

**Appendix 3: Draft Ratcliffe on Soar Local Development
Order Design Guide (July 2023)**

RATCLIFFE-ON-SOAR LOCAL DEVELOPMENT ORDER

DESIGN GUIDE



Rushcliffe
Borough Council

JULY 2023

Redevelopment of Ratcliffe-on-Soar Power Station Site

Ratcliffe-on-Soar Power Station will close at the end of **September 2024 in line with government policy to end coal-power generation.**

The new site will be a low-carbon energy and advanced manufacturing based industrial park. It will be the ideal location to shape, grow and deliver high technology and green economy business for the 21st century.

These are the key features of the proposal:



Well connected location in the heart of the East Midlands which provides direct access to a passenger train station and its own freight train infrastructure.



Low-carbon, resilient and secure energy supply for high-technology industries.



A generally open and accessible environment alongside similar businesses.



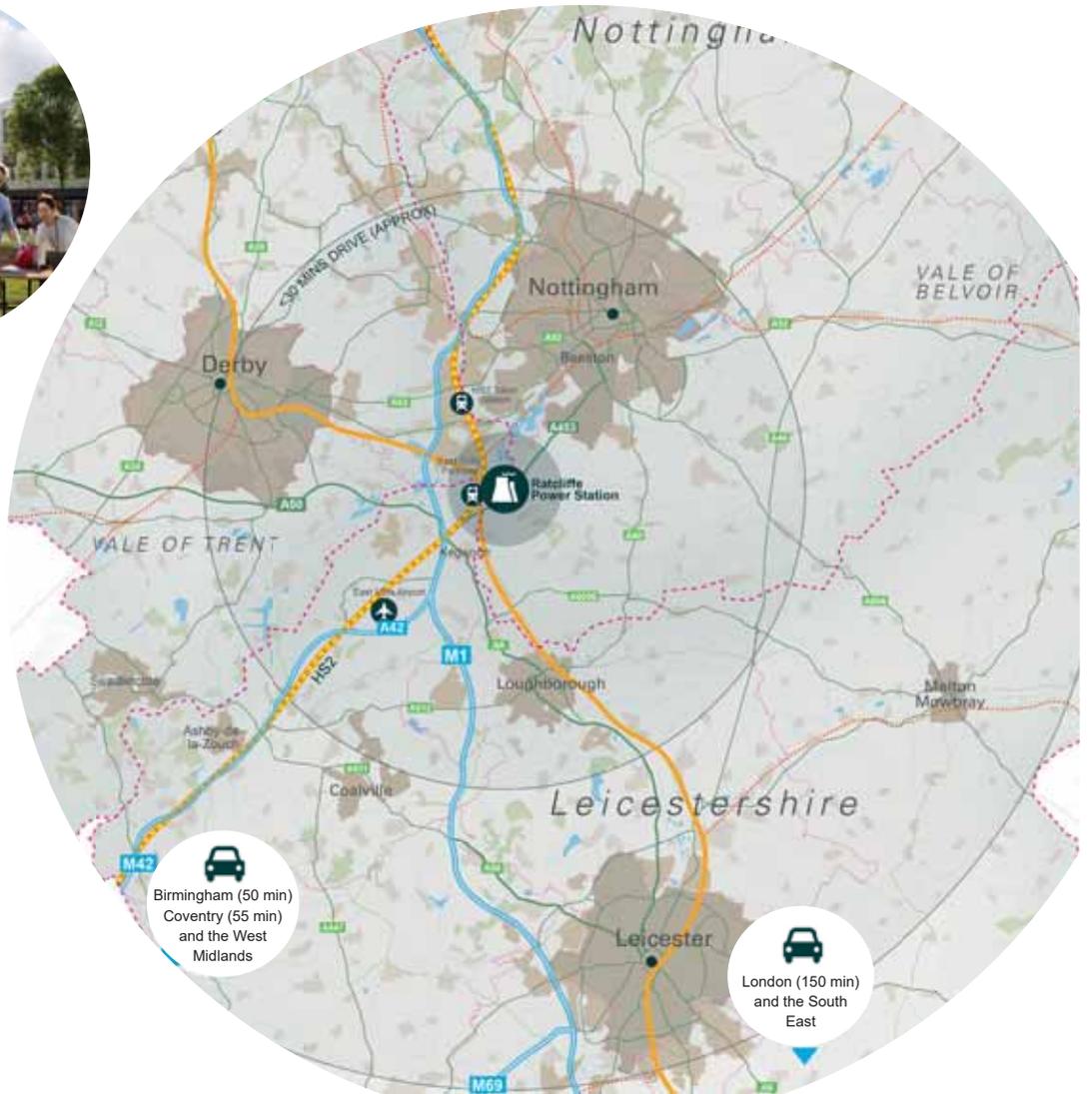
A wide range of flexible, fully serviced plots and infrastructure to suit businesses of all scales.



Potential to become an innovation hub where new technologies can be researched, prototyped and delivered at scale.



A new people-centered, green and bio-diverse industrial park to attract, train and retain staff.




Birmingham (50 min)
Coventry (55 min)
and the West
Midlands


London (150 min)
and the South
East

Contents

Purpose of Design Guide

The Design Guide is an important part of the **Local Development Order. It provides clarity for prospective occupiers and the Council by setting out **Key Design Principles for Compliance**.**

The Design Guide is intended to inform and support the process of preparing an Application for a Certificate of Compliance under the LDO. It sets out broad Design Principles that will be applied by the Council when assessing compliance applications and will help to ensure that such applications deliver the outcomes aligned to the vision and objectives of the LDO and also assist in a timely and efficient determination of such applications by the Council.

Other design considerations are included that present further opportunities to strengthen placemaking, ensure that the development is an attractive place to work and responds positively to its surrounding landscape and nearby communities.



Section 1 **Project Vision**

Site Characteristics
A New Vision for the Site



Section 2 **Parameter Plans and Guidance**

Land Use
Transport
Infrastructure & Services
Building Heights
Strategic Landscape



Section 3 **Illustrative masterplan**

Illustrative masterplan



Site Characteristics

The site comprises approximately 265 hectares, bisected by the A453.

The Northern Area includes the current power station including coal stockpiles, the operational power plant, eight cooling towers, supporting buildings and facilities. The Southern Area is used for ash management operations.

Both National Grid substations (400 kV and 132 kV) will remain on site, together with power line cables that feed into the 400 kV substation.

The site is considered to support a range of habitats and species.

The site lies within Nottingham-Derby Green Belt and to the north and east the land rises and comprises a mix of agricultural land and woodland, beyond which is the village of Thrumpton and the River Trent. To the west of the power station, the site is bounded by the Midland Main Line railway and East Midlands Parkway Station (and potential future HS2 Station); beyond this is agricultural land and the River Soar, with the M1 Junction 24 about 3 km away. To the south of the A453, the site is bounded by more agricultural land and parcels of woodland. The village of Ratcliffe-on-Soar lies directly to the western side of the railway line.



Existing Topography

■ Contour Line



Existing Above Ground Services

■ Overhead power lines



Existing Biodiversity

■ Biodiversity areas

*Note:

- Refer to the LDO "Topography Plan" for more detailed information about existing topography and "Existing Site Plan" for existing above-ground services.
- Refer to the Environmental Statement, Chapter 10 Ecology and its supporting appendices and drawings, for more information about the existing biodiversity of the site.



Aerial view of the site's Northern Area

A New Vision for the Site

A Smart, Green, Resilient Industrial Park focused on Energy Generation and Advanced Manufacturing.

This site will be transformed into a centre for energy production and storage, advanced manufacturing and industry. It will deliver the technology and industry required to help move towards a net-zero carbon future.

The site will become a centre for:

- Advanced manufacturing, including of technology needed to transition to net-zero.
- Green and low-carbon energy generation, and energy storage for more efficient energy use.

By co-locating these uses, energy and materials will be used in a more sustainable way. By clustering different industries and maximising connectivity to nearby towns and cities, a hub will be created for highly skilled jobs. Through agglomeration and links to universities, there could be a cross-fertilisation of ideas and innovation.

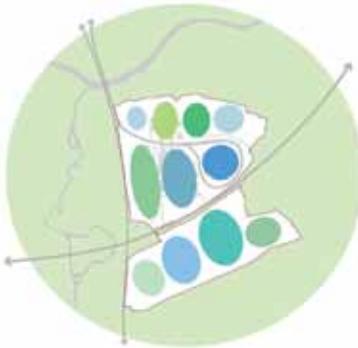
The principles behind the Design Guide and associated masterplan are to:

- Improve the quality of the environment.
- Maximise accessibility by making positive connections to the adjacent road, railway networks, and public rights of way.
- Concentrate development to exploit the availability of electrical power.
- Create large and flexible development plots which will accommodate future industry needs - targeting factories that will help the UK to become net zero carbon, including factories to produce batteries and electric vehicles.
- Accommodate complementary uses to make this place more diverse and resilient.
- Promote sustainable transport by enabling people to access the site by rail, bus and bicycle.
- Deliver modern, efficient, environmentally sustainable buildings.
- Create an environment for research and development, and training.
- Create a high-quality environment to attract, train and retain staff.
- Allow development to come forward in a phased manner.

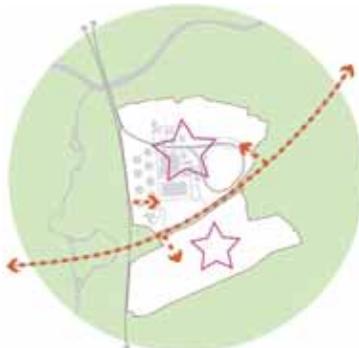
1. PROJECT VISION

2. PARAMETER GUIDANCE

3. ILLUSTRATIVE MASTERPLAN



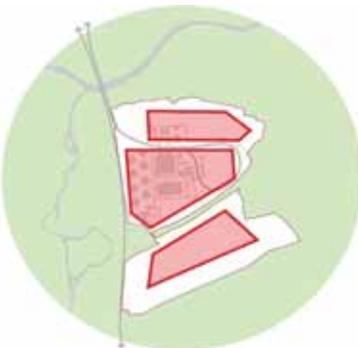
1. A home for a diversity of similar uses



2. One site identity across both north and south



3. Good transport access



4. Resilient and secure plots of varying sizes



5. Progressively delivered plots and infrastructure



6. A high-quality environment to work, study, and visit



Example of hydrogen plant



Example of car batteries factory



Example of public space

Parameter Plans and Guidance

The Parameters that underpin redevelopment of the site provide **occupier flexibility** and have been developed to respond to the clean growth agenda and shift to a low-carbon economy, market requirements and the competitive advantages of the site.

They establish the **physical and spatial limits** of what can be delivered on the site. They include the following plans:

Land Use: Establishes the distribution of permitted land uses across the site and maximum floorspace for each class.

Transport: How the transport needs of Ratcliffe should be achieved on site and integrated through good design.

Infrastructure and Services: Establishes the locations for key strategic infrastructure elements.

Building Heights and Design: Guidance on building scale and other design features.

Landscape: Establishes a strategic landscape framework to be followed in bringing forward any development.

**Note:*

- *For more information on this section, please refer to the “Parameter Plan Drawings”, as this Guide contains condensed drawings.*



Artist impression of the Northern Area.

Schedule of Land Uses

| Permitted Use | Planning Class | Restrictions |
|--|---|--|
| Energy Generation and Storage | Sui Generis* | Excluding wind generation. Maximum 10 ha of ground-mounted solar power generation within Zone B only. |
| Advanced Manufacturing and Industrial | B2 & E (g) (iii) | - |
| Data Centre | B8 / Sui Generis* | - |
| Logistics, Storage and/or Distribution | B8 | Logistic uses shall be limited to a maximum of 180,000 m ² GFA on the Northern Area. |
| Research and Development | E (g) (ii) | - |
| Offices | E (g) (i) | - |
| Education (skills and training) | F1 (a) | - |
| Complementary Uses, including; <ul style="list-style-type: none"> - Active Travel Mobility Centres - Small scale retail - Food and beverage - Hotel and meeting facilities - Gym and fitness centre - Creche/day nursery | F2 (a) E (b) & Sui Generis* C1 E (d) E (f) | <ul style="list-style-type: none"> - Small scale retail: Maximum 280 m² floorspace. - Food and beverage: Maximum 1 x Cafe/Bar and 1 x Hot or cold food takeaway. - Maximum size 150 beds, with ancillary meeting/ conference facilities. - Gym and fitness centre, Creche/ day nursery: Max 1 unit each |

*Not falling into a particular Use Class

Characteristics of acceptable uses

1. Advanced manufacturing producing technology or using technology to deliver the net-zero transition.
2. Produce, store and/or manage low-carbon and green energy.
3. Provide high-quality employment, well paid, highly skilled jobs.
4. Businesses with high power or heat demands - where co-location allows energy to be used more efficiently
5. Modern industrial or logistics facilities applying high-tech processes to improve efficiency.
6. Promote cross-fertilisation of ideas and innovation through education or training.
7. Provide complementary services primarily to support the occupiers of the Site.

Examples of acceptable uses

Battery or electric vehicle manufacture, products or components designed to produce low-carbon energy or reduce carbon emissions, businesses using carbon zero energy or utilising technology to achieve net zero manufacturing.

Hydrogen production.

Gigafactories for electric vehicle or battery manufacture.

Co-located industry where waste heat and/or material from one process supplies another facility.

Data centres.

Logistics linking to the rail freight siding.

Solar power generation.

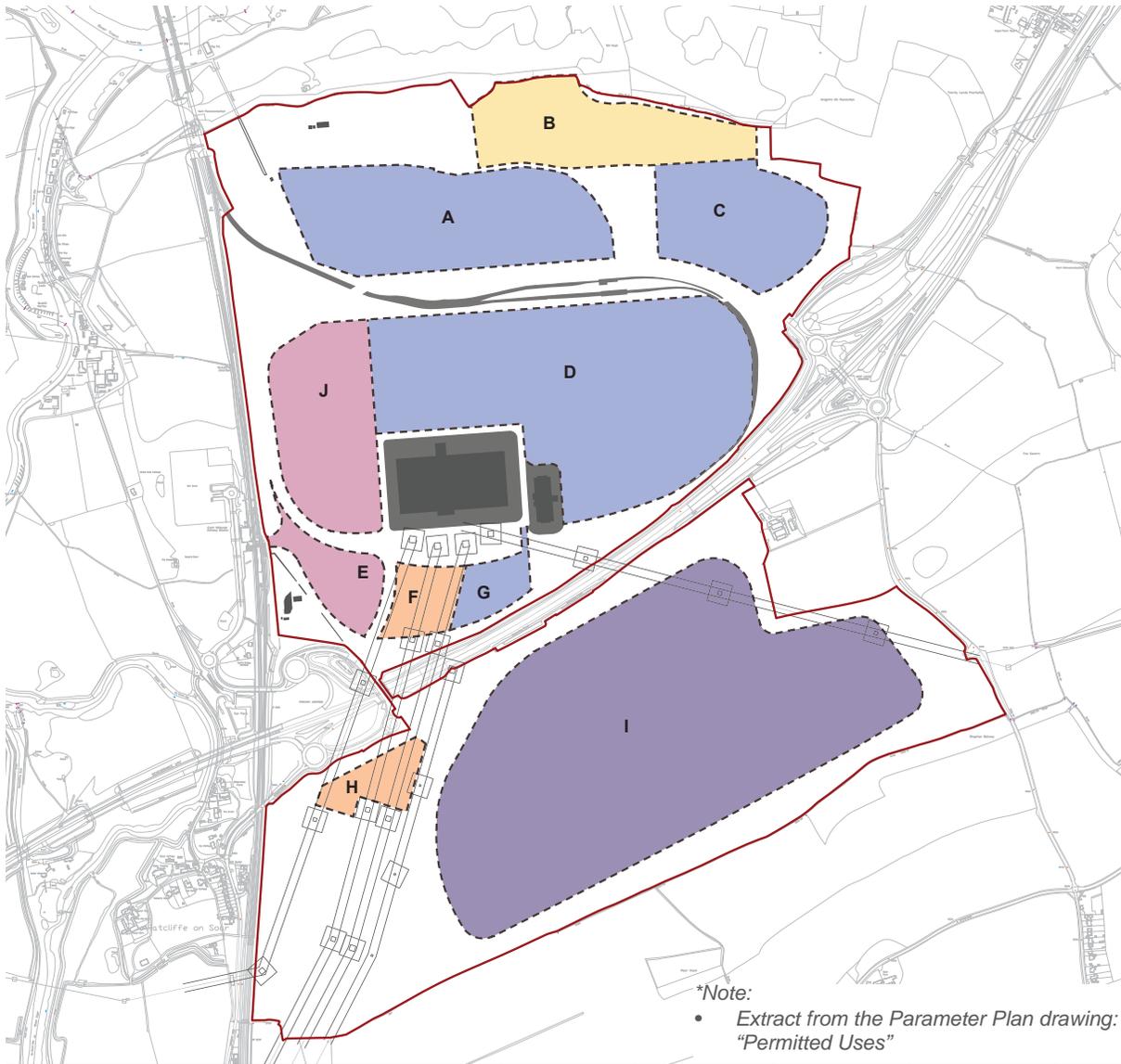
Battery storage.

R&D facility partnered with a university.

Small scale hotel, retail, food and beverage to service site occupiers.

Land Use

This plan establishes the uses permitted in each part of the site. The location and distribution of uses across the site is flexible but must reflect the Land Use Parameters.



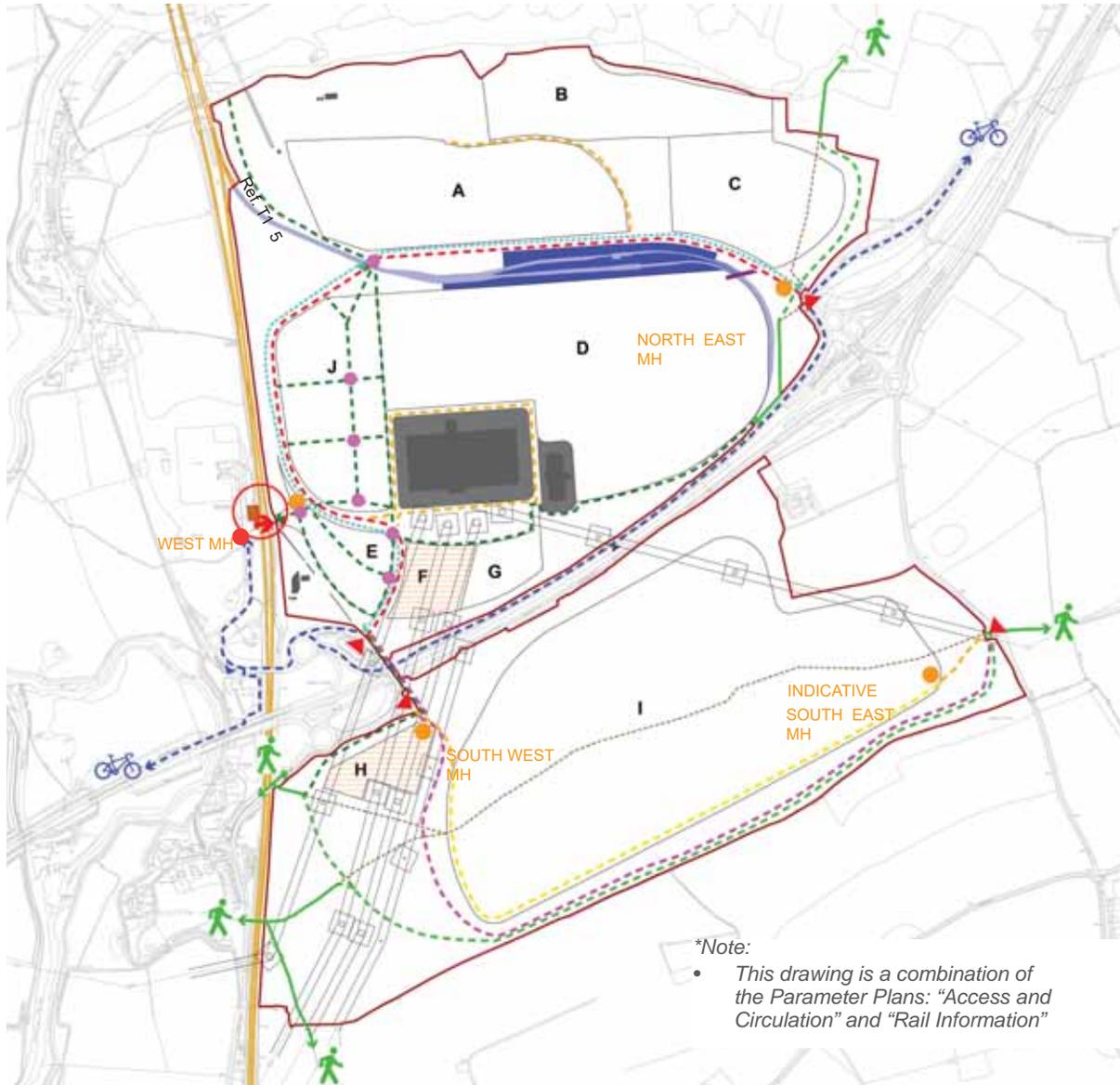
| | A | B | C | D | E | F | G | H | I | J |
|---|---|---|---|---|---|---|---|---|---|---|
| Energy Generation & Storage (Class Sui Generis) | ✓ | | ✓ | ✓ | ✓ | | ✓ | | ✓ | ✓ |
| Ground-Mounted Solar Power Generation | | ✓ | | | | | | | | |
| Advanced Manufacturing & Industrial (Class B2 & E (g) (iii)) | ✓ | | ✓ | ✓ | ✓ | | ✓ | | ✓ | ✓ |
| Data Centres (Class B8/Sui Generis) | ✓ | | ✓ | ✓ | ✓ | | ✓ | | ✓ | ✓ |
| Logistics (Class B8) | ✓ | | ✓ | ✓ | | | ✓ | | | |
| Research & Development (Class E (g) (ii)) | ✓ | | ✓ | ✓ | ✓ | | ✓ | | | ✓ |
| Offices (Class E (g) (i)) | | | | | ✓ | | | | | ✓ |
| Education, Skills & Training (Class F1 (a)) | ✓ | | ✓ | ✓ | ✓ | | ✓ | | | ✓ |
| Community Hub with complementary uses for site occupiers including small scale retail (Class F2 (a)), food and beverage (Sui Generis & E), creche or children's nursery (Class E (f)), gym or fitness facility (Class E (d)) and hotel (C1) | | | | | ✓ | | | | | ✓ |
| Dedicated car parking only | | | | | | ✓ | | ✓ | | |

Principles for compliance

| Ref | Design principle | Key criteria |
|------|--|---|
| LU 1 | Make efficient use of land. | <ol style="list-style-type: none"> 1. Building layouts in the shape of orthogonal blocks running parallel or perpendicular to streets and public realm areas. |
| LU 2 | <p>Locate public face for buildings, onto streets and pedestrian routes, and amenity areas.</p> <p>Locate plant, storage yards, and external servicing equipment out of sight from public realm areas.</p> | <ol style="list-style-type: none"> 1. Buildings generally to be placed at the front edge of the plot, with the exception of landscaping, and service yards and parking to the rear or side, unless an exception is justified on operational grounds. 2. Where practicable, public entrances of buildings should be placed adjacent to or close to similar entrances for neighbouring plots to create active frontages. |
| LU 3 | Group similar business types and uses together. | <ol style="list-style-type: none"> 1. North Site <ul style="list-style-type: none"> • Plots A, C, D and G: Energy generation & storage; advanced manufacturing and other industrial uses; data centres; logistics (up to 180,000m² GFA), research & development; education, skills & training uses. • Plot B: Solar Power Generation only. • Plots E and J: Energy generation & storage; advanced manufacturing and other industrial uses; data centres; research & development; offices; education, skills & training uses; community hub with complementary uses (including small scale retail (Class F2 (a)), food and beverage (sui generis & Class E), children's nursery (Class E (f)), gym (Class E(d)) and hotel (Class C1); micro-mobility hub (consider e-bike or e-scooter rental points, stop for internal site shuttle buses). These plots will suit a mixed-use, campus style development with higher employment densities which will benefit from the proximity to the station. • Plots F and H: Dedicated parking 2. South Site <ul style="list-style-type: none"> • Plot I: Energy generation & storage; advanced manufacturing and other industrial uses; micro-mobility hub (consider e-bike or e-scooter rental points, stop for internal site shuttle buses). Logistics not permitted. |
| LU 4 | Create an environment to attract and retain businesses and people. | <ol style="list-style-type: none"> 1. Streets, spaces and external areas should be designed to be safe and comfortable for people to use. 2. Layout should be accessible and permeable to encourage walking and cycling. 3. Incorporate spaces around entrances and higher quality landscape areas where people can meet, interact and rest. 4. Plot circulation should connect to main site pedestrian and cycle routes. 5. Place entrance and reception uses to face main circulation routes for a legible and cohesive masterplan. 6. Plots to incorporate meaningful landscape buffers to front and other external facing boundaries. 7. The secure edges to plots need to be carefully designed to create attractive environments and ensure that the key public spaces are addressed through focusing activity, entrances, and higher quality landscape design. |
| LU 5 | Create an attractive, well designed approach from principal highway and rail entrances into the site (Plots J, E & G). | <ol style="list-style-type: none"> 1. Locate active parts of buildings to face onto public realm space. 2. Provide a 'landmark' building, within Plot E, incorporating outstanding design features and aesthetic interest in order to reinforce the main entrance into the Site and make a connection with East Midlands Parkway railway station. |
| LU 6 | Ensure development accords with the Vision for the site to become a centre for low-carbon energy generation and storage uses that are efficient in their use of energy, provide facilities for advanced manufacture, including technologies needed to transition to net zero, or that provide research and/or training facilities for innovation of technologies needed to transition to net zero. | <ol style="list-style-type: none"> 1. With the exception of Plot F, on Plots A-G demonstrate that the proposed development meets at least one of the "Characteristics of acceptable uses" in the middle table on page 11. 2. Demonstrate that the proposed development on Plot I meets criterion 1 or 2 of the "Characteristics of acceptable uses" in the middle table on page 11. 3. Maximise use of renewable or low-carbon energy such as solar panels. 4. Demonstrate the energy efficiency of the building. 5. Provide energy storage options, where appropriate. 6. Provide products and services that accord with the vision of the industrial park and have a synergy with nearby uses. 7. Demonstrate how construction related carbon use will be minimised. For example, through smart design and material selection. |
| LU 7 | Complementary uses (Plots E and J only) should be designed to primarily support the users of the businesses and people working within the Site. | <ol style="list-style-type: none"> 1. Demonstrate that the scale and type of complementary uses are necessary primarily to serve the needs of businesses within the LDO site. |

Transport

This plan sets out a framework for access and movement and travel patterns and systems.



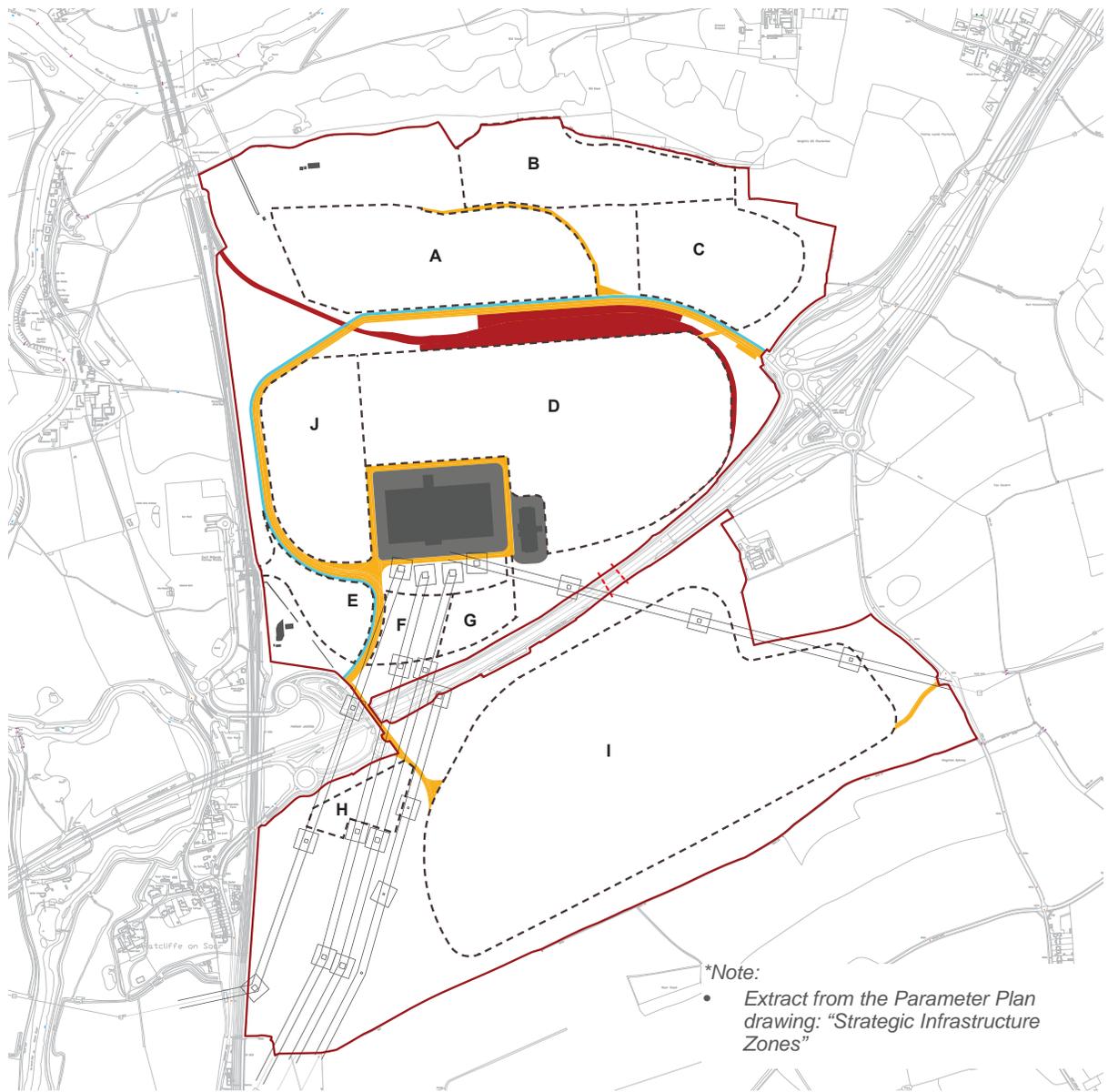
- | | | | | | |
|--|---|--|---|--|---|
| | LDO Boundary | | Secondary vehicle route, with off-road shared footway/cycleway | | Mobility transport hub (MH) |
| | Existing, fixed plots | | Indicative private vehicle route through development plot, with off-road footway/cycleway | | Potential Public Spaces |
| | Pylons | | Indicative route for diverted PRoW (precise route to be coordinated with ecologists to mitigate negative impacts) of landscape) | | Designated surface-level car parking plots in addition to on-plot parking |
| | Existing retained freight rail | | Retained PRoW | | National Rail |
| | Proposed development plots A to J | | Proposed new cycleway | | Proposed rail siding |
| | Proposed access to East Midlands Parkway Station | | Retained existing cycleway/footway | | Retained existing bridge |
| | Primary vehicle route, with off-road shared footway/cycleway and integrated landscaping | | Area safeguarded for potential future connection to public tram | | Bridge |
| | Site entrances | | Network of pedestrian routes | | East Midlands Parkway Station and footbridge 14 |
| | Station entrance | | | | |

Principles for compliance

| Ref | Design principle | Key Criteria |
|-----|--|--|
| T 1 | Prioritise pedestrian/ cycle users. | <ol style="list-style-type: none"> Streets and shared surface areas to integrate different modes of transportation, prioritising safe, continuous, and direct routes for pedestrians and cyclists, as outlined in the illustrative infrastructure corridors on page 19. Design safe road, pedestrian, cycle and rail widths. See sections on page 19 for recommended widths. Use appropriately designed traffic calming measures. Provide safe crossing places with pedestrian and cycle priority. Where appropriate, make provision for potential to extend the proposed footpath route located at the north west area, beyond the site boundary towards the south bank of the river (see indicative drawing on page 14). |
| T 2 | Accommodate public transport access. | <ol style="list-style-type: none"> Bus and rail connections should be integrated into the site, for example, by connecting to the main site mobility hubs, East Midlands Parkway station, Clifton Park and Ride site, and any public buses or on-site shuttle buses. Enable easy, direct pedestrian and cycle access from East Midlands Parkway to promote sustainable modes of travel. Provide space for possible future tram link. Consider public bus routes along main road. Where appropriate, provide bus stop infrastructure on main Site road. |
| T 3 | Minimise impact on Public Rights of Way (PRoW) and enhance their environment where diversion is needed. | <ol style="list-style-type: none"> New public footpaths should be designed in accordance with Nottinghamshire County Council standards and should provide an attractive and safe experience for walkers, separate from any vehicular or cycle routes wherever possible. Ensure that PRoW diversion routes have been formally approved through an application for diversion under the provisions of S257 of the Town & Country Planning Act 1990 prior to commencement of any development that affect any existing PRoW. |
| T 4 | <p>Provide mobility transport hubs particularly at key arrival points and where routes come together as 'place making nodes'.</p> <p>Mobility hubs to include: public or shuttle bus stops, access to bicycles and e-scooters.</p> | <ol style="list-style-type: none"> Provide a mobility transport hub near to the pedestrian connection to East Midlands Parkway station and office/ commercial buildings. Provide other mobility hubs at key site entrances to facilitate access to public or shuttle bus services and e-scooter/bikes. (See indicative drawing on page 14). Each plot should aim to make provision to meet its own parking requirements within the plot in accordance with the standards set out in the Transport Assessment/Travel Plan. Site wide overspill parking to be provided near to one of the mobility hubs (Plots F & H). The use of well designed multi-storey car parks, within overall height limitations, should be considered where they would assist in meeting on-plot parking requirements and increase opportunities for on-plot planting for biodiversity gain and SuDS. Provide a bus stop within 400 m of the entrance to buildings where possible. Bus stop to be integrated with the site shuttle bus operation. |
| T 5 | Maximise potential to connect to East Midlands Parkway Station, considering future HS2 terminal. | <ol style="list-style-type: none"> Plots closest to the pedestrian connection to East Midlands Parkway station should include a mobility hub (unless one has already been provided), complementary uses (see Schedule of Uses on page 11) and have buildings with prominent public entrances facing towards the station and main access points. |
| T 6 | Maximise benefit and strategic advantage of existing site rail infrastructure. | <ol style="list-style-type: none"> Ensure rail siding and access areas are designed to facilitate safe and efficient operational use. |
| T 7 | Manage HGVs to operate safely with pedestrians, cyclists and micro-mobility. | <ol style="list-style-type: none"> Demonstrate how the design of HGV movement routes would reduce conflict with pedestrians, cyclists and other users. Prioritise easterly entrances to the Site and for HGVs and goods access and westerly entrances to the Site for passenger vehicles and public transport. |

Infrastructure and Services

This plan establishes the locations for key strategic infrastructure elements.



- LDO Boundary
- Existing, fixed plots
- Existing pylons
- Proposed development plots A to J
- Freight rail line and associated service/loading yards
- Areas for infrastructure (including roads, service corridors, landscaped pedestrian and cycle routes), and necessary mobility hubs as indicated on the Access and Circulation drawing
- Area safeguarded for potential future connection to public tram (currently proposed as landscape)
- Proposed underground services that fall outside the LDO boundary, beneath the A453.

Principles for compliance

| Ref | Design principle | Key Criteria |
|------|--|--|
| IS 1 | Design and layout should maximise use of key site infrastructure. | <ol style="list-style-type: none"> 1. Maximise benefit and strategic advantage of existing site features, including freight rail and connectivity to the highway network. 2. Provide loading/offloading service yards and access areas for freight rail, where appropriate. 3. Maximise access to on-site electricity network and infrastructure and the proximity to on-site green energy sources. 4. Demonstrate how the space within common infrastructure corridor will be safeguarded for a possible future tram route, connected to the Nottingham Tram Network (7.4 m minimum width). 5. Existing site sewage treatment works to be retained or upgraded to suit capacity requirements. |
| IS 2 | Infrastructure and utilities designed to support the clean growth and smart industrial park vision for the site. | <ol style="list-style-type: none"> 1. Demonstrate how the need for energy at source has been reduced by adopting a fabric first approach and that options for utilising energy and/or residual heat across the site and between uses has been explored and, where applicable, ensure that appropriate infrastructure is installed to maximise this potential. 2. Each phase of the Proposed Development should demonstrate how it has integrated the use of smart technology and contributes towards the integration of site-wide smart infrastructure that supports the Site's carbon reduction aims and helps achieve a lower energy consumption. 3. Demonstrate how on-site renewable energy is maximised, for example, using PV on roofs, over parking areas and walkways and through the use of other innovative renewable energy generating technologies. 4. Consider the potential to import low-carbon and renewable energy through the extension of a smart grid to surrounding renewable energy generators. 5. Provide EV charging facilities within all on-plot and site-wide parking areas (10% EV parking, and remainder 'EV ready'). 6. Consider alternative fuels for workforce transport and logistics vehicles. |
| IS 3 | Sitewide utilities and services to be provided within the road corridor. | <ol style="list-style-type: none"> 1. Ensure that the infrastructure corridor accommodates a single carriageway, buried services, footway and cycleway, landscaping, and an area safeguarded for tram on west and north sections of the corridor. 2. Cycleway to be two-way off-carriageway design, in accordance with Local Transport Note LTN 1/20. |
| IS 4 | Surface water to be managed in accordance with drainage strategy. | <ol style="list-style-type: none"> 1. Surface water management strategy at each plot should follow Nottinghamshire County Council Lead Flood Risk Authority requirements for water quality and quantity, i.e. reducing flows to those comparable greenfield run-off rates. 2. Waterbodies and new drainage features required for surface water drainage and attenuation should be positively integrated into the design as landscape and ecological features. 3. Sitewide infrastructure and individual plots should incorporate the use of sustainable and natural drainage solutions, such as permeable paving, swales, green/blue roofs, rain gardens and attenuation basins and ponds to improve water quality, in a manner that also supports high-quality public spaces, focusing on key areas. 4. Make use of water reuse/rainwater harvesting techniques. |

Infrastructure and Services

| Ref | Design principle | Key Criteria |
|------|--|--|
| IS 5 | Infrastructure and utilities to be designed to allow for ease of maintenance and existing utilities and infrastructure to be safeguarded | <ol style="list-style-type: none"> 1. Provide separated service corridors and main road access to allow maintenance access without limiting operations. Consider locations of access chambers and manholes carefully. 2. Each plot to be provided with a point of connection for each service. 3. The use of common ducting infrastructure should be considered before developing private networks. 4. Demonstrate that existing utility and infrastructure assets, including above- and below-ground electricity lines, are safeguarded and that any required approvals or wayleaves are obtained and any easements or stand-off distances are complied with. |
| IS 6 | Reduce outbound waste stream. | <ol style="list-style-type: none"> 1. Adopt waste hierarchy with a view to minimising the overall volume of waste arisings via designing out waste and maximising efficient use of materials. 2. Businesses should work together to create “closed loop” systems for materials where possible, to reduce waste. |
| IS 7 | Ensure efficient land remediation. | <ol style="list-style-type: none"> 1. Identify and consider opportunities for developer collaboration between plots to adopt a ‘suitable for use strategy’ where remediation works are aligned with development proposals to minimise earthworks and reduce waste. |
| IS 8 | External lighting. | <ol style="list-style-type: none"> 1. Submit an external lighting scheme, as part of the overall site infrastructure, i.e. for streets and communal areas/pathways and also as part of the individual plot design approval process. 2. Demonstrate how all external lighting has been designed to provide a safe and secure environment whilst minimising skyglow and overspill lighting beyond the Site. 3. All external lighting should be designed to ensure habitats and species, both within and adjacent to the Site, are not adversely impacted upon. 4. All lighting schemes to be agreed in liaison with the Council and East Midlands Airport to ensure aerodrome safeguarding requirements are met. |

Infrastructure Corridor Guidance

The infrastructure corridor combines the main infrastructure and circulation for the site, in an efficient route connecting all development plots and main site entrances. The following points offer further guidance on ways to use this designated infrastructure corridor to create a unified site. A further detail design to meet specific requirements to come forward as part of compliance submission. The key features of the proposed corridor are as follows:

- The service corridor is beneath the cycleway / footway, to prevent disruption to the main road during maintenance.
- The infrastructure corridor will include an area safeguarded for a potential public tram through the north and west of the Northern Area, a single carriageway, a service corridor with shared footway and cycleway, and a landscape corridor for amenity and drainage. The planting in the area safeguarded for the tram should not include trees or other vegetation that would be difficult to remove should the tram proposal come forward.

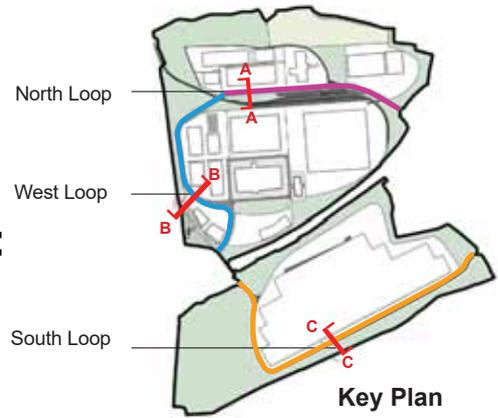
- Special Considerations for the West Loop:

The character of the corridor in this area should make the most of the proximity to the train station and proposed pedestrian connection. Crossing across the corridor should be carefully considered and prioritise safe and efficient pedestrian movement.

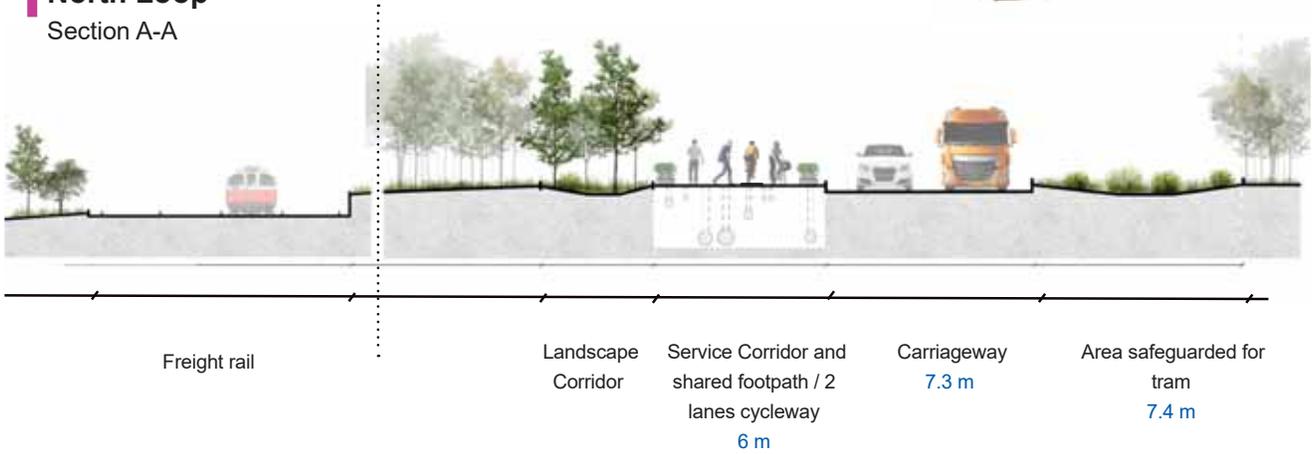
- Special Considerations for the South Loop:

The location of the infrastructure loop in this section is indicative as it could move inside the development plot if required. A PRoW and public cycleway is to be provided for along the southern boundary of the site, maximising plot security in this location whilst ensuring a well-connected public pedestrian and cycle network.

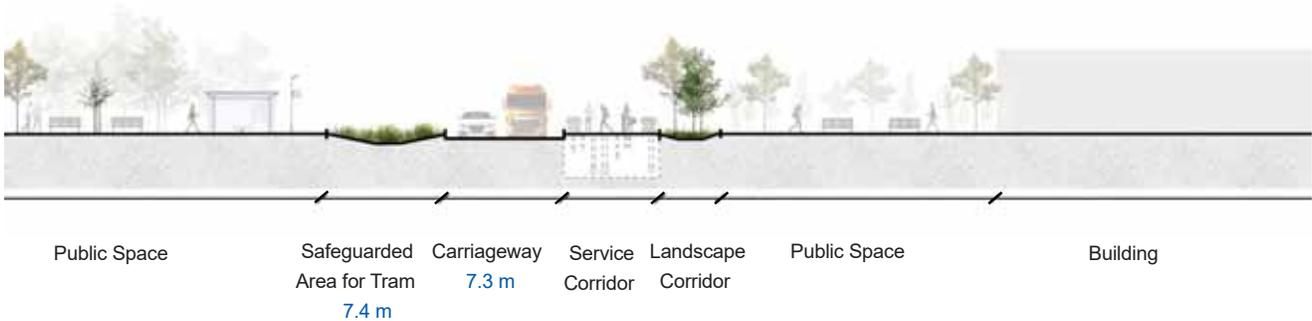
Illustrative Infrastructure Corridors: Recommended widths



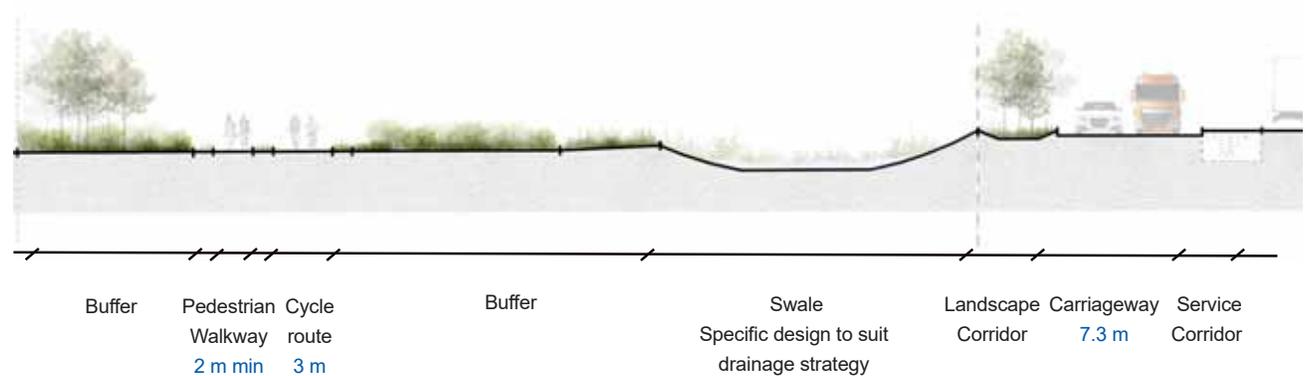
North Loop Section A-A



West Loop Section B-B

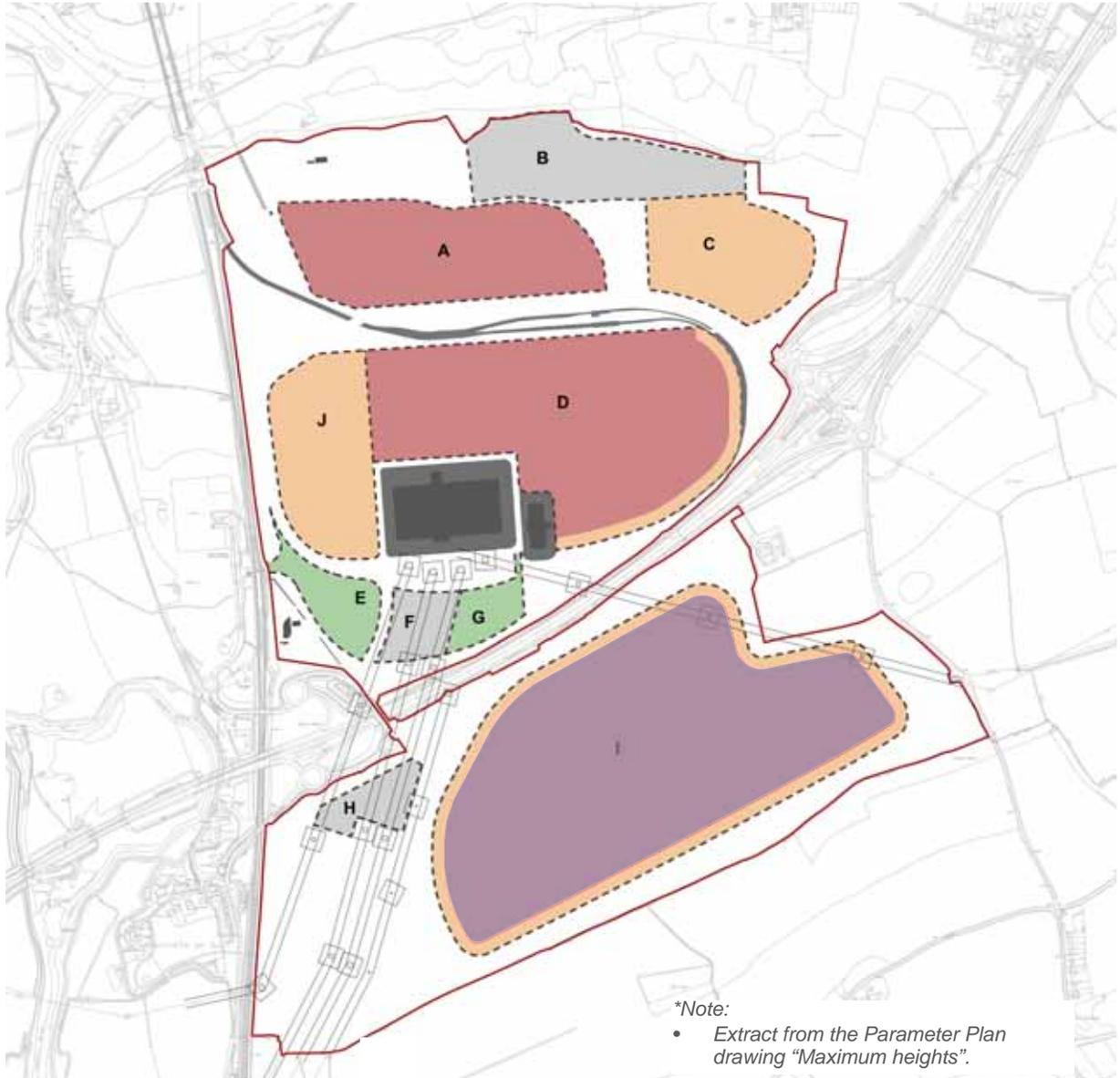


South Loop Section C-C



Building Heights and Design

This plan establishes maximum building heights across the site.



- | | | |
|--------------------------------|--|--|
| LDO Boundary | Up to 20 m ridge height from Finished floor level ** | Use restriction does not allow buildings. Maximum building height not applicable in these areas. Any car parking in these areas should be at surface level only. |
| Existing, fixed plots | Up to 30 m ridge height from Finished floor level ** | |
| Pylons | Up to 40 m ridge height from Finished floor level ** | |
| Existing retained freight rail | Up to 30 m ridge height from Finished floor level ** except where meets the exception in BH 2. | |

Principles for compliance

| Ref | Design principle | Key Criteria |
|------|--|--|
| BH 1 | Building heights. | 1. All buildings must comply with the heights stated on the 'Building Heights' diagram on page 20 relevant to each respective plot. |
| BH 2 | Plot I set back and building heights. | 1. Within 30 metres of the perimeter of Plot I, maximum building heights should not exceed 30 metres (from finished floor level FFL). Elsewhere within Plot I, maximum heights should not exceed 30 metres (from FFL), unless it is demonstrated to the Council that this is necessary for the proposed use, there are no reasonable alternative solutions and the building has been designed to minimise its visual impact beyond the Site. In which case, any increase in building heights should be limited to a maximum of 20% of the plot area and not exceed 40 metres in height (from FFL). |
| BH 3 | Chimneys and Flues. | 1. All development including tall chimneys and flues that exceed the maximum height of the plot should include evidence to demonstrate that: <ul style="list-style-type: none"> - They are essential to the proposed use and there are no alternative solutions; and - They have been designed and located to minimise their visual impact beyond the Site. |
| BH 4 | Landmarks which celebrate the transformation of the site to a centre for green and carbon energy and focal points. | 1. A taller building (within the maximum permitted height for the plot) located at the main entrance, specifically in Plot E, should be considered to create one landmark visible from the station to assist way-finding. 2. Demonstrate that consideration has been given to minimising the impact of building height on Heritage Assets and their settings. |
| BH 5 | Impact on residential amenity | 1. Demonstrate how the building has been designed, located and screened to minimise impacts on the living conditions of residents of Winking Hill Farm, through overbearing, overshadowing and overlooking. |

**Note:*

Refer to the Parameter Plan named: "Proposed Site Sections" for more information.

***Note:*

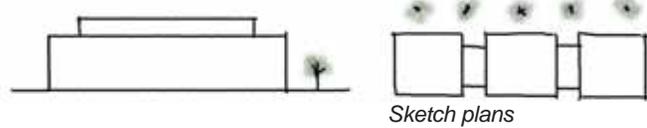
Maximum building heights are quoted in metres above the Finished Floor Level (FFL) of plot, as indicated in Proposed Site Levels drawing (reference RBCLDO-ARUP-ZZ-XX-DR-A-0019).

Architecture

Design Principles to follow:
Principles for compliance

| Ref | Design principle | Key criteria |
|-----|---|---|
| A 1 | Building massing To mitigate the visual impact of the proposal from roads and other spaces outside the development. | 1. Large buildings on the site should be designed to break up mass and visual impact by using contrasting materials and/or creating stepped breaks within elevations. |

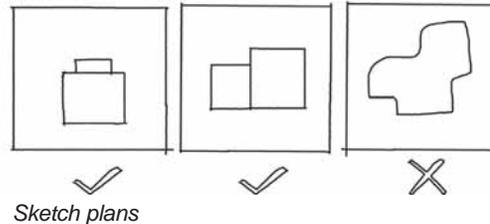
Example of massing break up:



Sketch elevation

| Ref | Design principle | Key criteria |
|-----|--|--|
| A 2 | Geometry Provide simple volumes with clear legibility of overall massing and form. | 1. Buildings to generally follow orthogonal geometry, hard corners and flat roofs. 2. Exaggerated geometry, vaults and curves can be used in limited circumstances to create visual interest. |

Example of orthogonal geometry:

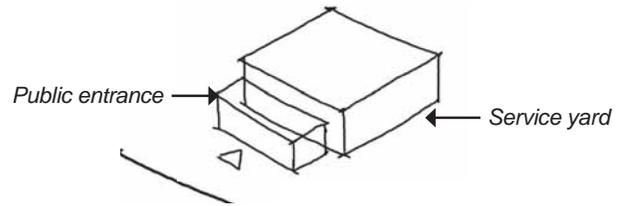


Sketch plans

| Ref | Design principle | Key criteria |
|-----|--|---|
| A 3 | Roofscape To mitigate visual impact from public roads and spaces and maximise opportunities to utilise roofs for environmental benefits. | 1. Roofscape of large footprint buildings to be divided into smaller elements and create a more varied and interesting roofline. 2. Roofs should maximise the incorporation of green roofs to assist with ecological enhancements, water retention and to reduce heat island effects and/or maximise the incorporation of solar PV panels, unless it can be demonstrated that there are practical or operational reasons why this cannot be achieved. 3. Large areas of roofs may be used to accommodate solar PV panels to positively contribute towards the Site's net-zero ambition. However, if solar PV panels are used, they must be designed in accordance with East Midlands aerodrome safeguarding requirements and should also avoid creating a glint/glare distraction to drivers using the adjacent highways. |
| A 4 | Materials and Colours To provide variety in otherwise blank elevations. | 1. Use largely muted colours (e.g. greys or the colour pertaining to a natural material itself) supported by bold use of accents and signage in localised areas only. 2. Different forms or a variety of elevation treatments (e.g. using contrasting materials) should be implemented on otherwise blank facades that are widely exposed to public views. |

| Ref | Design principle | Key criteria |
|-----|---|--|
| A 5 | Separate main entrances from services yards. | <ol style="list-style-type: none"> Principal access point into buildings should face onto the main road frontage with entrances ideally located adjacent to neighbouring entrances. Locate public facing elements on front facades and loading yards to side and rear facades. |

Example of uses allocation according to facades:



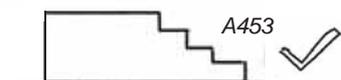
| Ref | Design principle | Key criteria |
|-----|---|--|
| A 6 | Design for climate change mitigation | <ol style="list-style-type: none"> Development should align with Rushcliffe Borough Council's Climate Change Strategy 2021-2030. Demonstrate how smart design, material selection and low-carbon thinking has been embedded in decision making throughout the design process and for the operation of the Site. Provide evidence that the construction and operation of the development will include measures to mitigate the impacts of climate change. A Design for Manufacture and Assembly (DfMA) approach would be supported. Opportunities for installing solar PV should be maximised through the orientation of buildings and/or the orientation of solar panels on roofs. Include measures to limit overheating and solar gain in buildings, through building design and use of blue and green infrastructure. |
| A 7 | Provide adequate daylighting | <ol style="list-style-type: none"> For regularly occupied areas in large, deep plan buildings, consider providing daylighting at roof level and views out for the benefit of workforce wellbeing. |
| A 8 | Zone J | <ol style="list-style-type: none"> Blocks should relate closely to each other and be similar in form, scale and appearance, in a campus formation based on best practice urban design principles around placemaking. Strategic gaps between blocks are intended to provide views and reinforce the site permeability. |

Example of strategic gaps between buildings:



| Ref | Design principle | Key criteria |
|-----|---|--|
| A 9 | Buildings facing A453 To mitigate visual impact and bulk of buildings facing A453 | <ol style="list-style-type: none"> Facades exposed to wider public views, facing the A453 and the East Midlands Parkway, should use articulation, breaks in any single mass and the use of more than one material. For example, vary heights throughout the buildings on facades facing the A453 to minimise the extent of a "blank wall". No building or structure should be located within the fall distance of the highway, unless otherwise approved by National Highways. |

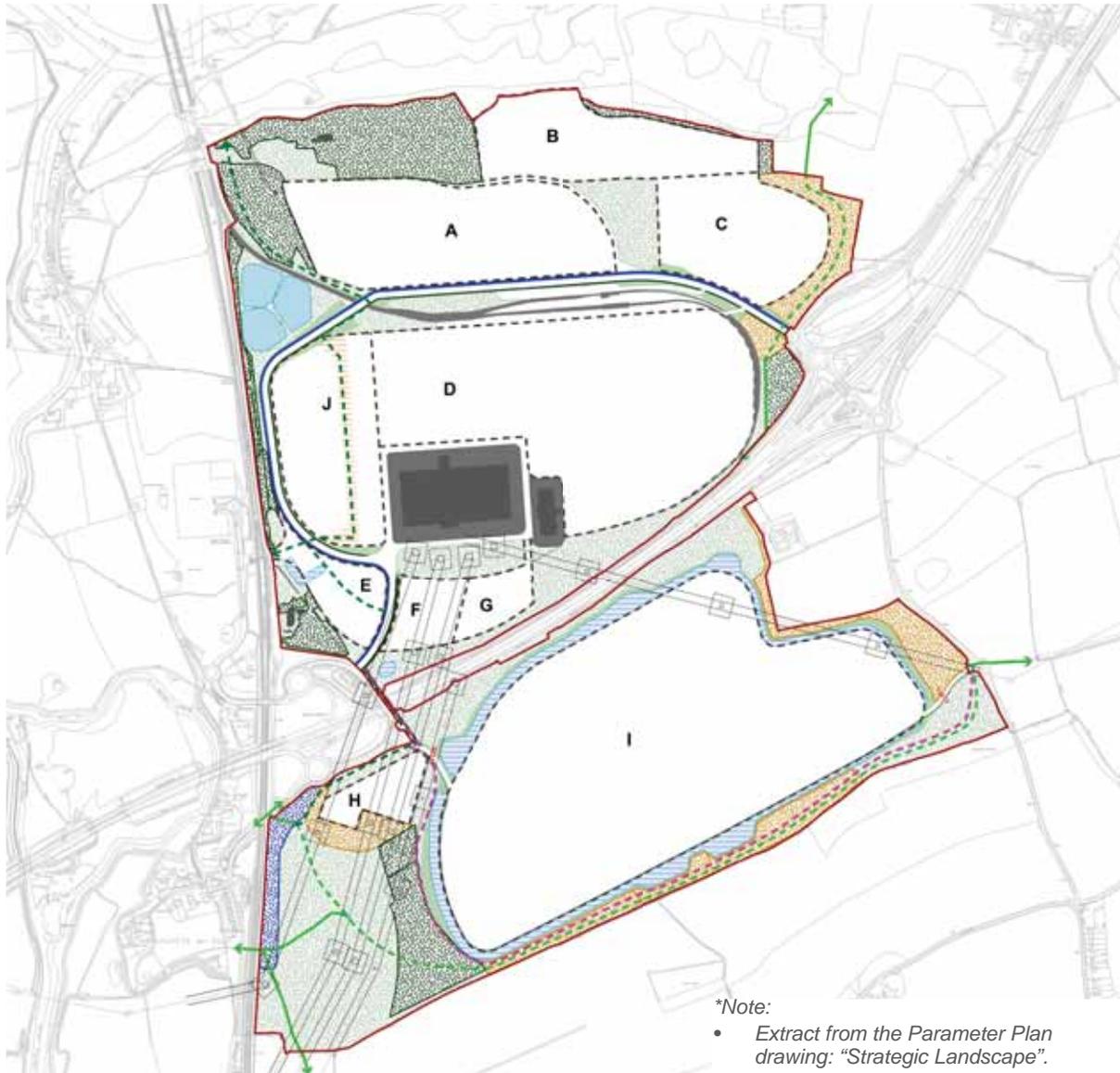
Example of heights and 'blank wall' mitigation Elevation sketches



| | | |
|------|--|--|
| A 10 | Development facing onto East Midlands Parkway Station | <ol style="list-style-type: none"> Buildings and public realm areas should be designed to create a positive and welcoming aspect, providing a sense of arrival and public interface. |
| A11 | Designing out crime | <ol style="list-style-type: none"> The development shall be designed with reference to Secured by Design guidance, "Commercial Developments 2015 V2" or later and, if relevant, with any advice from Nottinghamshire Police Counter Terrorism Security Advisers (CTSA). |

Landscape

The landscape strategy shall work with the surrounding landscape to help incorporate strategic landscape and biodiversity. The Parameter plan and the following principles set out the approach to the sitewide strategic landscape as well as the plots. This includes existing retained features and areas for new or enhanced landscape treatment.



- | | | |
|--|---|--|
|  LDO Boundary |  Existing vegetation required to be retained for visual screening and ecological value |  Proposed tree planting for visual screening and habitat replacement |
|  Existing, retained plots |  Hedgerows and low-level planting along corridor safeguarded for potential future tram |  Area of low-level scrub buffer with gaps to be retained to maintain views from Ratcliffe-on-Soar |
|  Existing Pylons |  Biodiverse planting alongside pedestrian routes |  Retained PRoW |
|  Existing retained freight rail |  Embankments with suitable low-level planting |  Diverted PRoW (Indicative) |
|  Proposed development plots A to J |  Indicative area for potential landscaped pedestrian routes through development plots |  Proposed new cycleway |
|  Existing retained water features | |  Indicative network of pedestrian routes. Exact location to be coordinated with final location of buildings |
|  Proposed water attenuation features | |  Indicative location for potential mammal tunnels |
|  Landscape areas identified for retention and ancillary services. Potential for enhancement or habitat creation | | |

Principles for compliance

| Ref | Design principle | Key Criteria |
|------|--|---|
| SL 1 | Create strong strategic buffer landscape at edges of the site. | <ol style="list-style-type: none"> 1. A strong strategic landscape should be created at the edges of the Site to mitigate landscape, visual, ecological and heritage impacts identified in the Environmental Statement. 2. Maximise buffer density and height where required to protect views from A453, other public roads, Ratcliffe-on-Soar village and Grade I listed buildings (Church of St Winifred, Church of Holy Trinity, and Thrumpton Hall). 3. Landscape and ecological mitigation requirements should be delivered as shown on the Parameter Plan: "Strategic Landscape". 4. Boundary vegetation should create / maintain a linkage to habitat beyond the LDO boundary. 5. Retain and enhance existing vegetation where possible. 6. Landscape design proposals should incorporate pollinator-friendly and climate-resilient species. 7. Carefully incorporate diverted PRow into landscape buffers, balancing walkers' needs without unnecessary disturbance to existing vegetation or wildlife. |
| SL 2 | Maximise opportunities to integrate biodiversity. | <ol style="list-style-type: none"> 1. The loss of priority habitat should be avoided as far as possible. Ensure that all opportunities to connect habitats through the site are introduced. 2. Integrate new areas of habitat and/or introduce enhanced biodiversity measures into proposals, including for plot boundary treatment and for open areas within plots. 3. Integrate deciduous woodland and calcareous grassland into proposals where possible. Consider clustered tree and shrub planting with margins of taller grasses and herbaceous plants to create a mosaic of habitats. Ensure there is space for trees to reach their full maturity. 4. Minimise the illumination of habitat features avoiding excessive lighting and minimise light intensity, creating dark, unlit foraging areas and commuting routes for a variety of species including bats, birds, and hedgehogs. 5. Use native plant species of local provenance in planting mixes with nectar-rich and fruiting plants and ephemeral habitats for invertebrate populations. 6. Install buildings and structures with bat and bird boxes by the eaves of buildings on unlit elevations, where appropriate. 7. Utilise green and brown roofs and living walls where possible to offer ecological enhancement and landscape integration opportunities. 8. Site levels and re-grading work should be designed to achieve a cut and fill balance where practicable to minimise disruption to existing habitats. 9. Suitable measures for the ongoing future management of newly created and retained habitat and landscape areas should be demonstrated. 10. Maximise opportunities for planting and landscaping within areas of car parking. Use of permeable surfaces and SuDS where possible. |

Landscape

Principles for compliance

| Ref | Design principle | Key Criteria |
|------|---|---|
| SL 3 | Ensure that internal streets and spaces have a landscape structure which make them attractive to occupiers and their workforce. | <ol style="list-style-type: none"> 1. Show how existing site features, including mature trees, have been integrated into landscape design. 2. Use tree planting and shrubs and grasses planting to create a good microclimate, visual interest and biodiversity. 3. Structural planting and woodland clusters should be used in key locations to manage visual impacts, internally separate contrasting uses and to screen unattractive uses. 4. Use landscaping to enhance pedestrian routes around the site. 5. Intersperse greenery and trees through car parking area to break up visual impact, manage water run-off and avoid heat island effects. |
| SL 4 | Reserve zone for potential future tram and landscape appropriate to this. | <ol style="list-style-type: none"> 1. Ensure planting within future tram zone is kept free of major structures. 2. Avoid planting with deep roots and trees here. 3. Consider linear features such as hedgerows. |
| SL5 | Ensure drainage features and waterbodies are integrated into the sitewide design. | <ol style="list-style-type: none"> 1. Demonstrate how new and existing swales for surface water drainage and attenuation have been positively integrated into the design as landscape and ecological features. 2. Avoid the use of water features that could encourage wildfowl or other such birds to the Site that might create an aircraft bird strike potential and in accordance with the requirements of East Midlands Airport aerodrome safeguarding requirements. |
| SL6 | Recognise key arrival points within the site and areas where routes come together as 'place-making nodes'. | <ol style="list-style-type: none"> 1. Provide well designed and generous landscaping at key arrival points into the site, along pedestrian routes and at places where routes meet. 2. Design the entrance space from East Midlands Parkway station to be welcoming for pedestrians and cyclists. Routes between the station and into the development should be clear and legible. 3. Provide attractive and inclusive public realm around bus and potential tram stops, with places for people to wait in comfort and safety. |
| SL7 | Ensure sitewide and plot external lighting is designed to provide a safe and attractive environment for site users whilst minimising impacts on the surrounding rural environment, ecological habitats and skyglow. | <ol style="list-style-type: none"> 1. Using low energy lighting, using appropriately directed and shielded lights to minimise overspill. 2. Implement light exclusion zones, where possible, within woodlands and through the green corridors. 3. Avoid intrusive external lighting near habitats and locations where wildlife may be present. 4. Position external lighting at a low height where possible. 5. Demonstrate how an external lighting design complies with East Midlands Airport aerodrome safeguarding requirements. |
| SL8 | Landscaping and Plot Boundaries | <ol style="list-style-type: none"> 1. Where security considerations allow, provide positive landscaping at plot boundaries to enhance the environment of the development. Boundary fencing to be incorporated sensitively. |

Landscape Guidance



1. Maximise on-site biodiversity gain through habitat retention and creation.



2. Integrating landscape features with pedestrian zones and public rights of way.



3. Integrating landscape furniture to encourage gatherings.



4. Integrating landscape features throughout infrastructure corridors.



5. Integrating landscape features with plot functions, such as within car parking bays.



6. Leveraging drainage ponds as amenity features by integrating with pedestrian network.

Illustrative Masterplan

The plans and images below show illustrative masterplans for the site to demonstrate how individual developments could come forward as a series of plots in accordance with the parameters and design principles set out in this Guide and the accompanying LDO plans and documents.

Illustrative Masterplan A

The first masterplan considers a scheme orientated towards large single occupancy, such as gigafactory operators, looking to accommodate all their processes within a single building.



*Note:

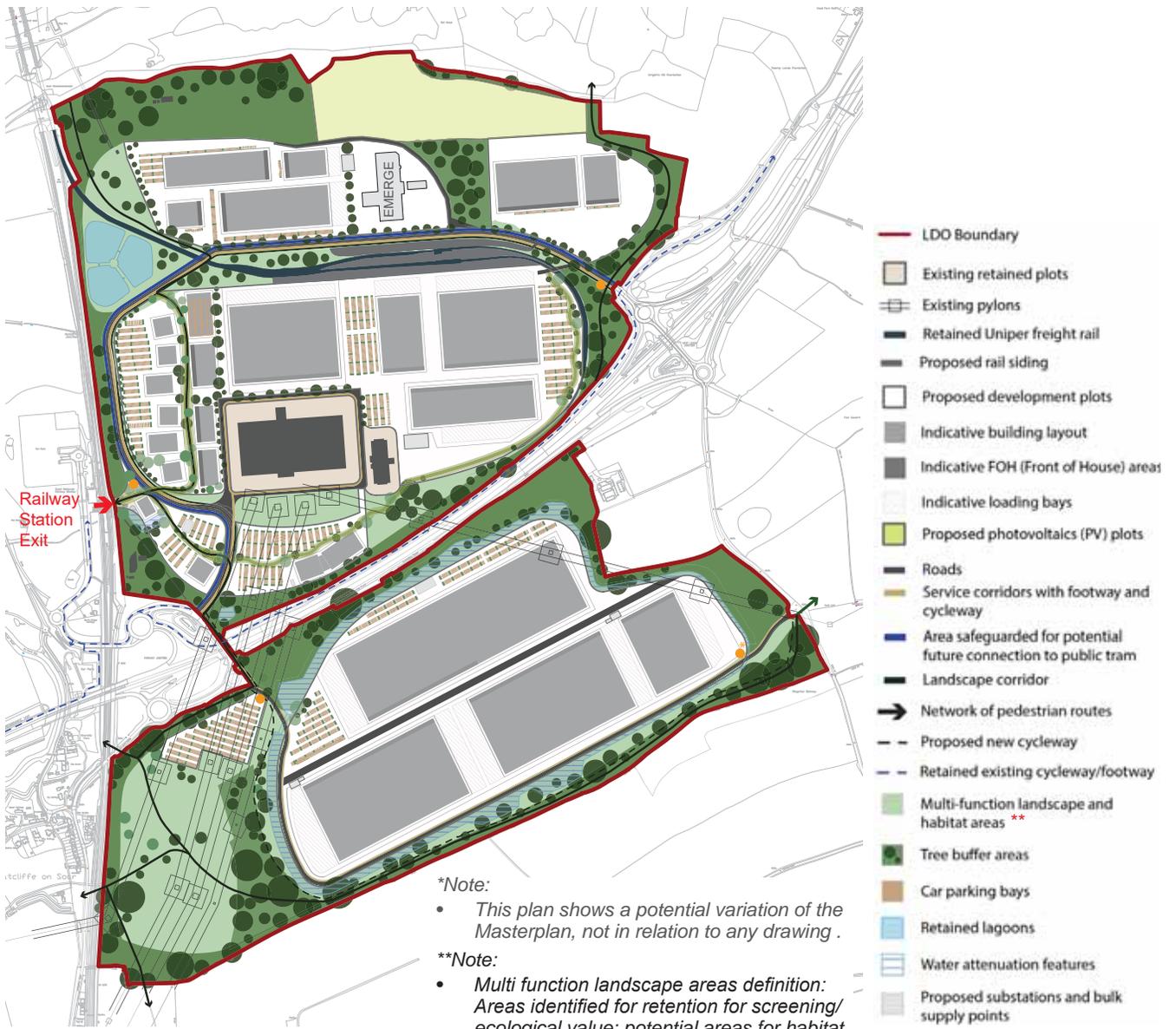
- Extract from "Illustrative Masterplan" drawing.

**Note:

- Multi function landscape areas definition: Areas identified for retention for screening/ ecological value; potential areas for habitat creation or enhancement; proposed planting for screening and habitat replacement; and potential location of ancillary services/utilities (e.g. equipment cabinets and small sub-stations).

Illustrative Masterplan B

The second masterplan scenario demonstrates how the site could be split between a larger number of operators. Both of these masterplans comply with the Design Guide and demonstrate how flexibility can be accommodated within the parameters and design principles.



**Note:*

- This plan shows a potential variation of the Masterplan, not in relation to any drawing.

***Note:*

- Multi function landscape areas definition: Areas identified for retention for screening/ ecological value; potential areas for habitat creation or enhancement; proposed planting for screening and habitat replacement; and potential location of ancillary services/utilities (e.g. equipment cabinets and small sub-stations).

Illustrative Masterplan

Artist's Visualisations

Illustrative Masterplan A





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