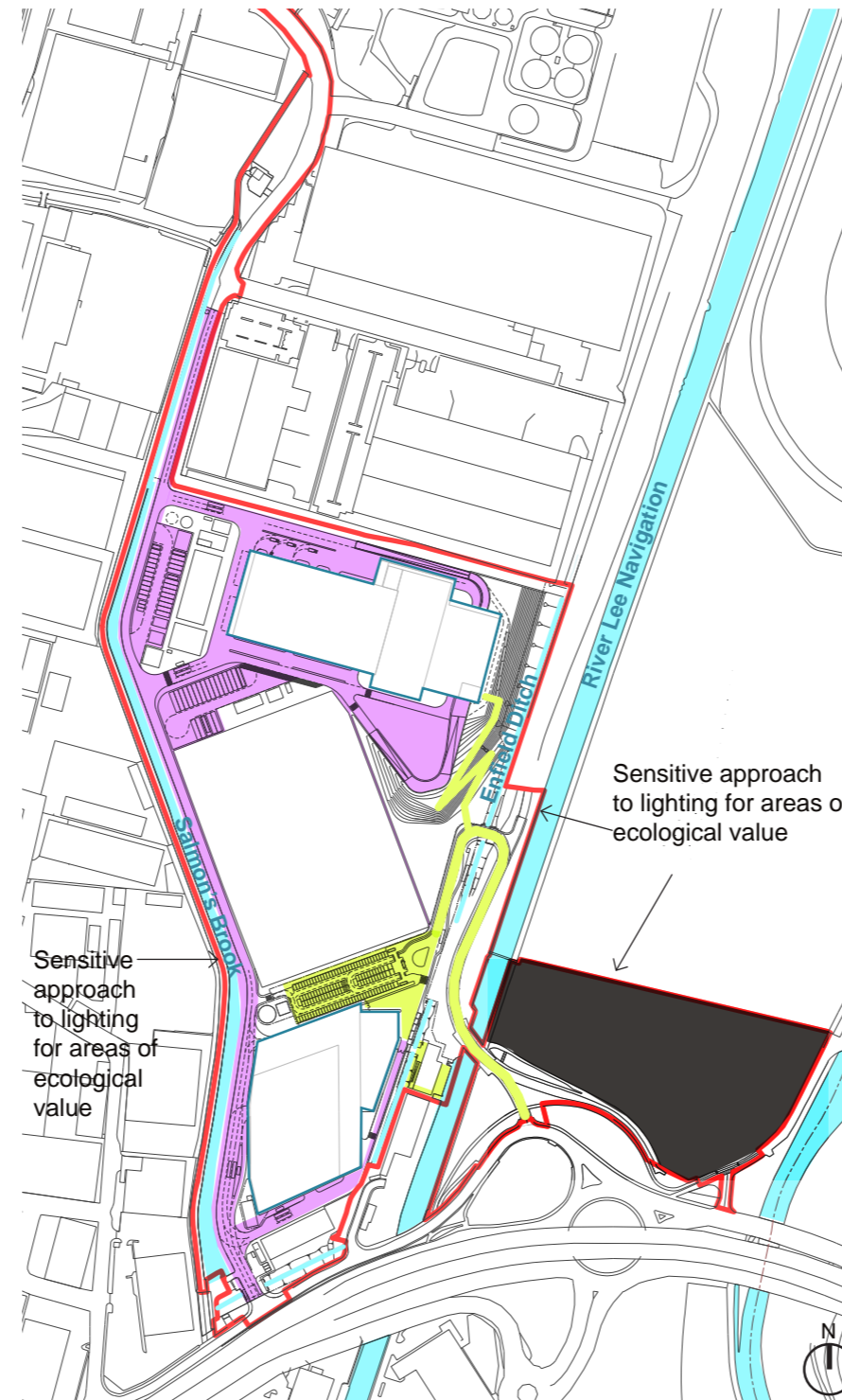
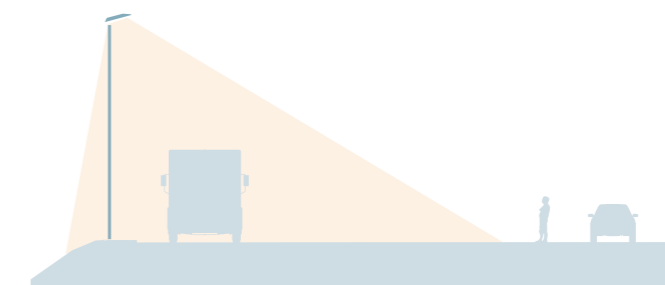
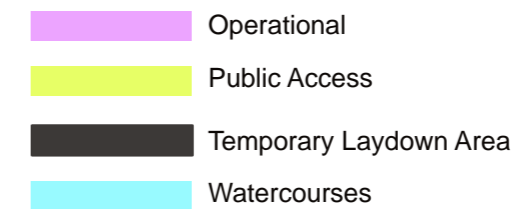
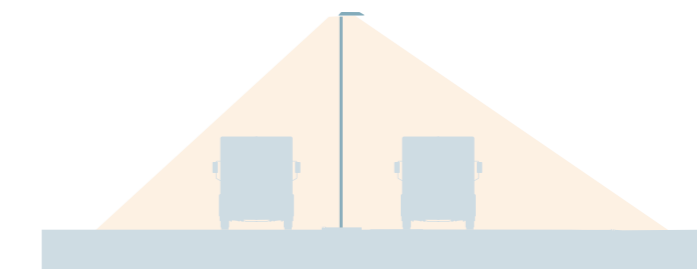


Figure 6.137: Sections of various lighting conditions



Narrow-ranged operational 8m high lighting on the perimeter to control light spillage



Wide-ranged 8m high operational lighting within Application Site



Narrow-ranged 3m high lighting for public routes to control light spillage



Down-lighting mounted to the underside of canopy

Figure 6.138: Lighting character zones

Figure 6.139 shows an illustrative lux level contour plan of the Application Site.

Aviation Obstruction Lighting

Aviation obstruction lighting would be reviewed on the basis of Article 219 of the UK Air Navigation Order. Notwithstanding that the proposed stack is under the 150m height requirement of the order, its freestanding nature may lead to navigational hazard. The UK Air Navigation Order seeks that medium intensity steady red lights are positioned as close as possible to the top of the obstacle and at intermediate levels spaced so far as practicable equally between the top lights and ground level with an interval of not more than 52 metres. At each level on the obstacle where lights are required to be fitted, sufficient lights must be fitted and arranged so as to show when displayed in all directions.

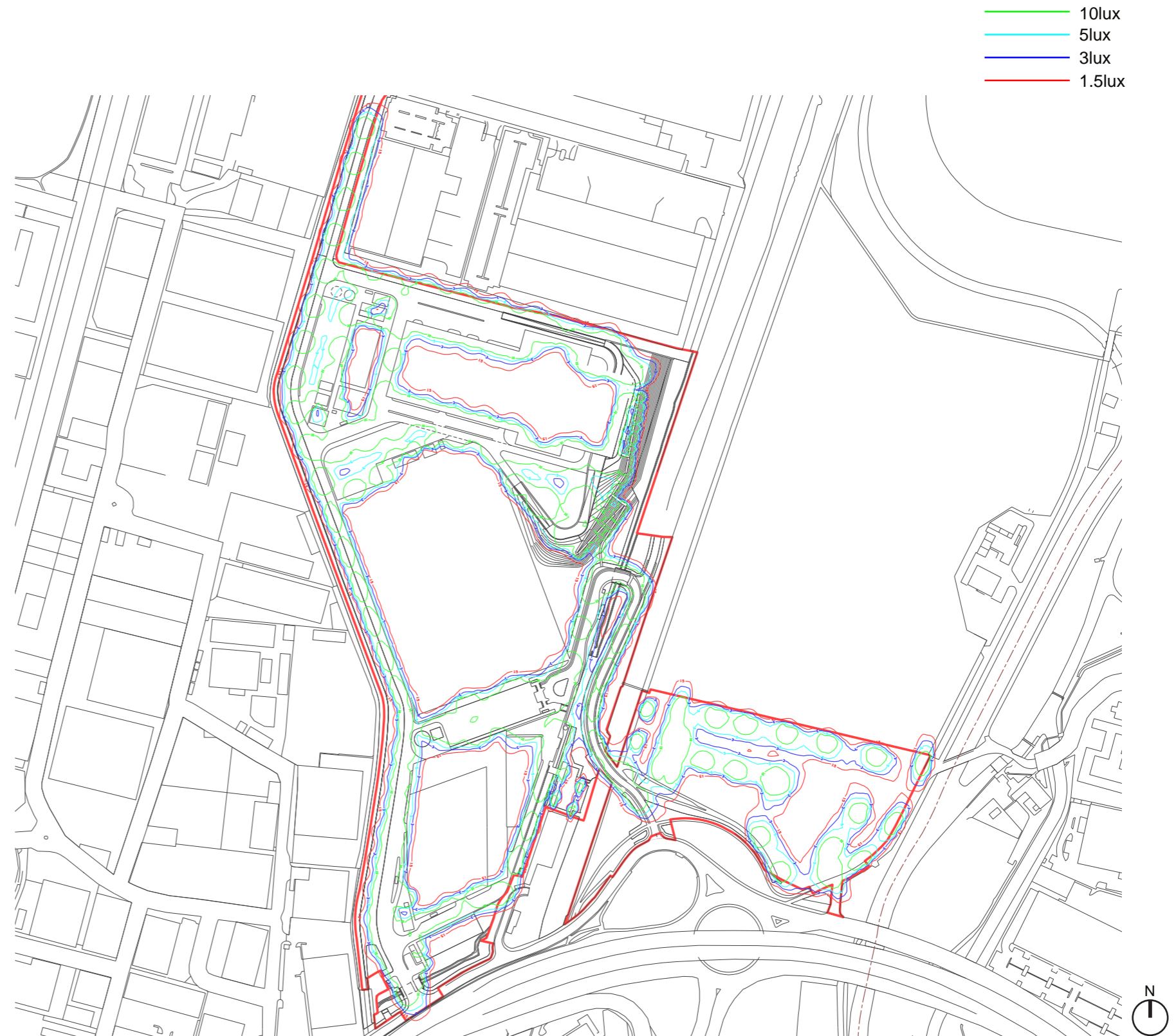


Figure 6.139: Illustrative lighting lux layout

6.10 TEMPORARY LAYDOWN AREA

6.10.1 LAYOUT AND FUNCTION

The redevelopment of the Edmonton EcoPark, while maintaining operations of the existing EfW facility, results in limited capacity for construction support activities on-site. These activities are proposed to be accommodated on a Temporary Laydown Area to the east of the Edmonton EcoPark. The Temporary Laydown Area would comprise site hoarding, open parking and storage areas (with space for fabrication works), temporary offices, welfare facilities and associated utilities and water attenuation systems.

Its primary access would be directly from Advent Way where an existing entrance is located and currently used by the Camden Plant Ltd site. A secondary access point would be provided to the Lee Park Way enabling access to the Edmonton EcoPark for smaller vehicles and construction staff movement by foot or shuttle vehicles.

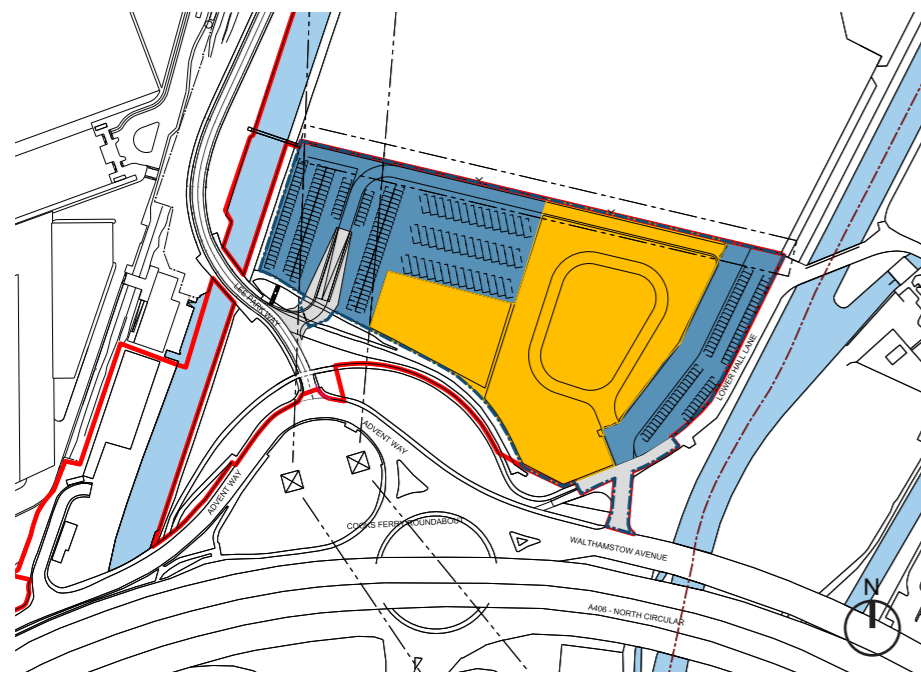
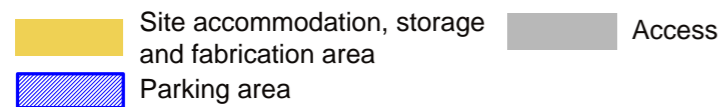


Figure 6.140: Illustrative Temporary Laydown Area layout

6.10.2 UTILITIES

Utilities required in the Temporary Laydown Area would be:

- potable water for human consumption and industrial use in the storage area;
- electricity to serve the storage area, temporary accommodation and external lighting;
- foul drainage and surface drainage; and
- telecoms to provide telephone and internet to the accommodation and storage area.

Further details of the utility proposals are set out in the Utilities Strategy (AD05.10).

A key consideration to take into account for existing utilities is the overhead power lines clearance required (See Fig 6.141). A complete operational and safety procedure for all operations in the Temporary Laydown Area would be in place to ensure that the clearance requirements are fulfilled.

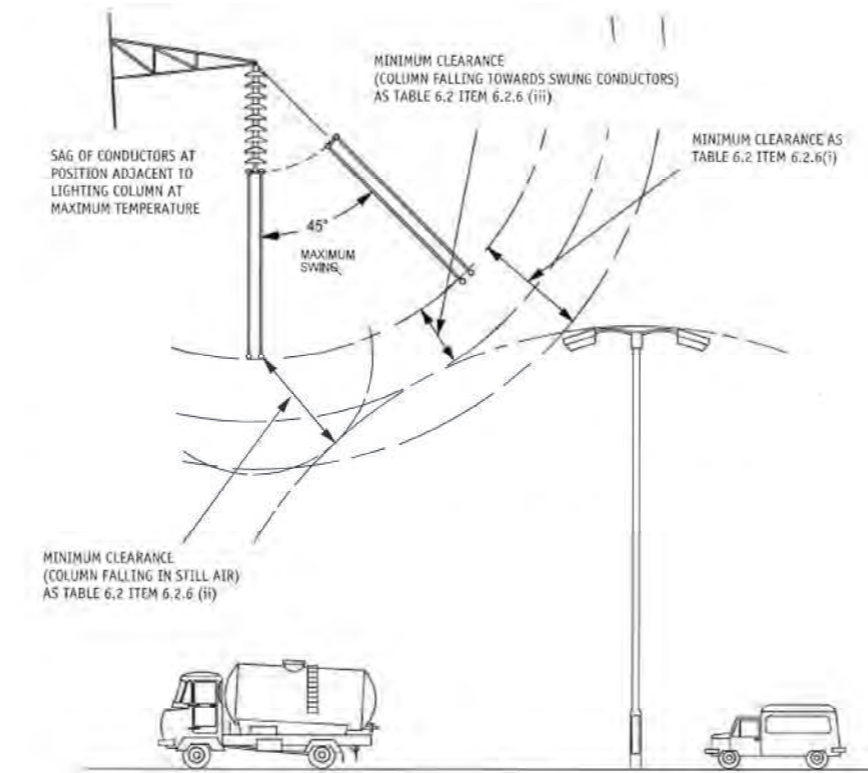


Figure 6.141: National Grid pylon clearance guidance



Figure 6.142: Photograph of proposed Temporary Laydown Area

6.10.3 LIGHTING

Lighting on columns would be provided to ensure illumination during construction hours. Lighting at night time would be minimal for security purposes. The design of the lighting would follow the dark corridor principles set out and thus seek to minimise spill to adjoining areas.

6.10.4 FLOOD RISK AND SURFACE WATER

The proposed Temporary Laydown Area is located entirely within Flood Zone 2 at medium risk of flooding, with the exception of a narrow strip of land adjacent to the eastern boundary which is in Flood Zone 3 with high risk of flooding.

Temporary accommodation and storage of construction material would be located outside the areas at risk from a 1 in 100 year flood event plus climate change. Land within those extents would be used for parking, landscape and access during construction.

To mitigate for flood risk to the Temporary Laydown Area it would be evacuated when a Flood Warning is received from the EA for the Lower River Lee at Enfield. The system for receiving flood warnings and evacuating the Temporary Laydown Area would be in place before the area is in use.

During the construction phases attenuation would be required for the Temporary Laydown Area in order to limit the discharge flows. A Sustainable Urban Drainage System (SuDs) strategy would be developed for the Temporary Laydown Area to attenuate flow associated with the introduction of hard surfaces on the Temporary Laydown Area for the Project. The Temporary Laydown Area would be restored to soft landscaping after construction.

6.10.5 LANDSCAPE

Zone 7 covers the Temporary Laydown Area which would be used temporarily during the construction stages of the Project including for parking and site offices. This area would be reinstated in a way that allows opportunities for its potential future use. The area would be restored to its current open scrub nature with enhancement to include open an appropriate mix of shrubs and wildflower meadow mix to replicate the existing biodiversity of the Temporary Laydown Area.

The edges of the new open space would be planted with native and ornamental trees. The design of the Project allows for a formal row of ornamental trees that would create an avenue effect along the existing pedestrian route to the south, while informally grouped native trees along Lee Park Way and the River Lee Navigation could reflect the natural character of the LVRP.

6.11 PROJECT STAGES

6.11.1 PROJECT STAGES

Site preparation and construction would be phased over a number of years and it is expected that the earliest construction would commence in 2019/20, although this may be later. Construction would be implemented in a staged manner to ensure that essential waste management operations remain functioning throughout. This is especially relevant for the existing EfW facility and associated support facilities.

This section sets out the key development stages of the Project as follows:

- a. Stage 1 – this phase is split into four sub-phases:
 - Stage 1a – initial site preparation and enabling works;
 - Stage 1b – construction of RRF, EcoPark House and commence use of Temporary Laydown Area;
 - Stage 1c – commence operation of RRF and EcoPark House and demolition/clearance of northern area of the Edmonton EcoPark;
 - Stage 1d – construction of ERF;
- b. Stage 2: commissioning of ERF alongside operation of EfW facility, i.e. transition period;
- c. Stage 3: continue operation of ERF, RRF and EcoPark House, decommission and demolition of EfW facility; and
- d. Stage 4: full operation of ERF, RRF and EcoPark House, i.e. final operational situation.

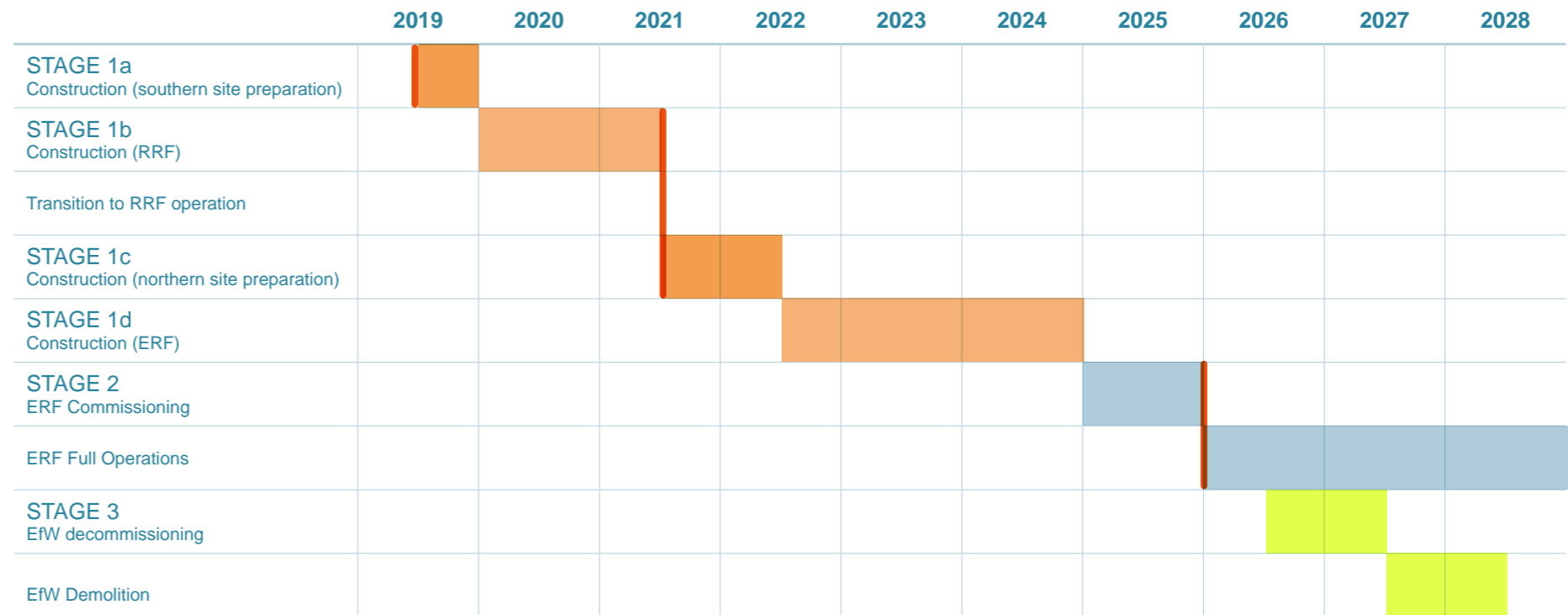


Figure 6.143: Indicative timescales for Project stages

6.11.2 STAGE 1A

Stage 1a (Figure 6.144) involves a series of initial site preparation and enabling works required for the Project. The works would include:

- a. enabling works along Deephams Farm Road to create the Deephams Farm Road access;
- b. demolition of clinical waste building and maintenance workshop building;
- c. infill of pond and clearance of landscaped area to form temporary storage and parking area;
- d. layout of replacement fleet parking areas and temporary support buildings on the maintenance workshop site;
- e. establish hoarded demolition work sites with safe pedestrian and vehicular access to the existing EfW facility main entrance and staff car parks. Access to the existing EfW facility would continue to be from the existing site access;
- f. relocate Edmonton Sea Cadets to existing EfW facility meeting rooms with safe pedestrian and vehicles access via the existing site access at Advent Way to the main entrance and staff car parks, store Edmonton Sea Cadets equipment in a container located at the front of the existing EfW facility and relocate their boats to an alternative facility;
- g. diversion of utilities and services affected by demolition and clearance works including diversion of the sewer trunk main owned by TWUL which runs under the proposed RRF;
- h. demolition and clearance of EcoPark House and RRF construction zones;
- i. creation of new Lee Park Way access and temporary diversion of footpaths and cycleways;
- j. establish Temporary Laydown Area to the north of Advent Way and east of the River Lee Navigation to provide for site offices, storage of construction materials, plant and machinery, fabrication/sub-assembly, and construction staff/contractor vehicle parking.

Temporary diversion of footpaths and cycleways at Temporary Laydown Area access points. The existing EfW facility would continue operate at current capacity. The existing IBA recycling facility would continue to process ash from the EfW facility. The existing BWRf, FPP and IVC would continue to operate in this period.

Operational vehicles would continue to access the Edmonton EcoPark via the existing access at Advent Way. Traffic associated with the Phase 1a demolition and enabling works would arrive at the Edmonton EcoPark via the existing access on Advent Way.

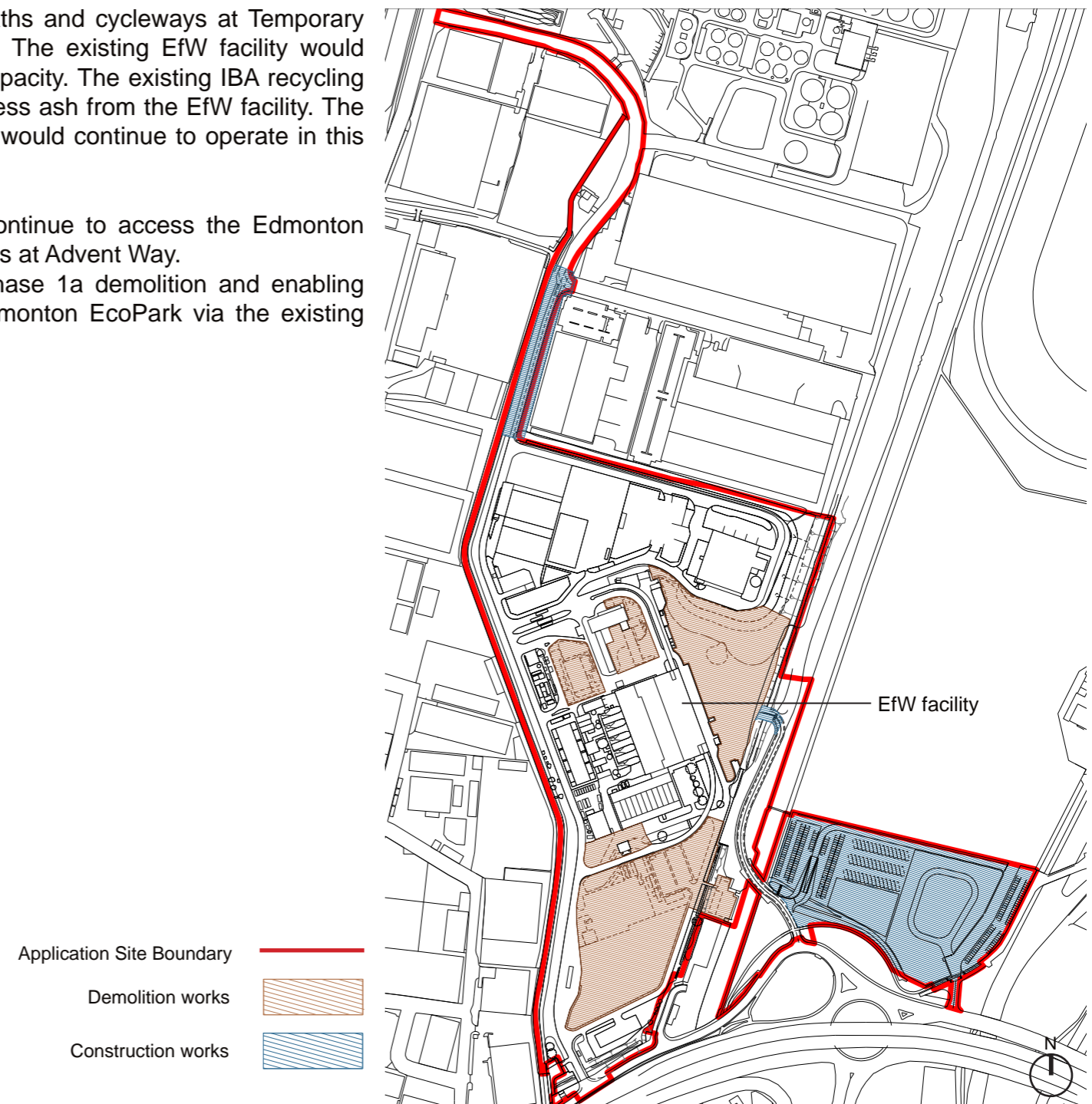


Figure 6.144: Phase 1a

6.11 PROJECT STAGES

6.11.3 STAGE 1B

During Stage 1b (Figure 6.145), the RRF and EcoPark House buildings would be constructed in the southern part of the Edmonton EcoPark. It would be necessary to construct these buildings prior to the construction of the proposed ERF and demolition of the operations north of the existing EfW facility. The works required during this phase of construction would include:

- commence use of Temporary Laydown Area;
- relocate LWL vehicle fleet to the north of existing EfW facility;
- construct EcoPark House;
- construct RRF and its weighbridges;
- erection of temporary ash storage building;
- layout of staff and visitor parking area immediately adjacent to EcoPark House;
- staff and visitor vehicles to commence use of the new Lee Park Way access;
- construction of the attenuation tank and associated drainage of the RRF sub-catchment; and
- EfW facility exit ramp arrangements aligned with RRF construction area and required RRF operational vehicles routes.

The existing EfW facility would continue to operate at current capacity. The Edmonton Sea Cadets would continue to occupy space in the existing EfW facility. The IBA recycling facility would continue to process ash from the existing EfW facility.

The existing BWRf, FPP and IVC would continue to operate in this period, until the RRF is completed (see Stage 1c).

Operational vehicles would continue to access the Edmonton EcoPark via the existing site access from Advent Way. The new Lee Park Way access would become available and be used by some staff and Edmonton Sea Cadets traffic.

Traffic associated with the construction of the RRF and EcoPark House would arrive at the Edmonton EcoPark via the existing access on Advent Way. Some traffic may arrive at the Temporary Laydown Area, travelling from the Temporary Laydown Area to the Edmonton EcoPark via Walthamstow Avenue and the existing access. Some light vehicles including construction staff shuttle buses may travel to the Edmonton EcoPark via the new Lee Park Way access.

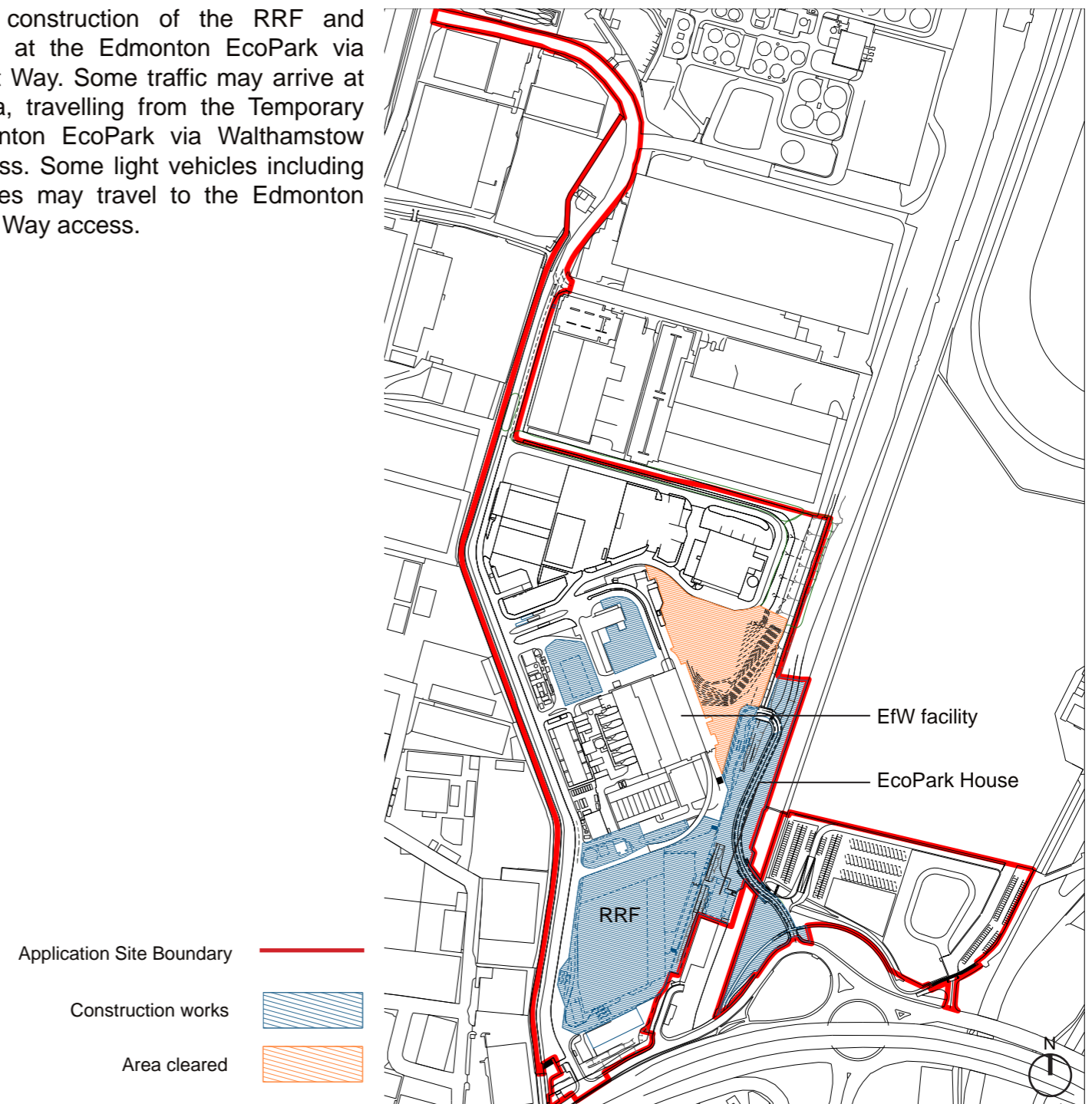


Figure 6.145: Stage 1b

6.11.4 STAGE 1C

During this stage of construction (Figure 6.146) the facilities to the north of the existing EfW facility would be demolished to make way for the proposed ERF. The works required involve:

- a. completion of RRF and transfer of BWRf and FPP operations;
- b. completion of EcoPark House and occupation by the Edmonton Sea Cadets;
- c. relocation of EcoPark stores;
- d. disconnection of obsolete services and utilities within demolition zones;
- e. demolition and clearance of existing FPP area;
- f. demolition and clearance of existing BWRf area;
- g. demolition and clearance of existing IBA area; and
- h. demolition and clearance of existing IVC facility – composting activities to be relocated off-site and bulking facilities provided within the RRF to enable transport to third party treatment sites.

The existing EfW facility would continue to operate at current capacity, with a temporary ash storage building provided to replace the existing IBA area and allow the transfer of ash off-site for recycling.

The new RFPF operations would commence within the RRF, with capacity to treat around 390,000 tonnes per annum (tpa). The RRC element of the RRF building would be open to visiting members of the public and small businesses with access via the new Lee Park Way access. On completion of EcoPark House this would be available for community and education activities and the Edmonton Sea Cadets

Operational vehicles would continue to access the Edmonton EcoPark via the existing access on Advent Way to serve both the existing EfW facility and proposed RRF. Members of the public and small businesses visiting the RRC element of the RRF and EcoPark House would access the Edmonton EcoPark via the new Lee Park Way access. Staff and Sea Cadets would also utilise both the new Lee Park Way access and existing access on Advent Way.

Traffic associated with the northern site clearance would use the new Deephams Farm Road access.

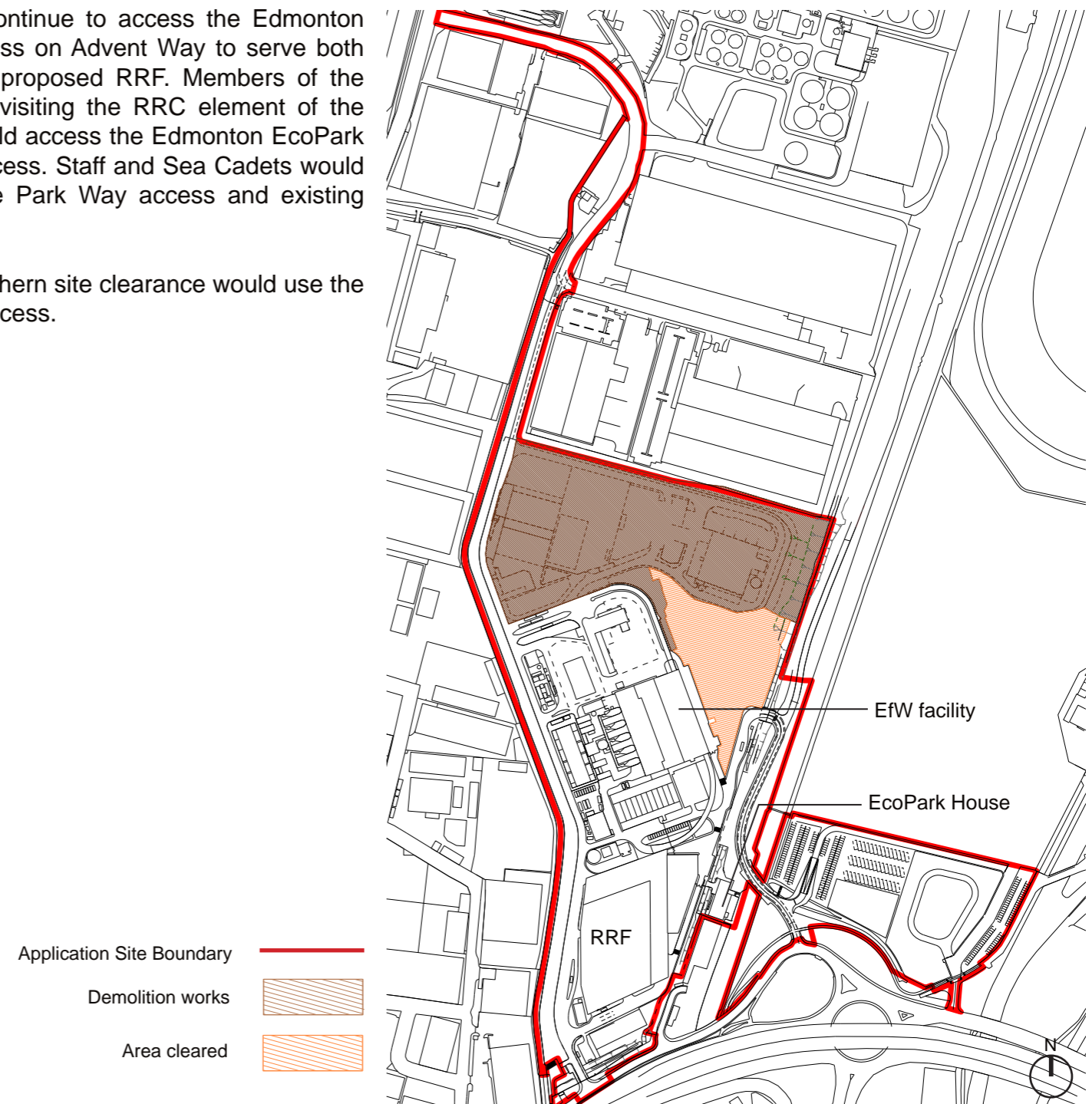


Figure 6.146: Stage 1c

6.11 PROJECT STAGES

6.11.5 STAGE 1D

During Stage 1d (Figure 6.147), the main build for the proposed ERF would occur within a defined work zone at the northern area of the Edmonton EcoPark. The works involve:

- construction of ERF including piling and excavation works, civil and structural works, establishment of new utilities connections;
- construction of the attenuation tank and associated drainage of the ERF sub-catchment;
- if water cooled condensers are used erection of a new pumping station and associated pipework to provide raw water from Deephams Farm Sewage Treatment Works outfall; and
- partial landscaping.

The majority of heavy goods vehicles associated with the construction of the proposed ERF would arrive at the Edmonton EcoPark via the Deephams Farm Road access. Vehicle movements associated with the delivery of concrete would be undertaken directly to the Edmonton EcoPark while approximately 50 per cent of all other construction vehicle movements would be to the Temporary Laydown Area, with onward movement to the Edmonton EcoPark when required. The majority of these vehicles would travel via the A406 North Circular Road and A1055 Meridian Way to the Deephams Farm Road access. However, any abnormal loads may travel between the Temporary Laydown Area and the Edmonton EcoPark via the existing access. This would be undertaken at a time that minimises any conflict with Edmonton EcoPark operational vehicles.

The existing EfW facility would continue to operate at current capacity and the proposed RRF and EcoPark House would be operational.

Operational vehicles would continue to access the Edmonton EcoPark via the existing access on Advent Way to serve both the existing EfW facility and RRF. Members of the public and local businesses visiting the RRC element of the RRF and EcoPark House along with operational site staff and Edmonton Sea Cadets would access the Edmonton EcoPark via the new Lee Park Way access.

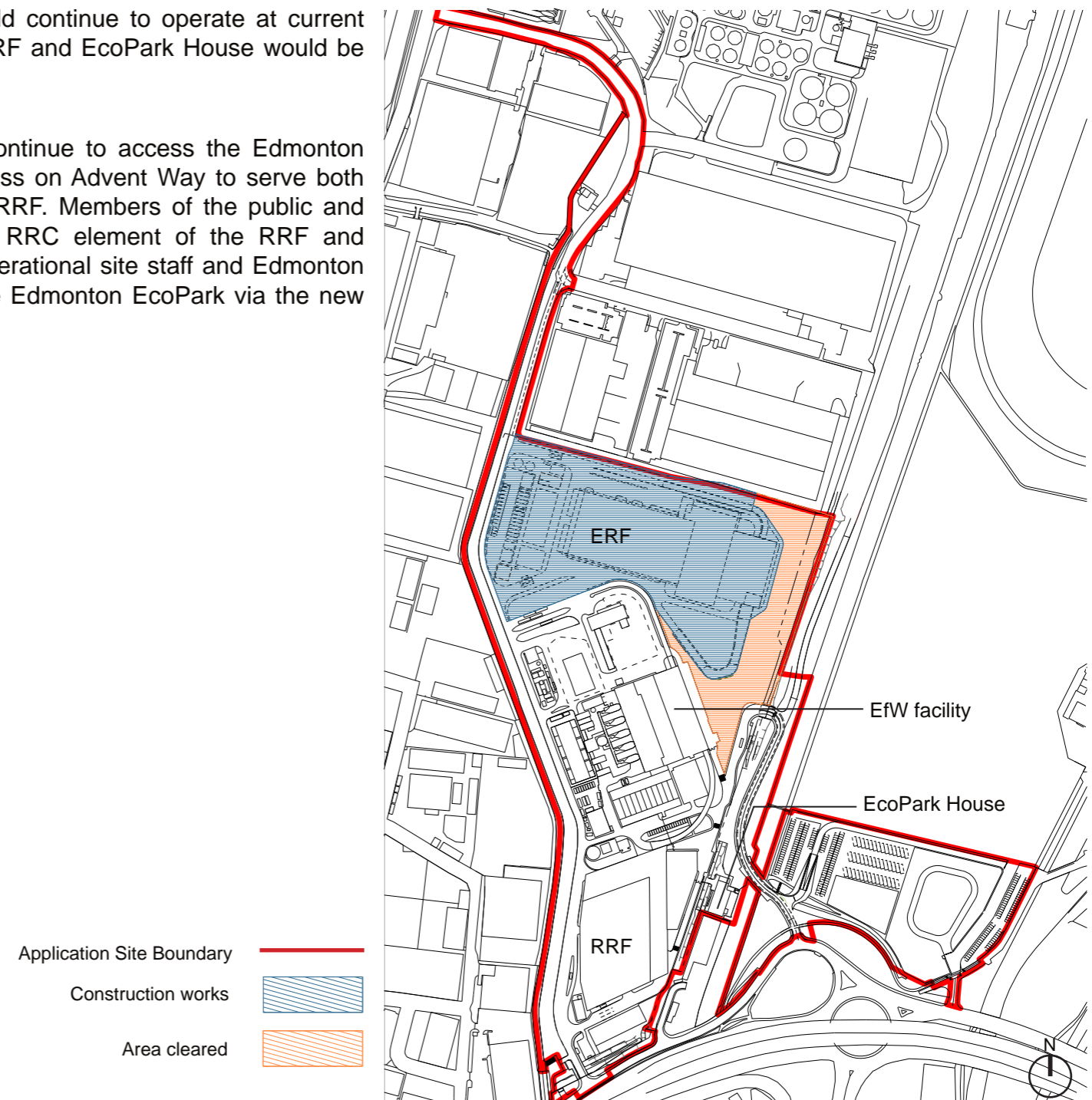


Figure 6.147: Stage 1d

6.11.6 STAGE 2

This stage (Figure 6.148) marks the completion of the proposed ERF, commission of the ERF and start of operations. The existing EfW facility would then be ready for decommissioning and demolition. The works required involve:

- commissioning of proposed ERF;
- installation of ERF weighbridges;
- relocation of operations contractors compound from adjacent to the existing EfW facility to adjacent to ERF to north;
- relocation of operational stores adjacent to the ERF;
- relocation of operational fleet depot to adjacent to ERF; and
- completion of landscaping works that are not linked to or affected by the EfW facility demolition.

The commissioning phase of the proposed ERF is estimated to take between six and twelve months. The commissioning phase is necessary in order to test all of the equipment and processes before the proposed ERF is fully operational. During this phase both the existing EfW facility and the proposed ERF would be operational as waste inputs are gradually transferred from the existing EfW facility to the proposed ERF.

Relocation of support facilities and landscaping would take place during the ERF commissioning phase with use of the Deephams Farm Road access remaining in place for operations contractor use alongside staff shuttle buses from the Lee Park Way as required.

The existing EfW facility would continue operation at a reduced capacity as incoming waste is transferred to the proposed ERF to allow its commissioning. The proposed ERF would increase the proportion of the waste that it takes as its commissioning progresses and both treatment lines are brought online.

The proposed RRF and EcoPark House would be operational. Operational vehicles would continue to access the Edmonton EcoPark via Advent Way as existing to serve both the existing EfW facility and proposed ERF and RRF. Some operational vehicles travelling to the ERF would use Deephams Farm Road access. Members of the public and local businesses visiting the RRC element of the RRF would access the Edmonton EcoPark via the new Lee Park Way access.

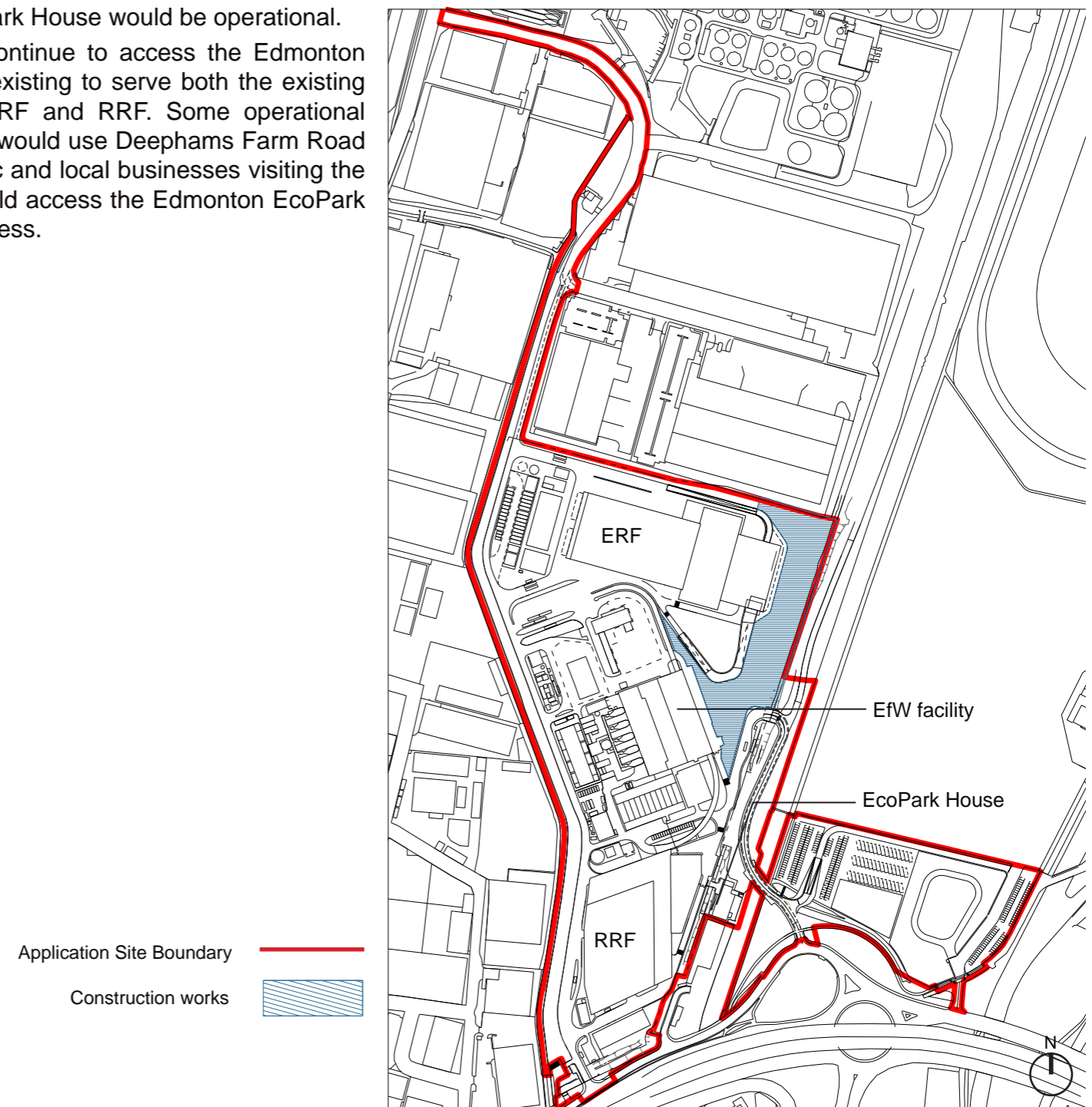


Figure 6.148: Stage 2

6.11 PROJECT STAGES

6.11.7 STAGE 3

Decommissioning, stripping out and demolition of the existing EfW facility would commence after the proposed ERF is fully commissioned and tests including the reliability period have been successfully completed (Figure 6.149). The works required involve:

- hoard demolition work zone;
- clearance of northern half of existing EfW facility site – once cleared the northern area of the EfW facility site would be used as a laydown for demolition equipment which is required before the demolition of the main EfW facility building can proceed;
- completion of fleet parking and facilities area;
- construct widened southern entrance and new security gatehouse and temporary diversion of footpath;
- demolition and decommissioning of water pumping station;
- demolish main EfW facility building;
- excavate bunker and infill with suitable material;
- level site and make good;
- completion of Edmonton EcoPark landscaping works;
- complete staff car parks and site attenuation tanks on removal of EfW facility exit ramp; and
- restore Temporary Laydown Area.

The proposed ERF would operate at the capacity required with each process line capable of 350,000 tpa with a total capacity of the facility at 700,000 tpa. The proposed RRF and EcoPark House would also be operational.

Operational vehicles would continue to access the Edmonton EcoPark via the existing access on Advent Way as existing to serve both the ERF and RRF. Members of the public and local businesses visiting the RRC element of the RRF, EcoPark House and staff car park would access the Edmonton EcoPark via the new Lee Park Way access.

Traffic associated with the decommissioning and demolition of the existing EfW facility would travel to and from the Edmonton EcoPark via the existing site access to minimise any conflicts with the operational ERF. Some vehicles associated with the removal of materials may be marshalled at the Temporary Laydown Area, waiting there until required on the Edmonton EcoPark. The new Deephams Farm Road access may also be used, if necessary.

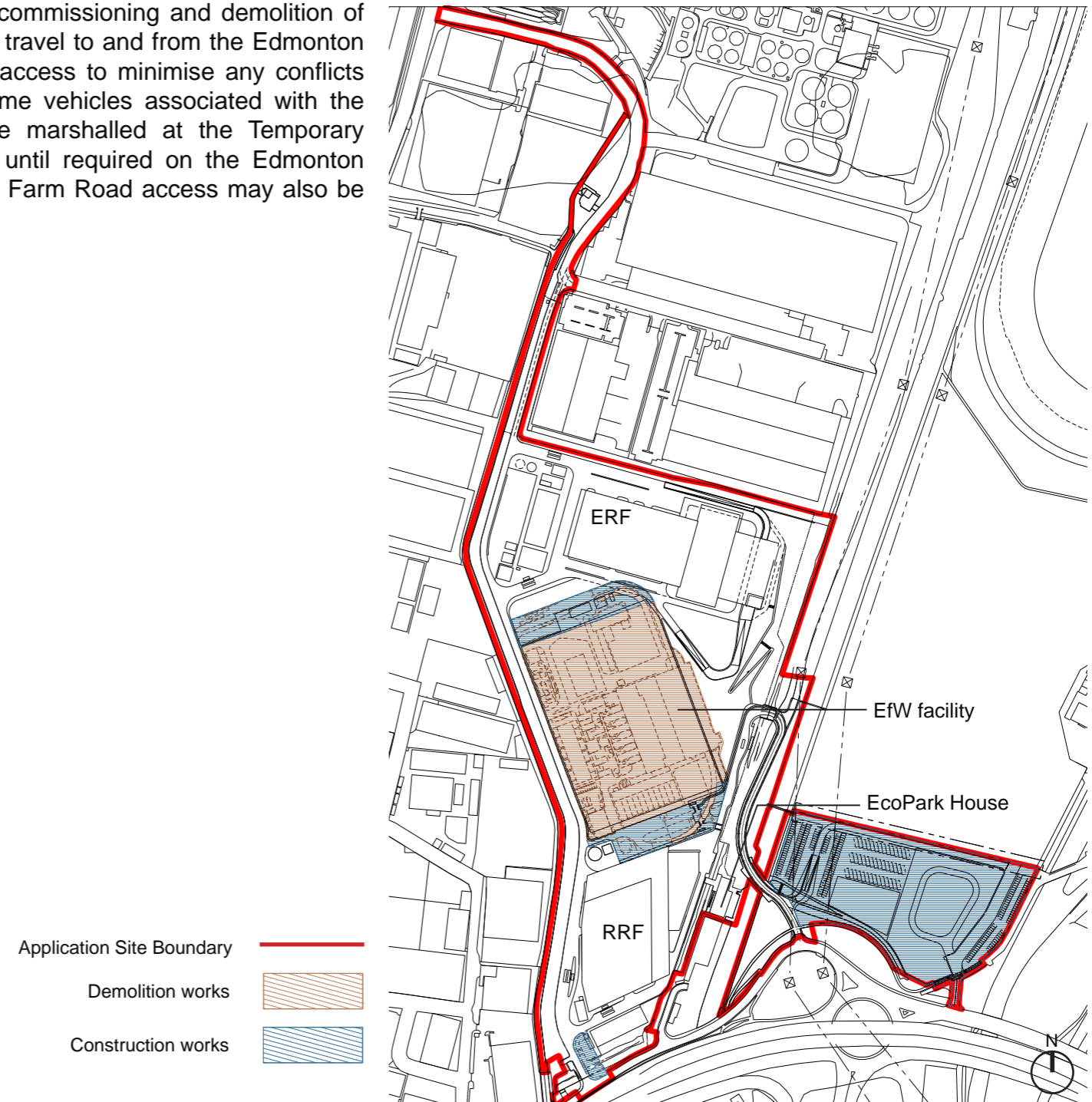


Figure 6.149: Stage 3

6.11.8 STAGE 4

Stage 4 (Figure 6.150) would see the full operation of all new facilities. The proposed ERF would operate at full required capacity with each process line capable of processing up to 350,000 tpa with a total capacity of the facility at up to 700,000 tpa. The RRF would operate with a capacity to process around 390,000tpa.

EcoPark House would be occupied by the site operator and the Edmonton Sea Cadets, and also be available for other community and education activities.

Operational vehicles would continue to access the Edmonton EcoPark via the existing access on Advent Way to serve both the ERF and RRF while some movements would be undertaken using the Deephams Farm Road access. Members of the public and local businesses visiting the RRC element of the RRF, EcoPark House and staff car park would access the Edmonton EcoPark via the new Lee Park Way access.

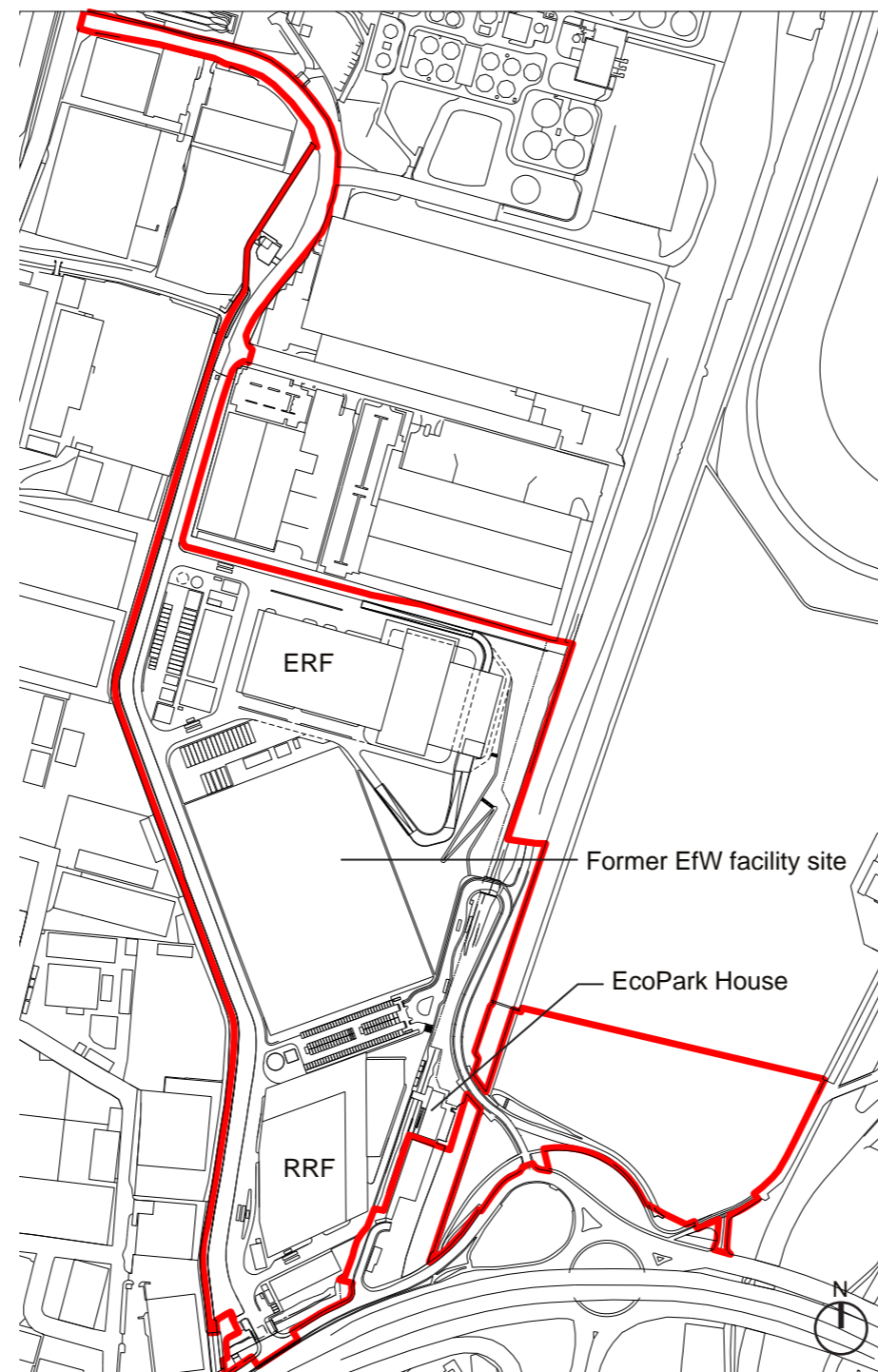


Figure 6.150: Stage 4

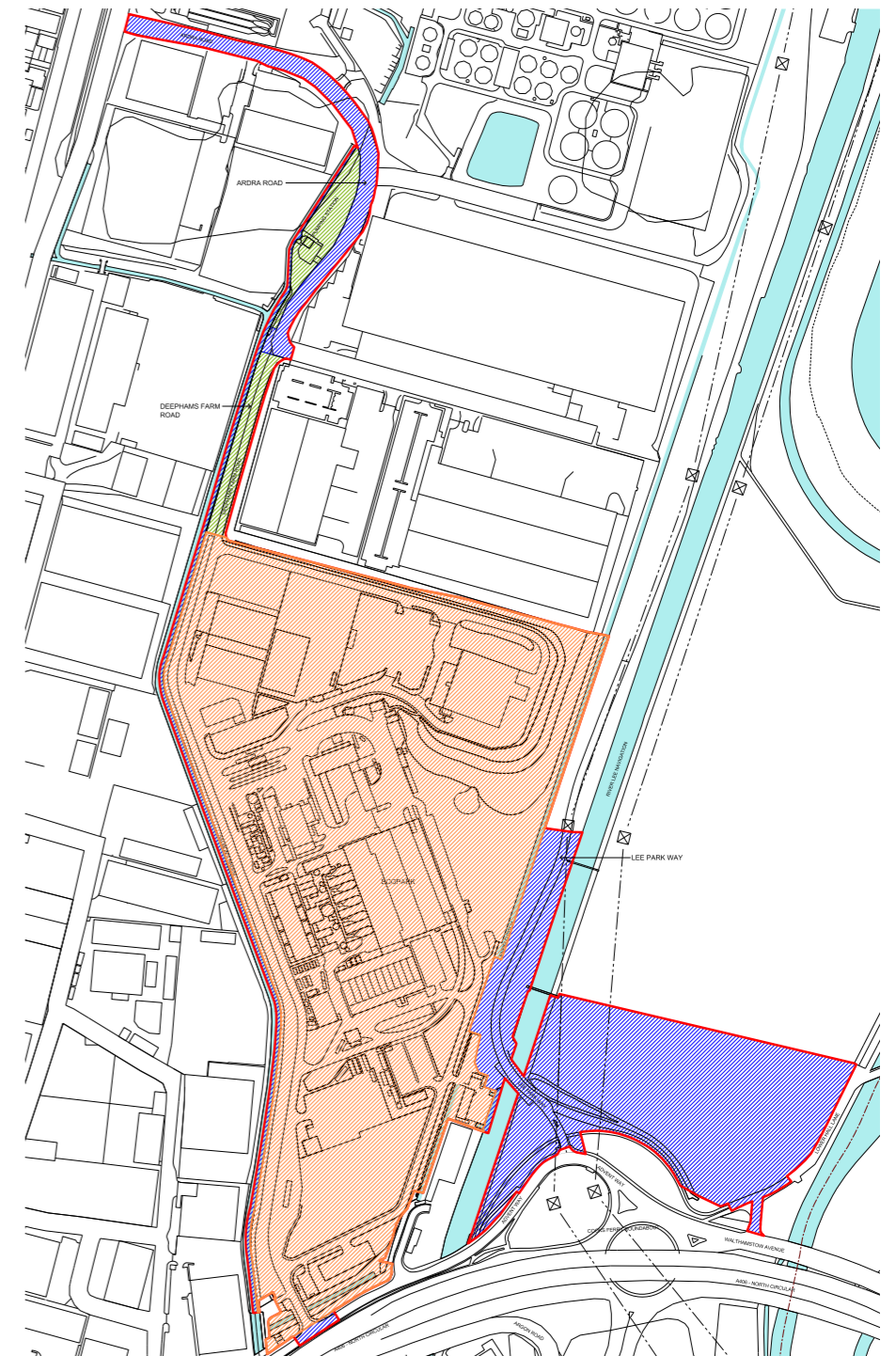


Figure 6.151: Edmonton EcoPark

- Application Site Boundary
- Edmonton EcoPark
- Edmonton EcoPark extension (post completion)
- Application Site outside Edmonton EcoPark

6.12 BUILDING MAINTENANCE

6.12.1 BUILDING MAINTENANCE APPROACH

The Project would make provision for maintenance with the aim of reducing requirements, making use of advances in building and construction technology. The relocation of waste activities into the enclosed RRF would reduce the potential for release of dust and dirt into the air and therefore also support reduced requirements for maintenance.

6.12.2 MATERIALS

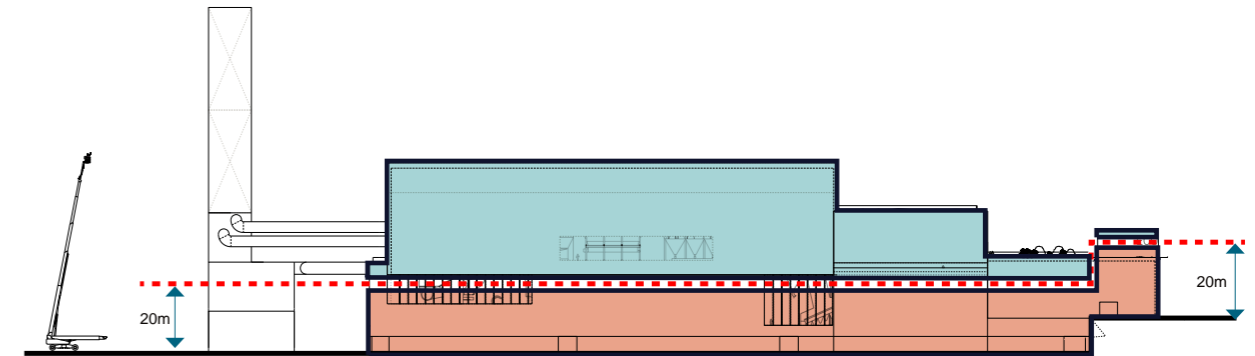
The materials selection responds to the operational activities taking place at ground floor:

- a. low level materials would be darker colours to disguise dirt and stains and would incorporate a robust base to resist moderate impacts without the need for immediate replacement; and
- b. materials for upper elements would be lighter and perforated.

Further information on the materials palette is set out in the Design Code Principles (AD02.02).

Zones accessible without a MEWP
 Zones requiring MEWP for access

ERF ACCESS FOR CLEANING



ERF ACCESS FOR MINOR REPAIRS OR MAINTENANCE

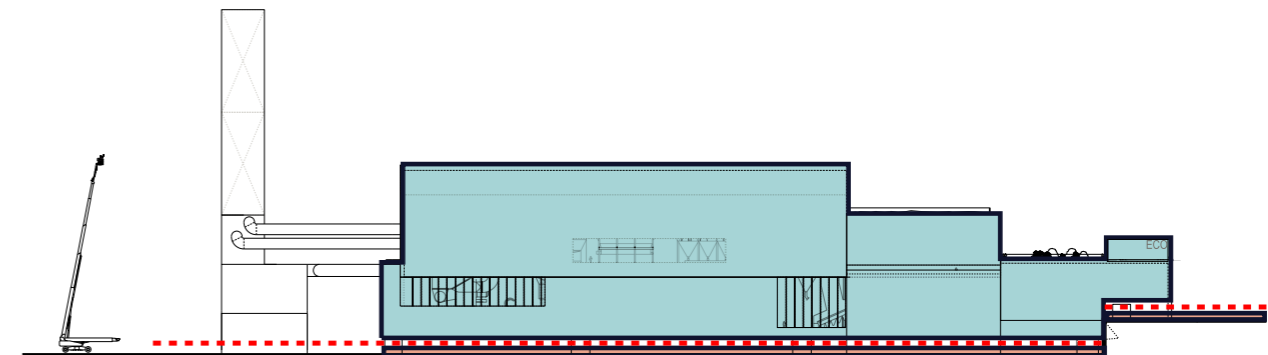
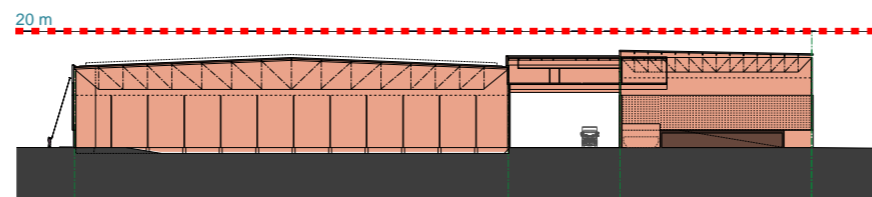


Figure 6.152: Illustrative ERF maintenance and access

RRF ACCESS FOR CLEANING:



RRF ACCESS FOR MINOR REPAIRS OR MAINTENANCE:

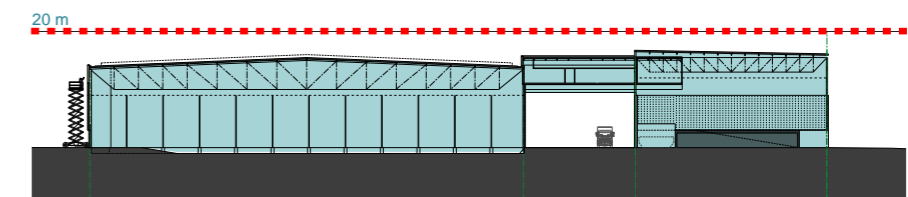


Figure 6.153: Illustrative RRF maintenance and access

6.12.3 MAINTENANCE ACCESS

The design has allowed for access to all parts of all building façades and rooves for cleaning and maintenance appropriate to the height of the building and type of maintenance and access required.

- a. cleaning – the long term performance of the cladding can be influenced through material selection and design of detailing. Nevertheless regular cleaning would be required to maintain the cladding and appearance of the buildings. Since cleaning would be scheduled and frequent, it has been possible to allow for access to the buildings through their design;
- b. minor repairs and maintenance – minor repairs and maintenance such as minor envelope or roof works would typically be carried out by trained staff or specialists and are unlikely to require scaffolding or crane access. Such repairs are responsive to particular works required making them less predictable and infrequent. The design has considered access to the building envelope and the roof; and

- c. major works - major works include activities such as replacement of cladding panels or equipment. They are also infrequent and unscheduled and are likely to require the isolation of specific building areas and use of scaffolding and/or cranes.

Areas which are more than 20m high are unlikely to be accessed using an extendable pole system. Provision has been made for hard standing around the building perimeter at a sufficient width for access using cherry picker (an elevated work platform and hydraulic lifting system or Mobile Elevating Work Platform (MEWP)) or scaffolding.

Alternative access has been explored for areas where access would not be possible from the ground and for access to façade cavities. These areas are illustrated in Figure 6.154. Options for maintenance considered as part of design development include extendable pole systems, permanent gantries, rope access from

the roof, Building Maintenance Unit, erection of scaffolding and cranes. The roof is expected to only require access by trained staff for maintenance work or major repairs with the exception of the Tipping hall roof. Fall protection has also been considered for these areas.

The ERF bunker would typically be inspected every five to ten years, coinciding with planned maintenance works where one or more process lines are out of service.

The design of the stack has allowed for stair, ladder or lift access to a series of interior platforms for maintenance and minor works. External access would be possible using a MEWP or rope access from above. Similarly major works are anticipated to require scaffolding or crane access.

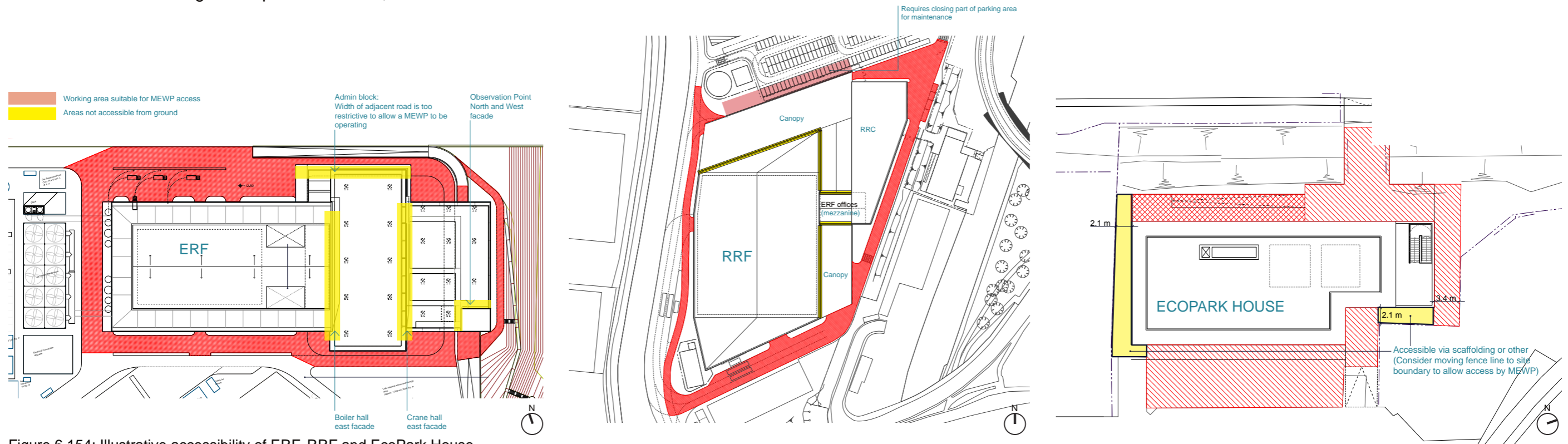


Figure 6.154: Illustrative accessibility of ERF, RRF and EcoPark House

6.13 SAFETY AND SECURITY

6.13.1 FIRE STRATEGY

Large quantities of combustible material could be present at the Application Site associated with its use. To reduce the risk of fire, designated areas would be provided within buildings for combustible waste. The Application Site would have quarantine areas to which any vehicles identified at the weighbridge with smouldering loads would be diverted.

Passive fire protection such as provision of fire compartment boundaries within buildings to ensure that evacuation routes are protected and protection to structural measures have also been provided for in the design.

Road access would be available to all buildings at the Edmonton EcoPark, including proposed demolition and construction areas. For each building there would be access to more than 50 per cent of the perimeter. Evacuation routes have been considered in the design.

The length of the roads on-site combined with waste delivery vehicle manoeuvring aprons and on-site car parks provides sufficient space for the necessary fire fighting vehicles as well as associated support vehicles, to deal with a large fire.

6.13.2 SITE SECURITY

The Application Site would be protected by a palisade fence to the north, east and south of the Edmonton EcoPark and temporary fencing and hoarding around the Temporary Laydown Area and other works during construction. The Lee Park Way and River Lee Navigation towpath would remain publicly accessible. Access to the Edmonton EcoPark in future would be managed by access gates with staffed gatehouses at all entrances.

Further infrastructure to deter illicit entry would be required and this could include measures such as motion-sensitive lighting, patrols (particularly during demolition and construction phases) and CCTV.

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A.1 NATIONAL POLICY STATEMENTS

National Policy Statements (NPS) are the primary consideration for the SoS in making decisions regarding applications for NSIPs, as set out in the Planning Act 2008 (as amended). Overarching National Policy Statement for Energy (NPS EN-1) and National Policy Statement for Renewable Energy Infrastructure (NPS EN-3) set out the policy framework for the Application, outlining objectives which must be achieved and setting out principles against which the application will be assessed by the decision maker.

NPS EN-1 gives strategic direction on a number of topic areas relating to energy infrastructure. Regarding design, Section 4.5 of NPS EN-1 sets out the criteria for 'good design' for energy projects, highlighting the importance of providing the balance between aesthetics and functionality. This policy stresses that the application should fulfil "*the ultimate purpose of the infrastructure*", taking into account any operation, safety and security requirements to which the design must adhere.

According to NPS EN-1, good design should be achieved through sensitive use of materials and design in response to the existing character and context for any development application. Measures should also be implemented to minimise adverse impacts of development, such as: effective plant layout; use of landscaping, bunds or noise barriers to reduce noise transmission; and design of plant to reduce emissions.

Section 2.4 of NPS EN-3 states that "*proposals for renewable energy infrastructure should demonstrate good design in respect of landscape and visual amenity, and in the design of the project to mitigate impacts such as noise and effects on ecology*".

A.2 OTHER PLANNING POLICY

Although the NPS are the primary policy documents used in decision making for DCOs, the Application must still have regard to other policy at the national, regional and local level.

Other National Policy

Echoing the emphasis on high quality design outlined in NPS EN-1, Policy 7 of the National Planning Policy Framework (NPPF)⁹, which sets out the Government's planning policies for England, highlights the importance of design in placemaking and improving the built environment. This policy also places an emphasis on sustainability and the importance of sustainable development. Additionally, Policy 8 of the NPPF promotes safe and accessible environments.

This is supported by policy set out in the National Planning Policy for Waste¹⁰, which requires planning authorities to ensure that waste management facilities are well-designed, so that they contribute positively to the character and quality of the area in which they are located.

Regional Policy

At the regional level, the London Plan¹¹, provides the strategic framework for the development of London until 2036 and forms part of the development plan for Greater London. Regarding design, Policy 5.3 promotes high quality sustainable design which integrates sustainable design standards at all stages of construction.

Building on this, Policy 7.4 requires that development proposals consider how they impact upon and integrate with their existing context, with regard to 'form, function, and structure'. Policy 7.6 deals specifically with architecture, and sets out that all buildings should be of high architectural quality, should reflect local architectural character and should have no adverse impacts on the surrounding area. Policy 7.2 requires new developments to demonstrate how the principles of inclusive design, including the specific needs of older and disabled

people, have been integrated into the proposed development. New development should ensure high quality pedestrian environments (Policy 6.10).

The London Plan also provides specific policy on various elements of design of the built environment, including the location and design of tall buildings (Policy 7.7), minimising greenhouse gas emissions (Policy 5.2), and incorporating planting into development sites, including green roofs (Policy 5.11).

Also at the regional level are a number of Mayoral strategies which provide further guidance on a number of topics affecting design and access. Most importantly, these include the Mayor's Sustainable Design and Construction Supplementary Planning Guidance¹², which sets out in greater detail the mayor's priorities in delivery high quality design and construction in a range of areas, including noise, air quality, flood risk, energy and site layout.



⁹ Department for Communities and Local Government (2012) National Planning Policy Framework

¹⁰ Department for Communities and Local Government (2014) National Planning Policy for Waste

¹¹ Mayor of London (2015) The London Plan: The Spatial Development Strategy for London Consolidated with Alterations since 2011

¹² Mayor of London (2014) Sustainable Design and Construction Supplementary Planning Guidance

Local Policy

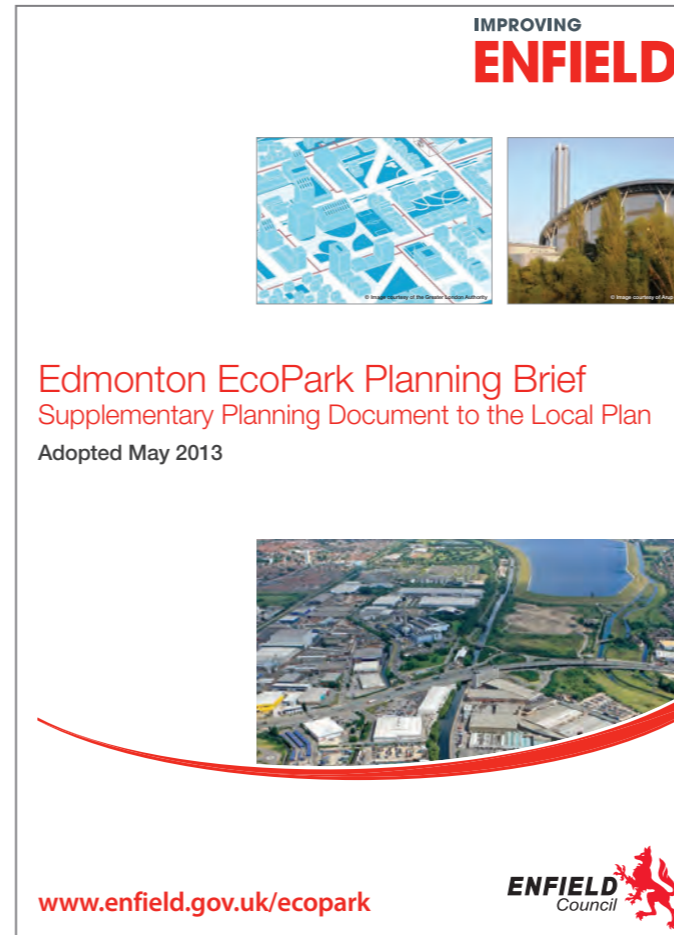
At the local level, there are two key policy documents which set the planning policy context: the Enfield Plan Core Strategy 2010-2025¹³ and the Development Management Document (DMD)¹⁴.

The former of these two documents provides the strategic requirement, mirrored at other policy levels, for high quality and design-led development which takes account of its surrounding context (Policy CS30). The latter DMD provides more detailed guidance on a number of aspects of built environment design in Enfield, including:

- a. the construction of tall buildings (Policy DMD 43);
- b. standards for sustainable design and construction (Policy DMD 49);
- c. the use of secure by design principles and designing out crime (Policy DMD 37); and
- d. the efficient use of roof space and vertical surfaces (Policy DMD 55).

There are a number of policy documents which provide design guidance which is specific to the Application Site. The first is the Proposed Submission Central Leaside Area Action Plan¹⁵. Policy CL22 of this document suggests that the redevelopment of the EcoPark site should take a design-led approach to redevelopment with high quality design, landscaping and materials.

The Edmonton EcoPark SPD¹⁶ goes into further detail on the site itself, although there is no additional policy contained in the Edmonton EcoPark SPD. In particular, Chapter 4 sets out the principles which future development at the site should follow, including: the use of sustainable design and construction methods; and high quality design principles for layout, aesthetics and materials. Specific details are provided on a number of aspects of design, including height, massing and landscaping.



¹³ LB Enfield (2010) Enfield Plan Core Stratet 2010-2025

¹⁴ LB Enfield (2010) Development Management Document

¹⁵ LB Enfield (2015) Proposed Submission Central Leaside Area Action Plan

¹⁶ LB Enfield (2013) Edmonton EcoPark Planning Brief Supplementary Planning Document to the Local Plan



Series 05 Technical Documents

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