East Midlands Gateway
Phase 2 (EMG2)

East Midlands Gateway 2 Design Approach Document

DRAFT FOR CONSULTATION
JUNE 2025

DCO 5.3 / MCO 5.3

The East Midlands Gateway Phase 2 and Highway Order 202X and The East Midlands Gateway Rail Freight and Highway (Amendment) Order 202X

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Design Approach Document

Introduction

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1 Introduction

Scope and content

1.1. This Design Approach Document has been prepared in support of applications for a second phase of East Midlands Gateway Logistics Park (EMG1) which is a Strategic Rail Freight Interchange (SRFI) located to the north of East Midlands Airport. EMG1 is a nationally significant infrastructure development comprising a rail freight terminal and warehousing which is approaching substantial completion. The scheme is known as East Midlands Gateway 2 or EMG2.

1.2. This Document seeks to explain the design approach that underpins the proposals. It begins with reference to the assessment work that has informed the preparation of the proposals and goes on to explain how the proposals have evolved in response to this work and to consultation and how design principles have been established. It then explains the key components of the scheme in terms of the scheme parameters and illustrative masterplans. It outlines the detailed design principles that will inform the detailed design process post consent. It concludes by outlining the approach to the phasing and delivery of the proposals and sets out a design code to guide the future detailed design of each development plot.

1.3. The purpose of the Design Approach Document is to provide supporting information to the applications. It draws heavily on and should be read in conjunction with the other technical and supporting documents that are submitted with the applications.

1.4. For the terms used in this document reference should be made to the glossary in the Guide to the Application (Document DCO 1.3 / MCO 1.3).

Development proposals

1.5. The East Midlands Gateway 2 scheme is a second phase to EMG1 and comprises three interrelated component parts:

Development Consent Order Application (edged red on Fig1.1)

EMG2 Works	Logistics and advanced manufacturing development located on the EMG2 Main Site south of East Midlands Airport and the A453, and west of the M1 motorway. Together with an upgrade to the EMG1 substation and provision of a community park.
Highway Works	Works to the highway network: the A453 EMG2 access junction works; significant improvements at Junction 24 of the M1 (referred to as the J24 Improvements) and works to the wider highway network including active travel works.

Material Change Order Application (edged purple on Fig 1.1)

EMG1 Works	Additional warehousing development on Plot 16 together with works to increase the permitted height of the cranes at the EMG1 rail-freight terminal, improvements to the public transport interchange, site management building and the EMG1 access works.

This DAD covers the EMG2 Works and the EMG1 works. A separate design approach document specifically covers the design approach to the proposed Highway Works (see Appendix 1).

Location and context

1.6. The development is located in the district of North West Leicestershire on land close to East Midlands Airport (EMA). It includes the EMG2 Main Site situated south of the airport together with land required for associated Highway Works to the east and north of EMA along the M1 corridor. It also includes land to the north of EMA within the existing East Midlands Gateway Logistics Park to accommodate the EMG1 Works.

THE EMG2 MAIN SITE AND COMMUNITY PARK LAND

1.7. The EMG2 Main Site and community park comprises land immediately south of EMA and to the east of the village of Diseworth. It is located immediately west of Junction 23A of the M1 motorway and approximately 3 km south of Junction 24.

1.8. The surrounding context to the EMG2 Main Site is heavily influenced to the north and east by the existing commercial development and highway infrastructure. This includes the Airport and associated infrastructure, EMG1 beyond that, the motorway services to the east, Pegasus Business Park and the A453, A42 and M1 roads. To the south the context is more rural except for the urbanising influence of the A42 at the south east corner.

1.9. The EMG2 Main Site (87.6ha) and community park (14.3ha) currently comprises undeveloped, predominantly arable, land with hedgerows and trees dividing the various fields. The topography is generally sloping towards the south and overall has a significant fall of approximately 35m from its northern boundary to its southern boundary. An unclassified single track road with an unbound gravel surface, known as Hyam's Lane, dissects the Main Site from south-west to north-east. It is bound by hedgerows to both sides. A public right of way (footpath L45/1) generally follows the route of Hyam's Lane. There are overhead power cables crossing the western fields in a north to south direction and there is also a drain to the south-east.

1.10. The land comprising the EMG2 Main Site and community park is bound to the north by Ashby Road (A453) with EMA beyond. Donington motorway services and a small copse of trees is located immediately adjacent to the north-east. Wooded areas and an area of mixed scrub surround the services and border to the east. To the south-east lies the A42 and the M1. To the south is Long Holden, another unclassified road which stops at the A42 boundary to the east. To the south-west is the village of Diseworth. The historic core of Diseworth is designated as a conservation area and includes individually listed buildings.

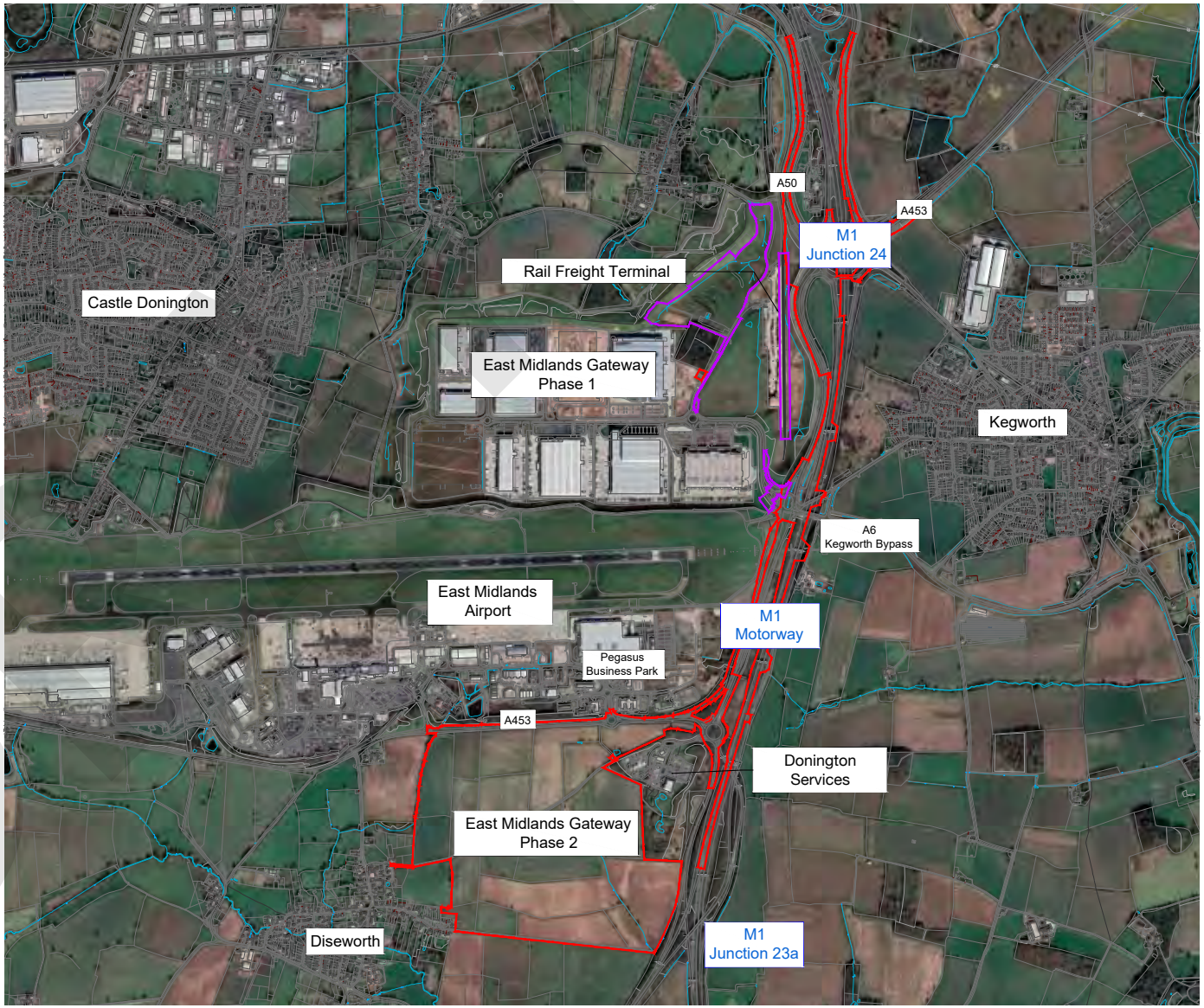

Figure 1.1 Development Location

LAND FOR HIGHWAY WORKS

1.11. EMG2 includes land required for the Highway Works. The principal areas are:

- Along a section of the M1 motorway northbound between Junction 23a and Junction 24, alongside the northbound off-slip to Junction 24 and alongside the A50 where it joins with Junction 24. This section of the M1 comprises a dual four lane carriageway with hard shoulders and a central reservation with crash barriers, and adjoining areas of existing landscaping.

- Widening the A50 eastbound link to Junction 24, to the east of the M1 southbound, from two lanes to three lanes.

1.12. Other areas of land affected by the Highway Works are areas of existing highway around the entrance to EMG1 on the A453, and land alongside the A453 between the Main Site and EMG1 to provide a cycleway.

1.13. The Highway Works to the SRN are a highway NSIP in their own right.

LAND FOR THE EMG1 WORKS

1.14. The EMG1 Works include elements of land within parts of the original EMG1 site. These EMG1 Works comprise larger cranes servicing the rail freight terminal itself, an adjoining undeveloped area extending to 6.08 ha (referred to as Plot 16), and land within and around the existing public transport interchange and site management building at the EMG1 site entrance.

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Site Analysis

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2 Site Analysis

The Design Team

2.1. The evolution of EMG2 has been a collaborative, multi-disciplinary approach with input from a full team of specialist consultants covering a range of topic areas. A core team including planners, master planners, architects and landscape architects have met regularly with Segro's Project Directors, to discuss all aspects of scheme design and finalise the approach to design and scheme parameters as set out in the application submissions. The design process has involved input from the following consultant team:

Consultant	Discipline and Chapters
Delta Planning	Planning
Oxalis Planning	Planning
UMC Architects	Building Design and Masterplanning
BWB	Traffic and Transport, Infrastructure and civils design, Flood risk and drainage, Materials and Waste
iTP	Sustainable travel
Vanguardia/Buro Happold	Noise and vibration and Air Quality
FPCR	Ecology and Biodiversity and Landscape and Visual Impacts
DFL	Lighting
RPS	Cultural heritage and Climate Change
Fairhurst	Site investigation and ground engineering
LRA	Agricultural soils
Utility Connections	Utilities
Savills	Socio-economics, Population and human health, Major Accidents and Disasters

Policy context

2.2. The planning policy context for the development will be set out in detail in the Planning Statement. The main conclusions particularly where they relate to design will be outlined here for ease of reference.

2.3. The National Policy Statement for National Networks (NPSNN) includes design criteria for national networks. The NPSNN is directly relevant to the highway NSIP in the DCO application and the MCO application. It confirms that visual appearance should be a key factor in considering the design of new infrastructure, as well as functionality, fitness for purpose, sustainability and cost. Good design should produce sustainable infrastructure sensitive to place and matched by an appearance that demonstrates good aesthetics as far as possible. It goes on to state that good design should meet the objectives of the scheme by eliminating or substantially mitigating identified problems by improving operational conditions and minimising adverse impacts. Networks should also be as aesthetically sensitive and resilient as they can reasonably be.

2.4. Similar to the NPSNN the National Planning Policy Framework sets out criteria for achieving well-designed places. It explains that good design is a key aspect of sustainable development and requires planning decisions to ensure that developments:

- Will function well and add to the quality of an area over the lifetime of the development;
- Are visually attractive as a result of good architecture, layout and appropriate and effective landscaping;
- Are sympathetic to local character and history;
- Establish a strong sense of place and create attractive, welcoming and distinctive places;
- Optimises the potential of a site to accommodate a suitable mix of development and support local facilities and transport networks;

- Create places that are safe, inclusive and accessible and which provide health and well-being.

2.5. Advice on the approach to the design of nationally significant infrastructure is provided by the Planning Inspectorate in the form of Advice on Good Design, and the National Infrastructure Commission Design Group in a number of publications, including Design Principles for National Infrastructure, and Project Level Design Principles both of which focus on applying design principles using four high-level principles of climate, people, place and value. There is also the Government's National Model Design Code which provides a helpful tool for establishing design codes to help guide a project post consent.

Environment

2.6. The NPSNN recognises that applicants may only have a limited choice in the physical appearance of some network infrastructure but that there may be opportunities for good design in terms of siting and design measures relative to existing landscape and historical character and function, landscape permeability, landform and vegetation.

2.7. The location of the EMG2 Works has been identified in response to the policy and evidence base including its Freeport Designation and proposed allocation in the emerging Local Plan. Its locational advantages close to EMG1 have been critical in its identification. The approach to defining the application sites, its boundaries, scale, form and structure and ultimately the design of the proposed scheme, have responded to this policy base but also to the assessment of the area and to market demand and commercial considerations.

Figure 2.1 Illustrative Landscape Masterplan Context (Wider)

2 Site Analysis

2.8. The applications are supported by an Environmental Impact Assessment (EIA) providing comprehensive information across the full range of technical studies and assessments including:

- Ecology and Tree surveys;
- Landscape;
- Drainage and Flood Risk Assessment;
- Heritage and Archaeology;
- Air Quality and Noise Assessments;
- Lighting;
- Ground conditions and soil assessments;
- Social Economic assessments;
- Climate Change;
- Population and human health;
- Transport;
- Waste.

2.9. Details of and the conclusions reached by the environmental assessment work is set out in the Environmental Statement and not repeated in detail here. The following sections set out the analysis of the land affected drawing on conclusion from the assessment work which has informed the overarching approach to the scheme. Other supporting studies will set out the details of matters which have informed the approach to the design of the scheme including in relation to market demand, and construction management. The assessment and design process has been iterative, with the design of the scheme having responded directly to the assessment work and consultation responses and then ultimately the final Environmental Statement assessing the effects of the defined application scheme.

Opportunities and Constraints - EMG2 Works

2.10. Having regard to the policy, environmental and economic matters, key opportunities and constraints can be identified that have informed the design of the EMG2 Works. These are listed below and illustrated on the plans at figures 2.2, 2.3 and 2.4.

2.11. OPPORTUNITIES:

- Immediate proximity to EMG1 and its successful rail terminal;
- Proximity to EMG1 and EMA and the range of existing public transport services;
- To help maximise the use of rail in the logistics supply chain through additional warehousing (customers) and terminal efficiencies (crane heights);
- To maximise the benefits of the Freeport designation;
- Direct access to the strategic road networks;
- Potential for flexible building sizes including large individual buildings;
- Extensive landscaping to screen the site and contribute to the open space network;
- To deliver biodiversity enhancements;
- To bring about strategic highway improvements to increase capacity on the network, particularly M1 J23a and J24;
- To deliver logistics and manufacturing space to meet market needs;
- To utilise existing topography and landscape features together with new landscaping and scheme layout to minimise noise, visual and lighting effects.

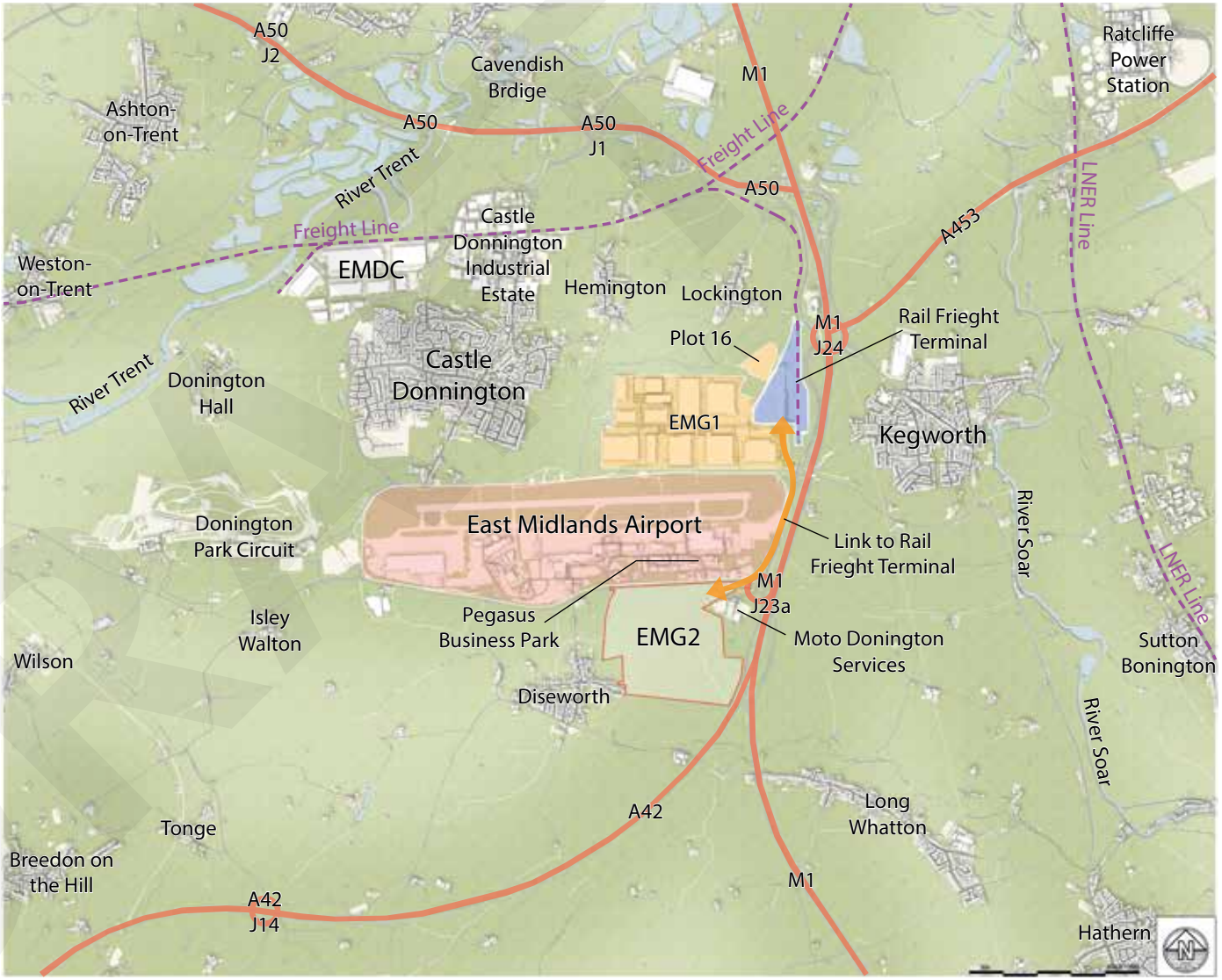

Figure 2.2 Context Plan

2.12. CONSTRAINTS (without mitigation):

- Potential environmental effects on existing nearby properties and open countryside which limits the location of built development and operational activity, and determines key design characteristics;
- Visual, noise, and lighting effects without appropriate screening;
- The need to respond appropriately to ecological features and landscape condition;
- Traffic congestion, consideration of traffic generation to and from the site and potential impact upon local villages and communities;
- Effects on air quality management;
- Public footpaths and rights of way cross the site, including Hyams Lane
- Access from existing A453 trunk road which experiences existing high traffic flows and congestion due to the restricted capacity of the M1 junctions 23a and 24;
- Topography of the site with differences in ground levels across the site;
- Existing trees and hedgerows that are present on the site and adjacent areas;
- Existing wildlife and habitat areas within the site.

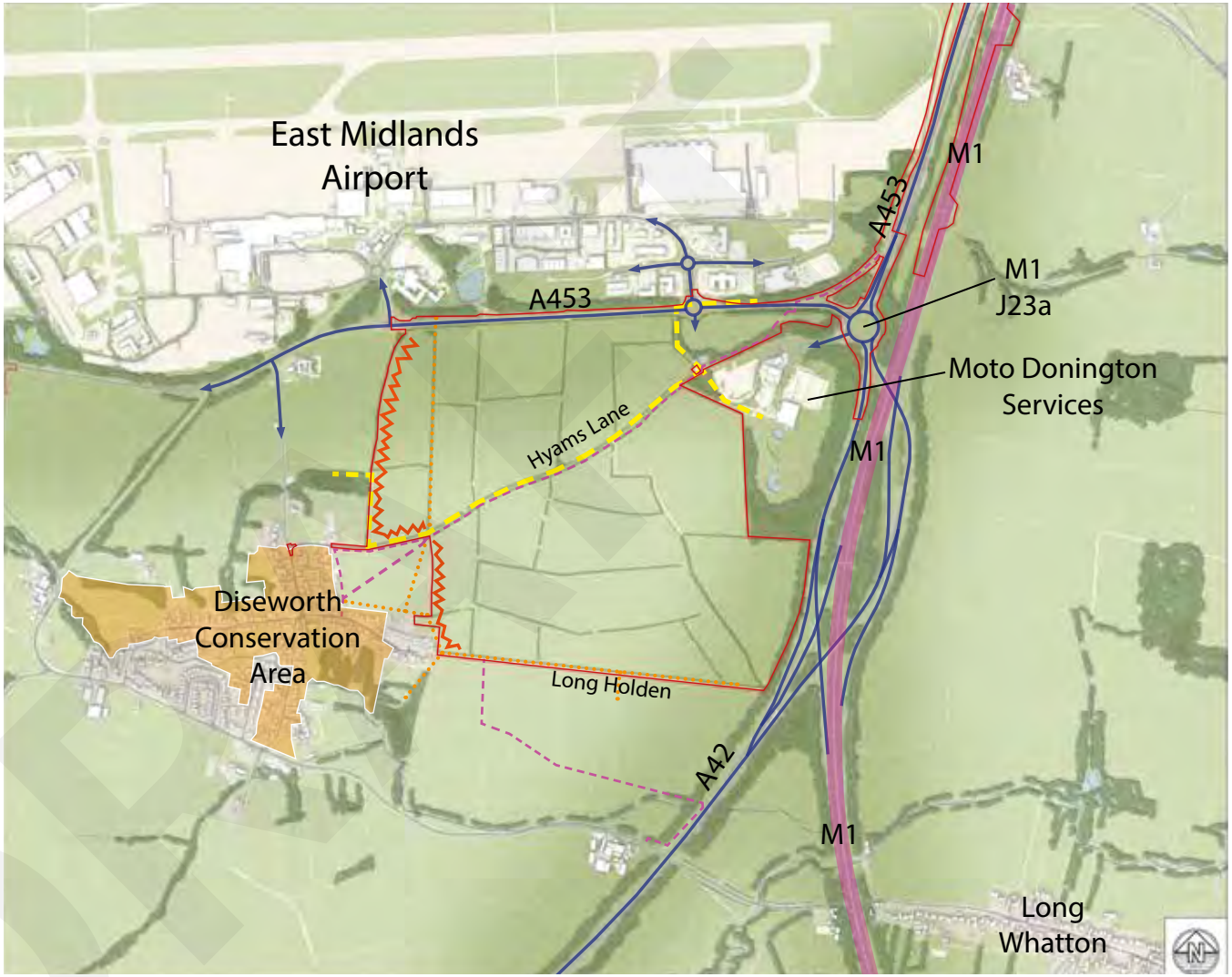

Figure 2.3 Constraints Plan

OPPORTUNITIES

2.13. Concept design layouts have been developed responding to the constraints and opportunities, as described above and having regard to guidance and policies. From these conceptual schematic layouts the design has evolved to establish the parameters for development at the site, identifying the site potential and establishing the extent of suitable and sustainable development for the site.

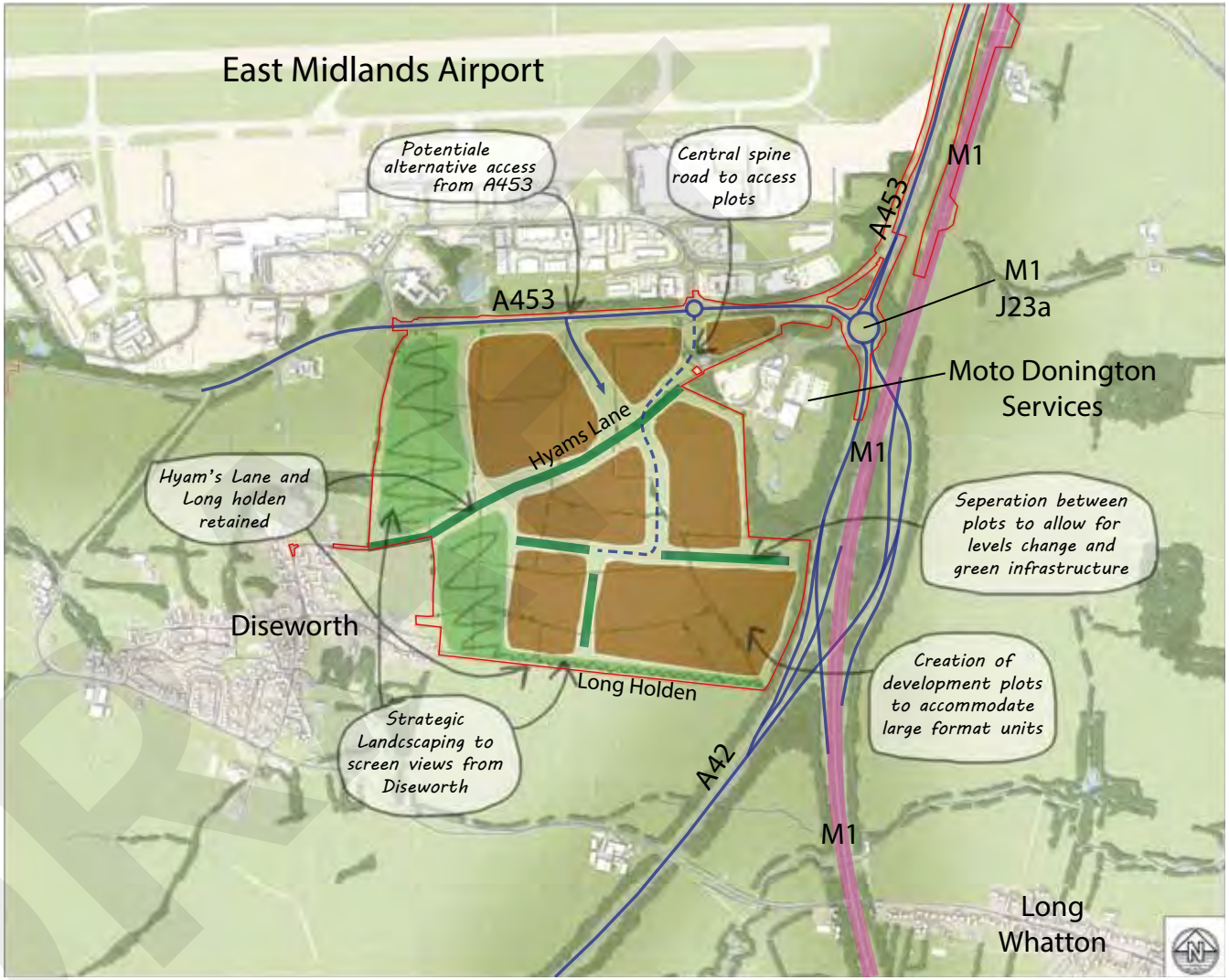

Figure 2.4 Opportunities Plan

Opportunities and Constraints – Plot 16 (Part of EMG1 Works)

2.14. The assessment and early masterplanning of EMG1 was undertaken over a number of years with the main structure of the scheme being developed in 2010. From then the approach to the scheme responded to assessment work, consultation and scheme evolution. A key part of the scheme evolution revolved around discussions with HS2 limited who began to propose a line for HS2 from Birmingham through the East Midlands northwards.

One of the proposals was for the line to pass under EMA and emerging in the centre of EMG1 scheme. Through discussions with HS2 limited the tunnel was proposed to be extended so that the HS2 line would emerge in the north eastern part of the EMG1 site – roughly where plot 16 now lies.

In order to accommodate this potential infrastructure proposal the earthworks were proposed to be amended with the earth bunding move northwards and westwards in this location. The evolution of the scheme at this time can be seen in the evolving masterplans below from 2012 to 2013.

2.15. The proposed line of HS2 was subsequently amended so that it ran south of the Airport and east of the M1 west of Kegworth. The area of Plot 16 was specifically masterplanned so that it was not essential for strategic landscape or earthworks. It is therefore now considered to be a suitable location for additional built development. The existing earthworks to its north and northwest can be retained as developed and landscaped, and the woodland to its south fully maintained.

Figure 2.5
Illustrative Masterplan June 2012

Figure 2.6
Illustrative Masterplan October 2013

2 Site Analysis

Scheme vision

2.16. The overarching vision for the EMG2 Works is to establish a successful, nationally significant, extension to the EMG1 Strategic Rail Freight Terminal, facilitating investment, job creation and economic growth and greater use of rail in the supply chain.

2.17. The scheme will be well landscaped, with its effects on the environment and local communities minimised and appropriately mitigated. The quality of landscaping and building design will create a sense of place appropriate for a commercial scheme of national significance. The buildings will be constructed to the highest standards and the scheme overall will enable occupiers to operate on a net zero basis. The capacity of the surrounding road network will be improved and employees will be able to travel to work on a high frequency, high quality public transport system. The scheme will facilitate greater public access to green spaces and the wider network of pedestrian and cycle links will be improved. The scheme will also deliver important and significant uplift in biodiversity.

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Scheme Evolution

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3 Scheme Evolution

3.1. This section sets out how the EMG2 Works and EMG1 Works have evolved from initial identification through the iterative process of scheme development, assessment, consultation and scheme finalisation.

Site identification

3.2. The EMG2 Main Site proposal seeks to respond to the extensive market demand for large format logistics and manufacturing facilities that can be rail served. The proposals respond to the successful delivery and operation of EMG1, particularly its rail terminal, and seeks to integrate with that facility to support economic growth and facilitate the use of rail in the supply chain process.

3.3. The scheme is a direct response to national policy in this regard, which through the NPSNN, strongly supports the growth and expansion of Strategic Rail Freight Interchanges across the UK, and through the NPPF supports the delivery of logistics space to meet identified needs. The scheme also responds to the inclusion of the site as part of the East Midlands Freeport.

Scheme development

3.4. The design approach to the layout and masterplanning of the EMG2 Works evolved in response to the work to analyse and assess the site and has followed an iterative process of engagement, scheme refinement, further assessment, and further refinement.

3.5. The scheme has therefore evolved through a large number of design changes. The key stages of scheme evolution and refinement are explained below through a series of masterplan stages.

Main site scheme evolution

Project Start

Q4 -2019
ORIGINAL CONCEPT MASTERPLAN

Key Design principals:

- Good mix of unit sizes and capacities to accommodate future End User Occupiers
- Green buffer zones along key boundaries
- Green corridors linking wider green spaces
- Active corporate facing office and car park frontages to internal estate roads
- Larger units located to the south of the site
- Hyams Lane partially upgraded in the north-east corner to facilitate estate road access

Q4 -2022
ILLUSTRATIVE MASTERPLAN 26

Design changes from earlier concept plans and ongoing assessment work:

- Zone 7 in the north-east corner added to the proposals together with a new bus terminal
- Hyams Lane retained in-situ and estate road reconfigured accordingly
- Western green buffer space widened and adjacent development zones reduced accordingly
- Pedestrian and cycle connectivity strategy established with new PRoW proposed to improve connectivity
- New Publicly accessible open space proposed in an existing field in the south-west corner of the site
- Units in the south-west corner reconfigured to ensure operational yard spaces are positioned away from the western boundary
- North to south estate road moved centrally to allow for larger units to be positioned on the eastern boundary.

3 Scheme Evolution

Q2 - 2023
ILLUSTRATIVE MASTERPLAN 37

Design changes from previous plans to respond to early consultee comments and ongoing assessment work:

- Western green buffer space further widened and adjacent development zones reduced accordingly
- Hyams Lane crossing arrangement explored with a new elevated highway/footpath bridge over Hyams Lane
- Drainage strategy explored with attenuation and swales proposed to the western and southern boundaries

Q2 -2024
ILLUSTRATIVE MASTERPLAN 60

Design changes from previous plans to respond to early consultee comments and ongoing assessment work:

- Elevated bridge over Hyams Lane replaced with a new at grade level bridleway crossing.
- Unit arrangements reconfigured to adapt to new earthworks model seeking to position unit floor and ridge levels as low as possible.
- Internal estate road arrangement simplified.
- Commitment to providing a no build zone to allow for an increased landscape buffer proposed in the south-west corner of Unit 5a.

Q3 - 2024
ILLUSTRATIVE MASTERPLAN 67

Design changes from previous plans to respond to consultee comments and ongoing assessment work:

- New HGV lay down parking area added to zone 7 in the north-east corner
- Potential secondary access road from A453 omitted and central internal roundabout added to improve traffic flows within the site
- Green buffer zone on southern boundary increased with the width of Unit 1 reducing accordingly

Q4 -2024
ILLUSTRATIVE MASTERPLAN 78

Design changes from previous plans to respond to latest consultee comments and ongoing assessment work:

- Existing network of fields and hedgerows parallel with western boundary retained
- Western green buffer zone moved eastwards to retain existing field and hedgerows whilst maintaining the proposed screening. The adjacent proposed development reduced accordingly.
- The retained fields to become conservation grassland, community orchard and picnic area.
- SUD's features (Dry) incorporated within the existing retained fields with improved public connectivity proposed via informal footpaths through the area
- Commitment to providing a no build zone to allow for an increased landscape buffer parallel the A453 and units 5b and 6 pushed southwards accordingly.
- Units 5b and 6 reconfigured to position an active corporate office and car park frontage to the north facing the A453
- SUD's feature (swales) incorporated along the southern boundary
- Green buffer zone parallel with the southern boundary increase in width with Units 1 and 2 reducing accordingly
- Plot 4 consolidated into one unit with amended access to work with plateaus.

3 Scheme Evolution

Q1 -2025
ILLUSTRATIVE MASTERPLAN 89

Final material design changes from consultee comments prior to public consultation:

- PROW adjacent Hyam's Lane rerouted along Hyam's lane and though site.
- Amenity building added to HGV parking area.
- No build zone expanded to include area north of bus terminal.
- No build zone south of plot 5 removed after being incorporated into landscaping

Plot 16 scheme evolution

3.6. Because of the established context to Plot 16, the opportunities for different deign and layout approaches are limited. The parameters for Plot 16 remain as set out at inception and the changes to the illustrative layout include adjustments to parking, drainage and the position of the office component of the warehouse.

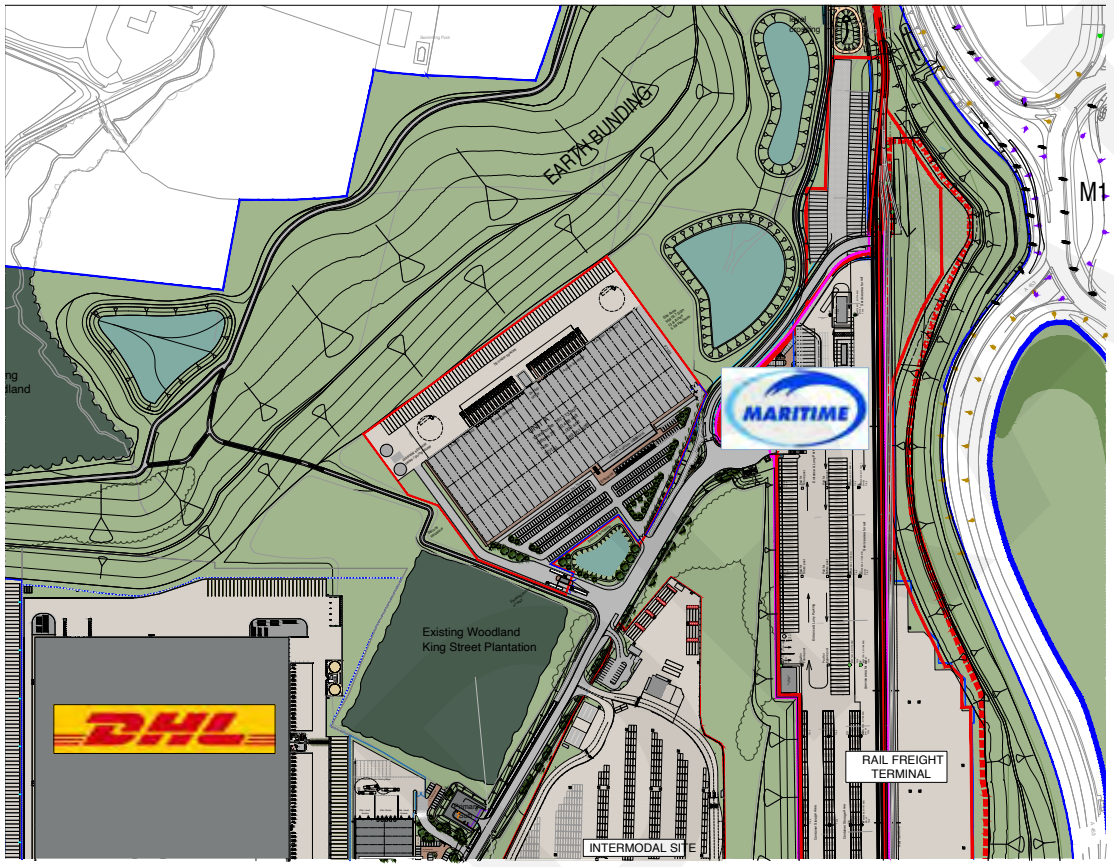

Figure 3.1 2021 Masterplan

Figure 3.2 Illustrative Masterplan

3 Scheme Evolution

Engagement

3.7. To be completed

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Overarching design principles

4

4 Overarching design principles

Policy and operational objectives

4.1. A starting point for the design of large scale, nationally significant logistics and manufacturing schemes, are the commercial requirements essential to meet the demands of occupiers. These requirements are reflected in both the NPPF and the NPSNN. It includes ensuring there is appropriate access to the strategic road network and appropriate proximity to and means of integrating with, the rail network via a rail freight interchange. The need for flexible building plots, including very large scale warehouses is also a key commercial requirement and an important factor recognised by Government policy. In this regard the site size and overarching structure has been informed by the need to ensure that new buildings can be provided which meet the requirements of potential occupiers and that overall the scheme is of a sufficient scale to meet commercial requirements and maximise the benefits of the sites Freeport status.

4.2. Section 2 of this Statement outlines the key environmental factors that have informed the boundaries of and scale, form, layout and design of the proposals. The key issues are outlined as main opportunities and constraints, which when combined with the policy and commercial considerations outlined above and together with the iterative process of design, assessment and consultation has helped to fix the parameters of the EMG1 Works and EMG2 Works.

Climate

4.3. A fundamental aim of EMG2 is to help support the country's move to a more sustainable method of moving goods by locating new nationally significant manufacturing and warehouse space close to an established rail freight terminal where it can integrate with the terminal in a way that enables occupiers to maximise the use of rail in their supply chain process.

4.4. One of SEGRO's strategic priorities, as part of its Responsible SEGRO framework, is "Championing Low Carbon Growth". Emissions associated with the construction phase of both the proposed buildings and infrastructure will be reduced where practicable through low carbon procurement (i.e. using lower embodied carbon materials such as recycled steel, and cement substitutes) and encouraging low carbon construction practices.

4.5. Buildings will also be designed such that they have the ability for occupiers to be net zero in operation. This will be achieved through wide ranging energy efficiency initiatives including targeting an Energy Performance Certificate (EPC) rating of 'A+' and BREEAM 'Outstanding' as part of SEGRO base build specification and on-site installation of solar PV generating renewable energy for occupiers, and enabling decarbonisation in parallel with grid electricity.

4.6. The EMG2 Works will include a range of measures to retain and enhance biodiversity and the existing landscape. Hyams Lane will be retained and around the site landscaped green space will provide the opportunities for extensive planting.

4.7. The area on the western side of the EMG2 Main Site will be retained as green space with a range of measures to improve habitats and provide for public access in a community park. Overall the scheme will deliver a significant net gain in biodiversity.

People

4.8. The EMG2 Works will incorporate a strong entrance and access strategy, with high quality formal landscaped routes providing a strong sense of place and coherent scheme structure.

4.9. The EMG2 Works will include green space around the EMG2 Main Site which provides access to open spaces which can be used by employees on the site and adjacent communities. The overall quality of the built and natural environment will create a healthy and pleasant place to work.

4.10. Regular and on-going engagement will inform the final design of the EMG2 Works, the construction process and future operation. A community liaison group will be established to ensure that the scheme is a good neighbour and benefits for local communities are maximised.

Places

4.11. The combination of landscape design and a coordinated approach to building design will create a clear sense of identity to the EMG2 Works. Building orientation will respond to environmental constraints and maximise the contribution articulated office components can make to key nodes within the scheme. A Design code (see section 7) will be established to guide the future detailed design of each development plan and ensue a co-ordinated approach to the scheme and place making.

4.12. Opportunities will be taken to enhance ecology and deliver a significant gain in biodiversity.

Value

4.13. The final approach to the design of the EMG2 Works will seek to achieve an appropriate balance between maximising economic, environmental and social benefits and managing harm to the environment.

4.14. The EMG2 Works will integrate with existing developments in the area to establish a high quality public transport service that benefits the site and wider area. Improvements to pedestrian and cycle links will contribute to accessibility and encourage sustainable travel.

4.15. The approach to strategic highway improvements will integrate with the potential for further improvements and will in themselves deliver benefits to the capacity of the highway network.

Development parameters

4.16. The design principles for the EMG2 Works and EMG1 Works have evolved from the identification of key policy requirements and commercial demand, the conclusions of the extensive analysis of the sites and the evolution of the scheme in response to consultation and stakeholder engagement. The overarching design principles outlined in this section are fixed through the Parameters Plans and illustrated through the illustrative Masterplans.

4.17. The parameters for the EMG2 Works and EMG1 Works are set out on the Parameters Plans and in the detailed description of development, set out in the following paragraphs.

4 Overarching design principles

Figure 4.1 Parameters Plan EMG2 Works

Key

- EMG2 DCO order limits
- Land not in order limits within which existing telecom mast retained
- Development Area - Zones 1-7
  Including car parking, service yards, buildings, amenity building's, on plot landscaping, roads, paths utilities and infrastructure
- No Building Area
  No buildings in this zone
- Zone 1 and 2 boundary
- Estate Road and zone boundary
- Limits of deviation - Estate Road
- Landscape corridor between development zones with limits of deviation
- Area for development signage for upto 4 signs
  Sign Board - max size (including supporting frame) 7.5m High x 18.3m, Wide x 1.3m Deep
  Totem Sign - max size (including supporting frame) 15.5m High x 4.0m, Wide x 4.0m Deep
- Community Park
- Point of restriction to Hyam's Lane and Long Holden -No public access for motor traffic east of this point
- Hyam's Lane retained and improved west of point of restriction. East of point of restriction to be converted to shared use cycle track.
- Fixed spot heights in metres above ordnance datum, identified along the ridge-line of each length of strategic mitigation mounding +/- 0.5m.
- Between any two consecutive spot heights marked on the ridge, the height of the bund at its ridge will be no lower than the lower of the two spot heights and no higher than the higher of the two spot heights.
- Open Land/Landscaping area to include substation, retained vegetation, mitigation mounding, proposed planting, paths, attenuation & SUDs, retaining walls, retained agricultural land, publicly accessible landscape space and other applicable features.
- Areas within which strategic mitigation mounding is to be provided
- Existing Hedgerow Retained
- Area within which estate road will cross Hyams Lane
- Trees to be retained

EMG 2 Main Site - Development Schedule

Development Zone	Number of Units erected pursuant to the DCO	Maximum amount of floorspace to be erected pursuant to the DCO per zone (m^2)	Finished floor level (in metres above ordnance datum) (Allowable deviation +/- 1.5m)	Maximum Ridge Height (in metres above ordnance datum)
Zone 1	1 to 2	75,000	67.250	91.250
Zone 2	1 to 4	20,000	70.600	88.600
Zone 3	1 to 4	60,000	79.400	103.400
Zone 4	1 to 2	45,000	76.050	94.050
Zone 5	1 to 4	75,000	84.200	102.200
Zone 6	1 to 4	40,000	88.000	106.000
Zone 7	1 to 4	5,000	89.500	96.500
Maximum Total Floor Space*		**300,000**		

* This total floor space is the maximum floor space (excluding mezzanine space) that will be developed across Zones 1-7 notwithstanding that the maximum floor space stated for each Zone combined would exceed this figure i.e. it is the overall floor space cap for Zones 1-7 excluding mezzanine floor space. In addition to this total floor space figure, up to 200,000 sqm of floor space can be provided in the form of mezzanine floor space to units within the development.

Note: Maximum Buildings heights are fixed by the maximum ridge height in metres above ordnance datum compared to the finished floor levels. The finished floor levels shown in the table above can vary 1.5m up or down. For example, if the finished floor levels are constructed at the level shown in the table without variation the maximum building heights in Zones 2, 4, 5 and 6 would be 18m and in zones 1 and 3 would be 24m being the difference between the maximum ridge height specified in the fifth column of the table and the finished floor level in the fourth column of the table.

In addition to the limits set out in the schedule above the following units and floor space are permitted

Bus terminal and office within Zone 6	1-2	500	
HGV parking and amenity building within Zone 7	1-2	500	

Please Note:

- The Maximum ridge height specified excludes any associated fire escape stairwells or key clamp roof top handrails etc.

- all areas specified are gross internal areas (GIA) unless otherwise stated.

EMG2 Works

4.18. The EMG2 Works Parameters Plan (Document DCO 2.5) establishes the following key parameters or design principles for the EMG2 Main Site:

- A maximum of 300,000 sq.m. of floorspace (GIA) overall, with an additional allowance of 200,000 sq.m. in the form of internal mezzanines across the site. The development will primarily comprise logistics buildings with up to 20% of the floorspace capable of being used for advanced manufacturing;
- A series of Development Zones to the north and south of Hyam's Lane where new buildings are proposed to be located together with supporting infrastructure;
- Maximum amount of floorspace for each Development Zone and range of units to be erected within each zone (see Development Schedule on previous page);
- Maximum external building heights for each Development Zone to ensure the overall height of the development is fixed (see Development Schedule on previous page);
- Vehicular access from the A453 via a new arm off the Hunter Road roundabout with a possible alternative principal access (new roundabout) further to the west along the A453;
- A bus interchange terminal at the site entrance which replicates and builds upon the successful sustainable travel strategy for the EMG1 site;
- A secure, dedicated, HGV parking area (of approximately 95 spaces) to meet the needs of HGVs visiting the EMG2 Main Site;
- Structural landscaping areas and buffers including new and retained landscaped features. This includes a significant landscaped earthwork mound on the western and southern part of the site. The landscape areas would include SuDS features;
- Provision of a new estate road serving the Development Zones. 'Limits of deviation' are identified on the EMG2 Works Parameters Plan providing a degree of flexibility for the eventual detailed layout and alignment of this road, whilst still providing an appropriate level of certainty regarding its positioning. A zone is also identified where the estate road will cross Hyam's Lane;
- Retention of Hyam's Lane with its surface upgraded to provide enhanced pedestrian/cycle connectivity through the EMG2 Main Site; and
- A new Community Park located to the west of the EMG2 Main Site.

The Highway Works

4.19. A package of highways works is proposed some of which are an NSIP in their own right. The works include site access, substantial improvements around J24 of the M1 as well as more minor works on the local highways network and pedestrian/cycle route enhancements. The full extent of the highway works are shown on the Highways Plans (Document DCO 2.8) and the Components of the Proposed Development Plan (Document Ref. DCO 2.7 and MCO 2.7) and are described further as follows:

- A453 access junction works to the EMG2 Main Site);
- Hyam's Lane works;
- Works to the M1 northbound;
- Construction of link road from the M1 northbound to the A50 westbound;
- Works to the A50 westbound;
- Works to the link road from the M1 southbound and A50 eastbound to M1 Junction 24;
- Works to the west side of the M1 Junction 24 roundabout and A453 northbound approach;
- Works to the east side of the M1 Junction 24 roundabout and A453 southbound approach;
- Improvements to the EMG1 access junction;
- Construction of the Active Travel Link between the EMG1 access junction and the A453 west of Finger Farm roundabout;

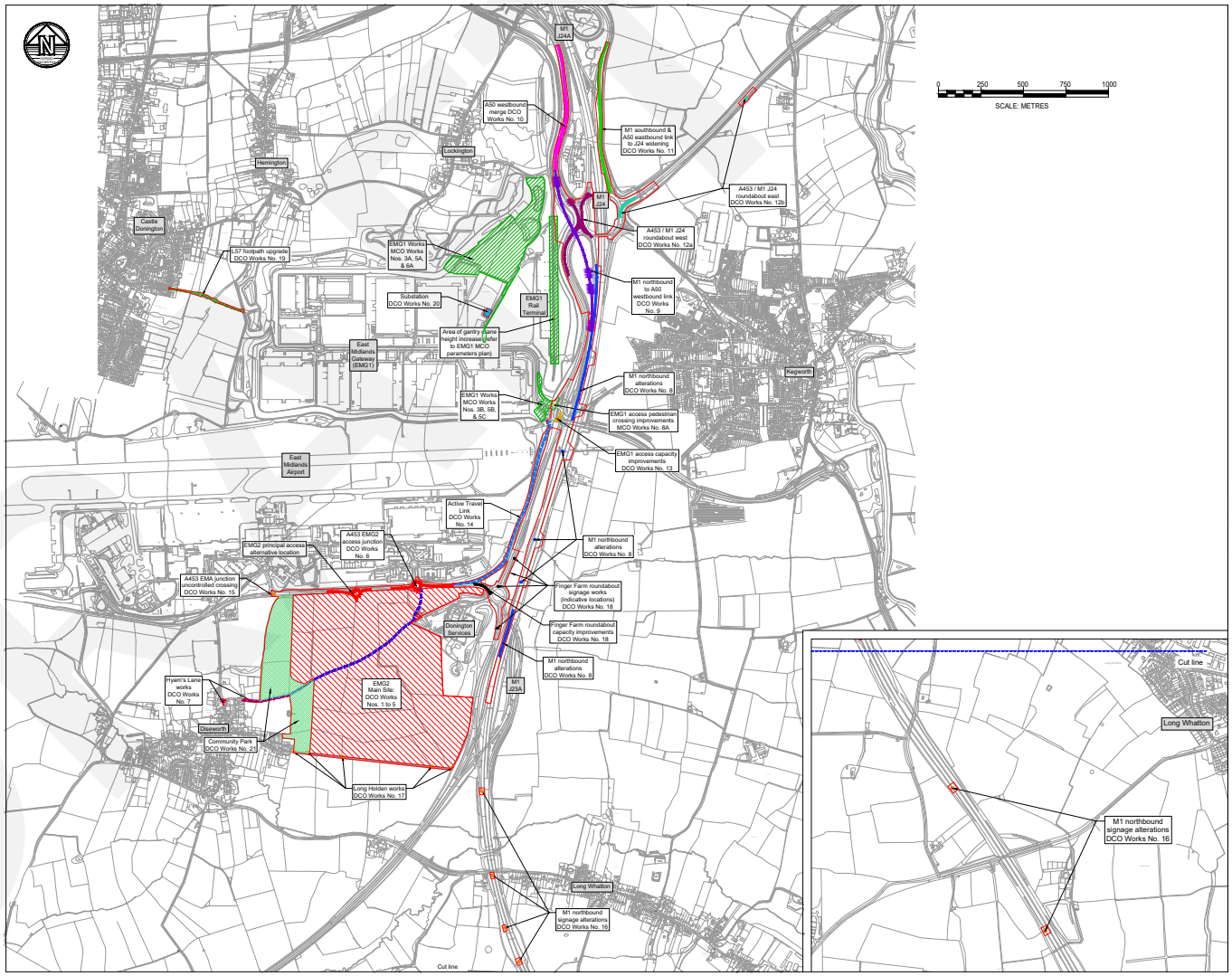


Figure 4.2 Highway Works Plans

- Provision of an uncontrolled crossing of the A453 at the East Midland Airport signalised access junction;
- Works to Long Holden;
- Works to the A42/A453 Finger Farm roundabout; and
- Upgrade to public footpath L57 to a cycle track (DCO Works No. 19).

4.20. In summary the rights of way works are:

- The existing public right of way (PROW L45) that follows the southern boundary of Hyam's Lane will become integrated into the upgraded Hyam's Lane;
- A new footpath from the western end of Hyam's Lane and PROW L45 northwards through the Community Park connecting to the A453 Ashby Road by the Airport entrance junction. This will link to the A453/EMA junction uncontrolled crossing. Currently there is no off-road pedestrian access for this route;
- A new bridleway from the western end of Hyam's Lane and PROW L45 southwards through the proposed Community Park connecting to Long Holden and PROW L48. Connecting these two PROWs will create a valuable new publicly accessible route all the way from PROW L48 to the airport and will create a loop for use by equestrians;
- A new footpath from the eastern end of Hyam's Lane, and PROW L45 southwards connecting to Long Holden via the eastern edge of the EMG2 Main Site, creating a further valuable new publicly accessible route and a circular walk around the southern part of the EMG2 Main Site; and
- Restricting access to Long Holden by changing its status from an all-purpose highway to a bridleway which more accurately reflects its character and will allow access to be controlled.

EMG1 Works
(The Material Change Application)

4.21, The EMG1 Works are shown on the EMG1 Works Parameters Plan (document MCO 2.5) and include the following:

- Construction of a new rail-served warehouse building on land adjacent to the rail-freight terminal referred to as Plot 16 together with associated access and drainage and landscaping (see Development Schedule on this page).
- Alterations to the existing rail-freight terminal to improve its operation and efficiency;
- An expansion of the EMG1 Management Suite by the EMG1 site entrance to cater for the additional demand on management facilities resulting from EMG1);
- Enhancements to the Public Transport Interchange by way of the installation of EV charging infrastructure for buses and provision of a drop-off layby adjacent to the transport hub; and
- Provision of a signalised crossing over the EMG1 exit road approach to the access junction to EMG1 connecting to the drop-off layby.

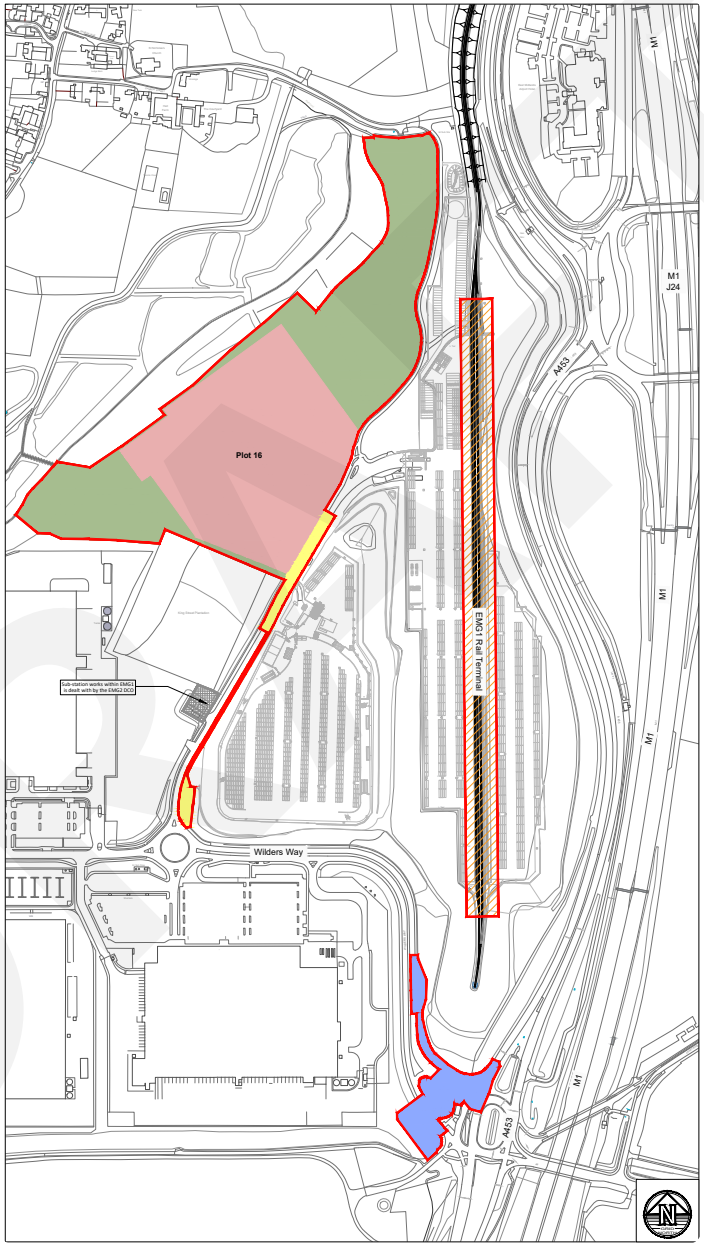


Figure 4.3 Parameters Plan of EMG1 Works

EMG 1 Works - Development Schedule

Development Zone	Number of Units erected pursuant to the MCO	Maximum amount of floorspace to be erected pursuant to the MCO per zone (m^2)	Finished floor level (in metres above ordnance datum) [Allowable deviation +/- 1.5m]	Maximum Ridge Height (in metres above ordnance datum)
Plot 16	1 to 2	26,500	53.000	71.000
Maximum Total Floor Space for plot 16*		**26,500**		

* This total floor space is the maximum floor space (excluding mezzanine space) that will be developed across Plot 16, In addition to this total floor space figure, up to 3,500 sqm of floor space can be provided in the form of mezzanine floor space.

Note: Maximum Buildings height is fixed by the maximum ridge height in metres above ordnance datum compared to the finished floor level. The finished floor level shown in the table above can vary 1.5m up or down. For example, if the finished floor level is constructed at the level shown in the table without variation the maximum building height plot 16 would be 18m being the difference between the maximum ridge height specified in the fifth column of the table and the finished floor level in the fourth column of the table.

In addition to the limits set out in the schedule above the following units and floor space are permitted

Access works (management suite extension)	1	500	

Please Note:

- The Maximum ridge height specified excludes any associated fire escape stairwells or key clamp roof top handrails etc.

- all areas specified are gross internal area's (GIA's) unless otherwise stated.

Key

- EMG1 MCO order limits 47.75 ac 19.32 ha
- Gantry crane height increase (24m Maximum height)
- Development Area Plot 16 Including car parking, service yards, buildings, amenity building's on plot landscaping, roads, paths, utilities and infrastructure
- Plot 16 Access and drainage works
- EMG1 access works, shuttle bus parking, drop off lay-by, footway connection and extended management suite
- Open Land/Landscaping area to include substation, retained vegetation, mitigation mounding, proposed planting, paths, attenuation & SUDs, retaining walls, publicly accessible landscape space and other applicable features.

East Midlands Gateway 2
Design Approach Document

Detailed design principles

5

5 Detailed design principles

5.1. This section helps to explain, using illustrative material, the approach to the design of the EMG2 Works. It is based on the application of the principles established in the EMG2 Works Parameters Plan (Document DCO 2.5) with assumptions on the mix of unit sizes and orientation and detailed landscape design. It is structured as follows:

- Structural landscape design;
- Biodiversity;
- Drainage;
- Noise;
- Lighting;
- Accessibility;
- Rail and road access;
- Building design principles;
- Climate.

The overarching Illustrative masterplan is shown in Figure 5.1;

5.2. The approach to design codes for detailed building design and plot landscaping is set out in section 7.0 Design Code.

Figure 5.1 Draft Illustrative Masterplan Image of EMG2 Works

Structural landscape design

5.3. The existing landscape resource and its context has been considered through the assessment, masterplanning and design process. This has extended from preliminary landscape and visual appraisals through to the production of the guiding design principles and the Landscape Framework proposals. This iterative process has entailed close collaboration between landscape, architectural, urban design, engineering, ecological, heritage and other professionals, including statutory bodies and the local planning authorities.

5.4. An Illustrative Landscape Masterplan has been prepared. This has been developed to help integrate the development proposals into the setting of the site to create an attractive and functional working environment.

5.5. There are a number of key landscape and related green infrastructure design issues to be addressed by the proposals for the EMG1 Works. These can be summarised as follows:

- Positively assimilating the proposed development within the site landscape and topography, including detailed attention to the necessary ground modelling and earthworks proposals and proposed building plateaus;
- Establishing and strengthening connections and green corridors; both within and around the built development and with the surrounding landscape;
- Improving accessibility to the green spaces to be conserved or created as part of the proposals; with opportunities to improve health through informal recreation and physical activity eg walking and cycling;
- Securing and maximising biodiversity interest, through conservation, enhancement and creation of habitats and green spaces;

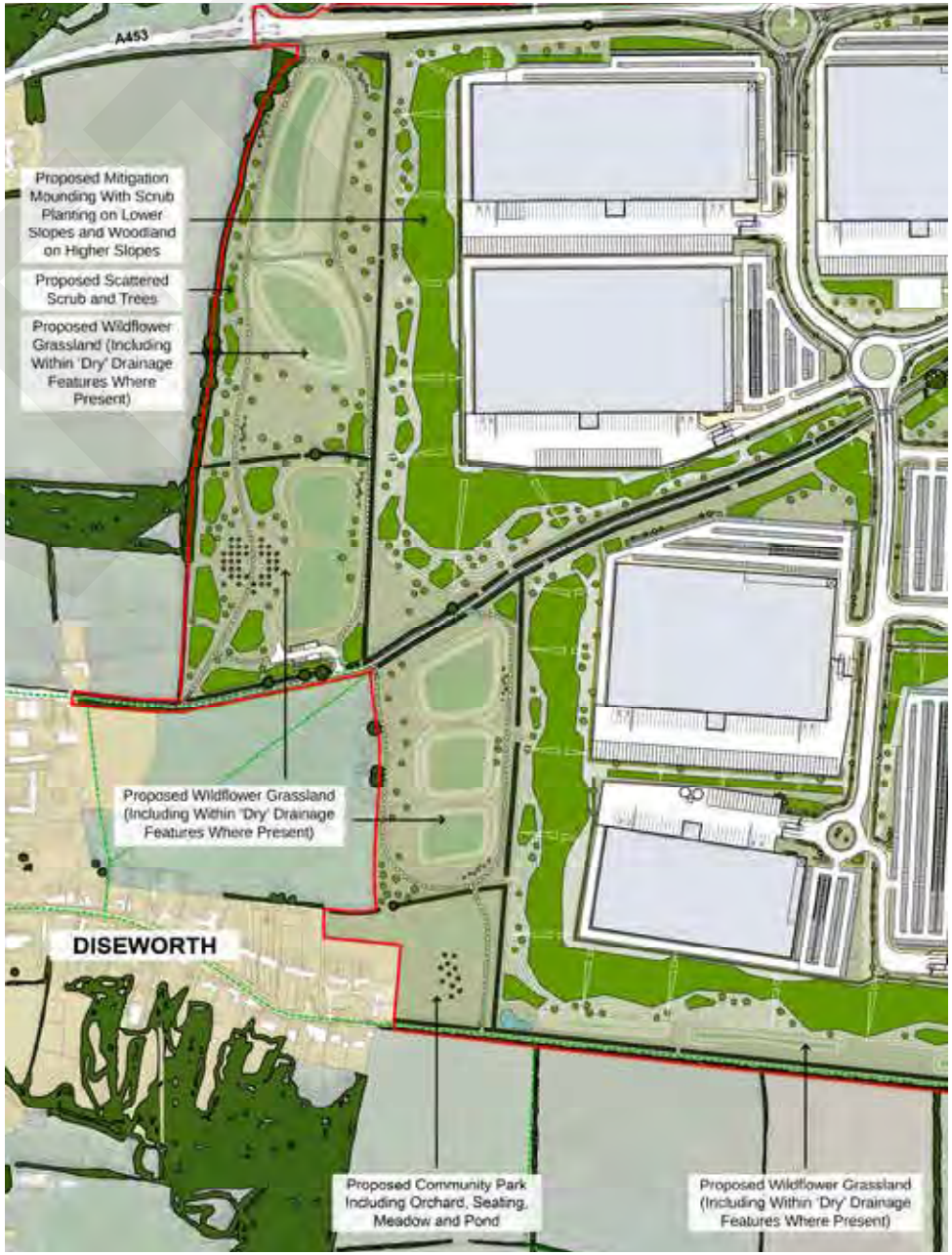


Figure 5.2 Illustrative Masterplan - Western edge of scheme

- Integrating Sustainable Drainage (SUD's) features and measures that will deliver valuable biodiversity and amenity benefits wherever practicable;
- Establishing and managing a significant and robust landscape framework to form an appropriate and cohesive "green structure" to the built development and create a suitable buffer to Diseworth.

5.6. In terms of the approach to Landscape planting, largely native trees and shrubs would be used to reflect those in the existing locality and the design of the wider Landscape Framework. A mix of planting sizes and densities would be adopted to satisfy the differing objectives, principally those of screening and filtering in the short and longer terms and of establishing well balanced woodland and planting habitats.

5.7. All of the landscape areas and features will be managed and maintained in the long term. This will be achieved through the implementation of a comprehensive Landscape and Ecological Management Plan (LEMP) to ensure the successful establishment and continued thriving of the landscape framework proposals.

5.8. The earthworks and landscape strategy is designed to make the views of the EMG2 Main Site as sympathetic as possible. The development is set back from the village of Diseworth with existing field parcels retained and enhanced. The combination of this approach to scheme layout, the existing topography, new earthworks and new woodland planting will establish an effective visual screen from the village of Diseworth. See Figure 5.3

5.9. The majority of existing mature trees and hedgerows along Hyams Lane will be retained, as will those along the A453 and planting along the M1 motorway corridor will be reinforced with new mounding and planting to screen views from this direction.

5.10. The following selection of cross sections help to illustrate how the landscape proposals will help to screen the development.

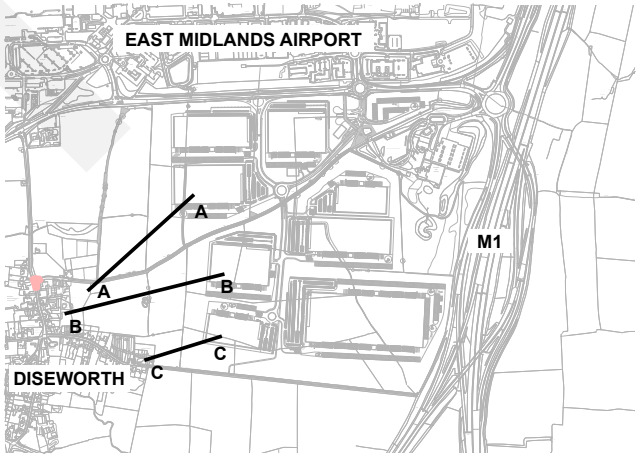


Figure 5.3 Cross section locations

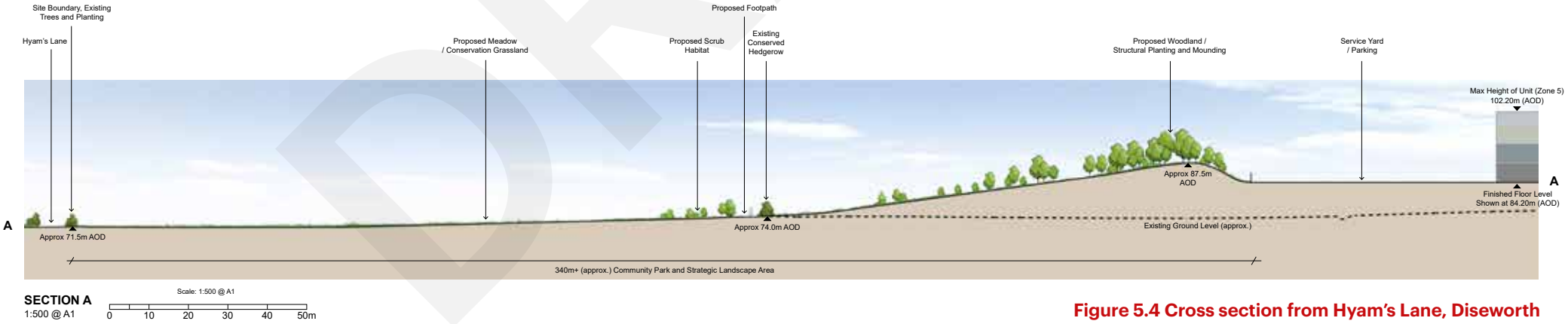
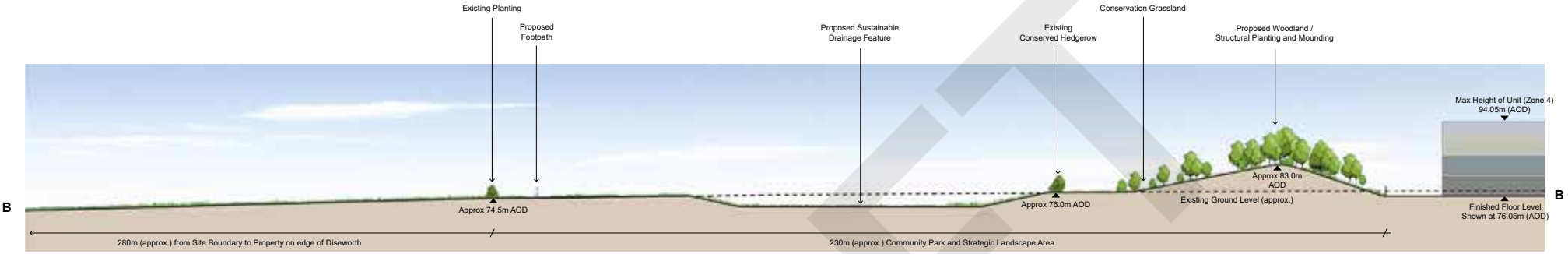


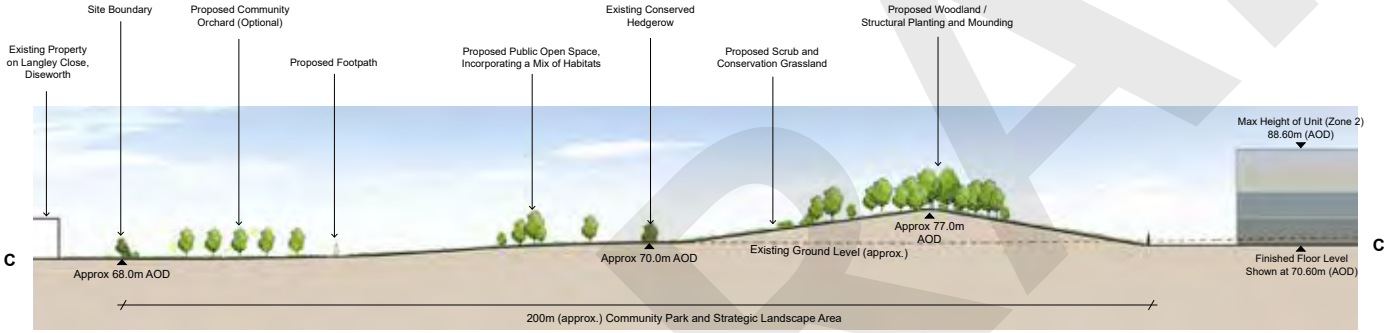
Figure 5.4 Cross section from Hyam's Lane, Diseworth



SECTION B
1:500 @ A1

Scale: 1:500 @ A1
0 10 20 30 40 50m

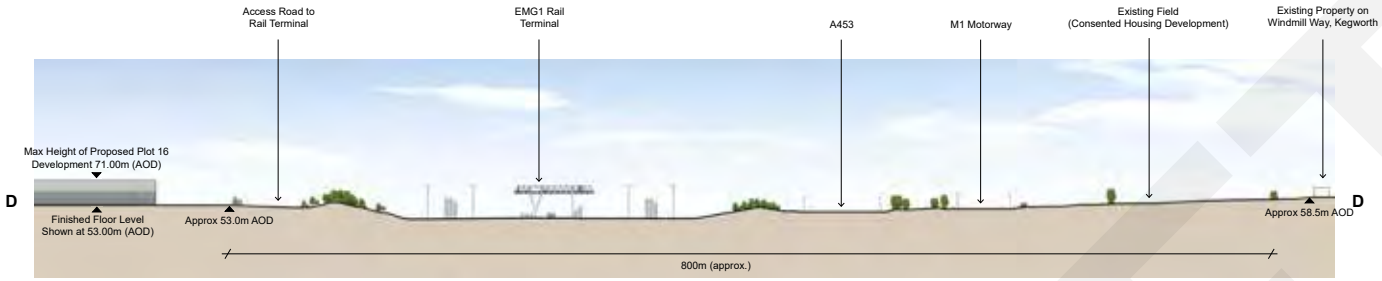
Figure 5.5 Cross section from Hyam's Lane, Diseworth



SECTION C
1:500 @ A1

Scale: 1:500 @ A1
0 10 20 30 40 50m

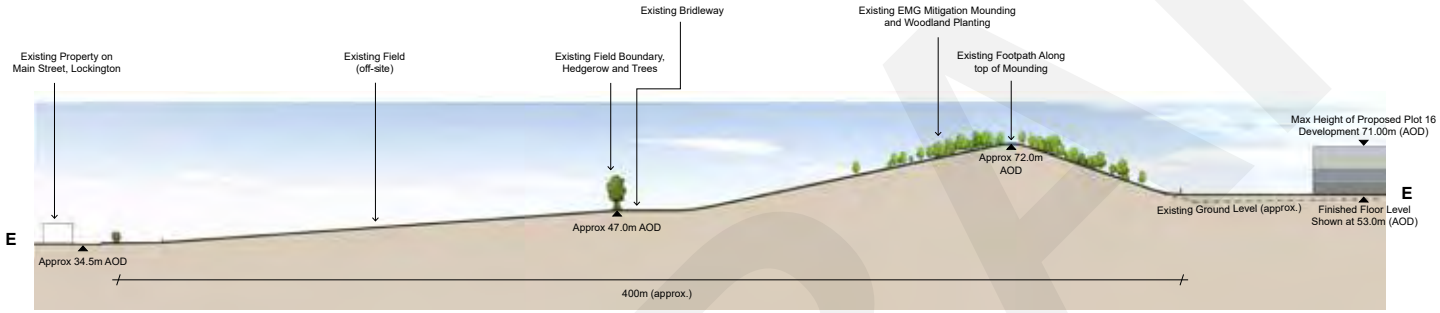
Figure 5.6 Cross section from Langley Close, Diseworth



SECTION D
1:2000 @ A1

Scale: 1:2000 @ A1
0 50 100 150 200m

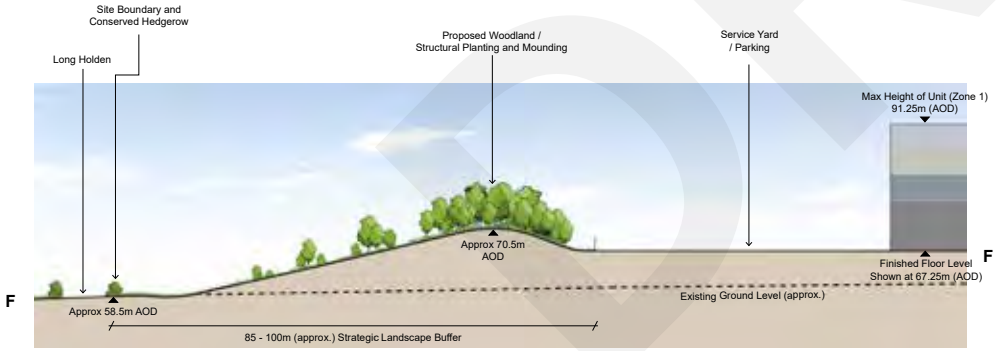
Figure 5.7 Cross section from Windmill Way, Kegworth



SECTION E
1:1000 @ A1

Scale: 1:1000 @ A1
0 25 50 75 100m

Figure 5.8 Cross section from Main Street, Lockington



SECTION F
1:500 @ A1

Scale: 1:500 @ A1
0 10 20 30 40 50m

Figure 5.9 Cross section from Long Holden

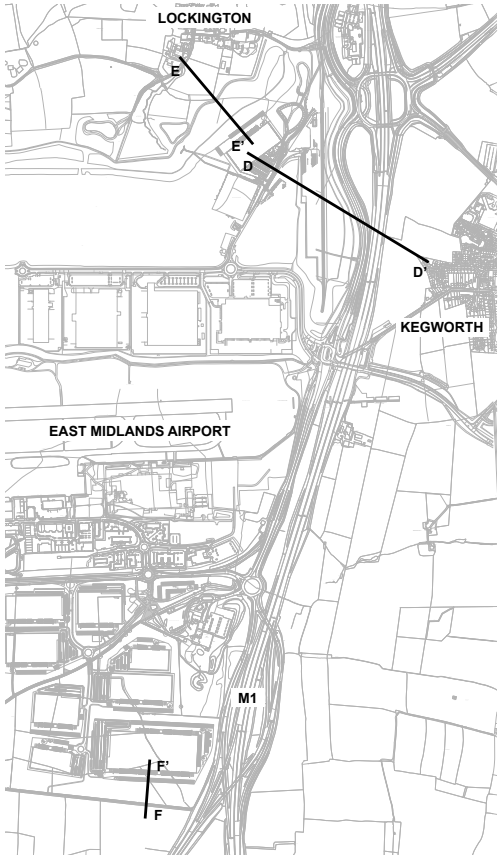


Figure 5.10 Cross section locations

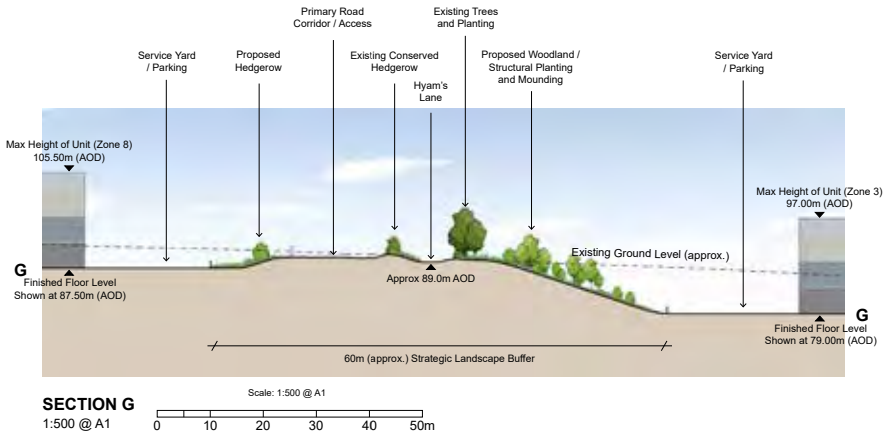


Figure 5.11 Cross section from Hyam's Lane

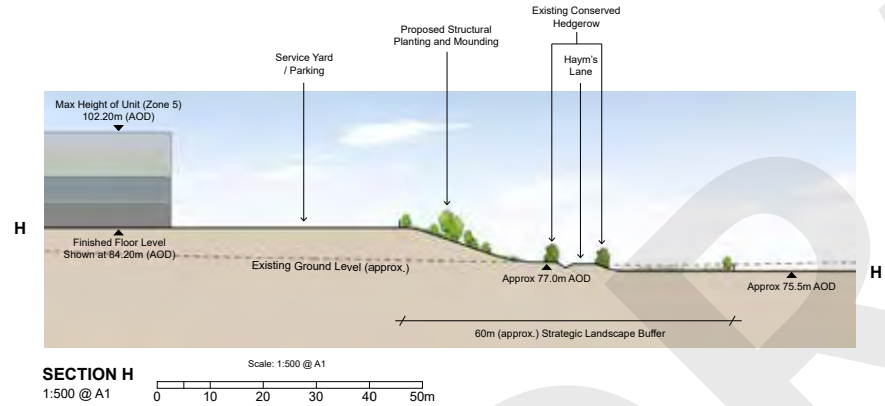


Figure 5.12 Cross section from Hyam's Lane

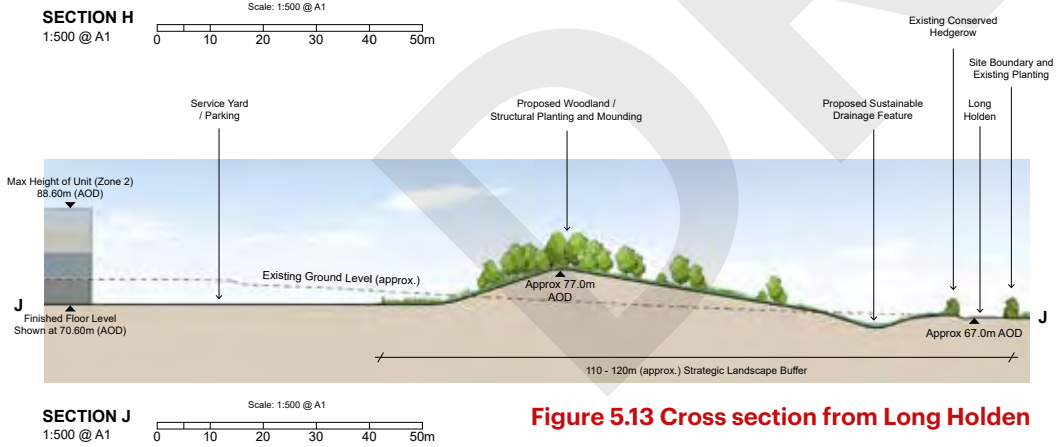


Figure 5.13 Cross section from Long Holden

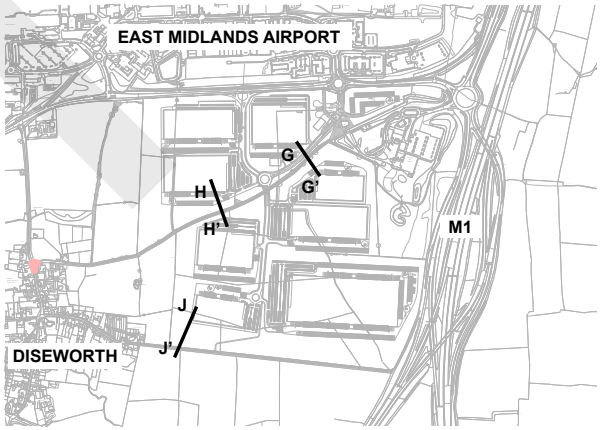


Figure 5.14 Cross section locations

Biodiversity

5.11. Significant landscaping works are to be undertaken as part of the EMG2 Works, and this offers the opportunity to provide new habitats of ecological interest, including new woodland, scrub and hedgerows, new wildflower meadows, and new waterbodies designed according to ecological principles to encourage wildlife.

5.12. New habitats are proposed within the proposed community park adjacent to the western edge of the EMG2 Main Site as well as around other boundaries of the main site and within land between EMG1 and Castle Donington.

5.13. Overall the proposed development provides an opportunity to establish new habitats of nature conservation interest and to deliver net gains for wildlife in the locality.

Detailed Community Park Design

5.14. The EMG2 Works include the provision of a Community Park on the western side of the EMG2 Main Site adjacent to the village of Diseworth. The Park extends to approximately 14 hectares in size and varies in width from 100 to 170 metres wide. It is intended to provide a new community asset, as an area of accessible landscaped space between the village and the EMG2 Main site. The scheme for the community park has evolved following engagement with the local community and a detailed landscape design has been prepared and is submitted for approval.

5.15. The design approach to the Park seeks to provide accessibility for the local community and visitors along with wildlife and ecology enhancements. Key features include:

- Attenuation basins with wetland/ wildflower grassland areas and ecology and habitat enhancements including tree planting with thicket/ scrub planting located along the western fringes of the park.
- Gates/ barriers to provide access control as necessary appropriate to locality.
- Interpretation boards and signage to assist pedestrian navigation.
- Surfaced footways/ rights of ways to provide convenient public access through the park.
- Benches/ picnic tables at appropriate locations to provide recreational facilities along with appropriate bin/ refuse provision.
- Community orchard space with potential for location of outdoor teaching space, providing an educational resource available to Diseworth C of E Primary School or other local schools or community groups.
- Informal parking off Hyams Lane with access control measures and opportunity for expansion if necessary to provide off road parking for visitors to the Community Park and avoid potential additional parking within the village.

The species mixes proposed within the planting and seeding areas are consistent with EMG 1,to compliment these establishing landscape areas.

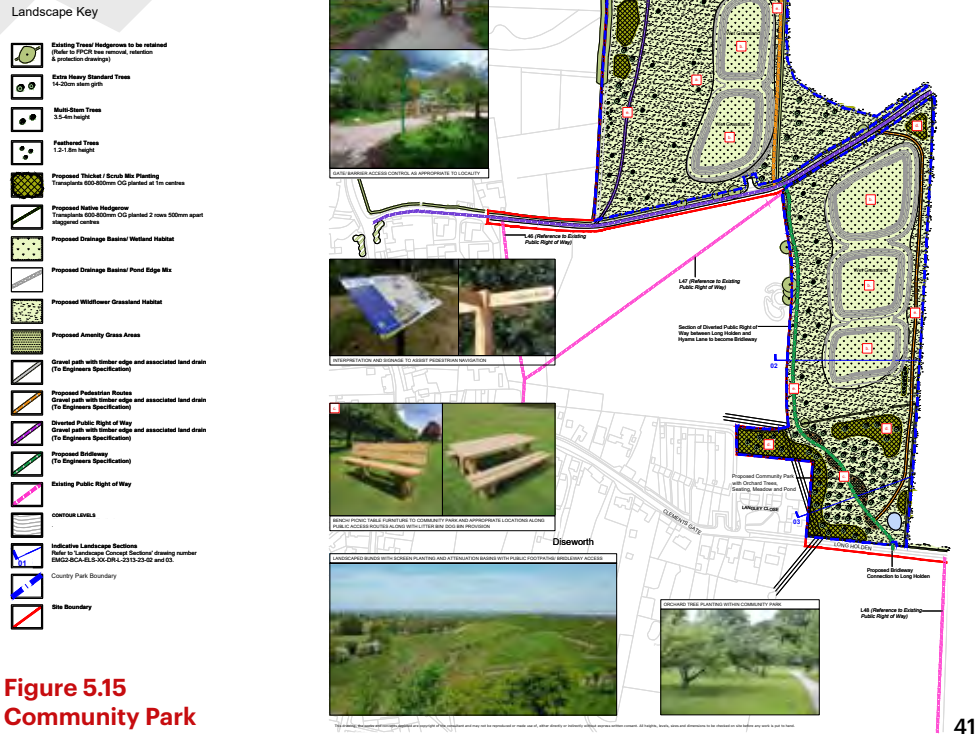


Figure 5.15 Community Park

Drainage

5.16. The drainage strategy will intercept the rainwater falling on the EMG2 Main Site (both during construction and operation), before discharging it to the local watercourse in the south-eastern corner at a rate that mimics the existing runoff rate from the site. In larger storm events this will represent a reduction in runoff, thereby providing a reduction in downstream flood risk. The scheme therefore has the potential to reduce flood risk within Diseworth or Long Whatton.

5.17. The drainage scheme will also be designed to provide water quality treatment to the surface water runoff. This will comprise a series of swales and dry basins along the western and southern boundaries of the EMG2 Main Site.

5.18. Drainage for the EMG1 Works and the Highway Works will for the most part integrate with the existing drainage infrastructure and will follow similar sustainable drainage principles.

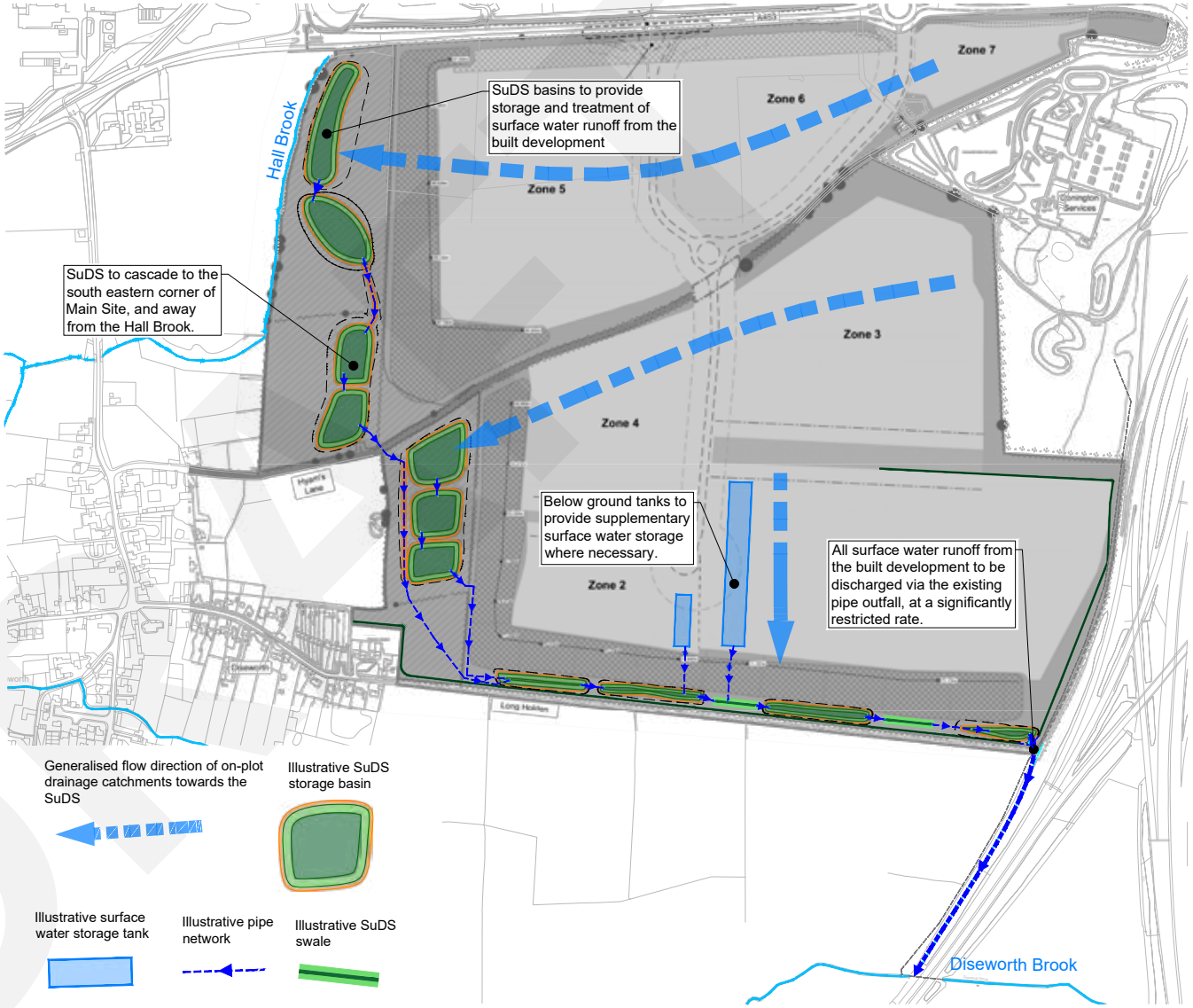


Figure 5.16 Drainage plan

Noise

5.19. Surveys have been undertaken to determine the existing noise and vibration conditions at sensitive receptors around the proposed development. These include locations within and on the edge of Diseworth.

5.20. The noise environment at the EMG2 Main Site and Plot 16 is strongly influenced by existing infrastructure in the area, including East Midlands Airport and Donington Park motor racing circuit together with the highway infrastructure of the A453, M1 and A42.

5.21. The scheme design for the EMG2 Main Site includes inherent mitigation measures built into the development. This includes earth bunding around the sites. The noise assessment shows that these will assist in minimising adverse noise effects.

5.22. There will be an increase in traffic on the local road network associated with vehicles travelling to and from the scheme. When added to the existing baseline flows on these roads, these vehicles are anticipated to result in a relatively modest increase in road traffic noise which is unlikely to be particularly noticeable at most nearby receptors. The modelling results indicate that most receptors are predicted to experience no more than a negligible impact.

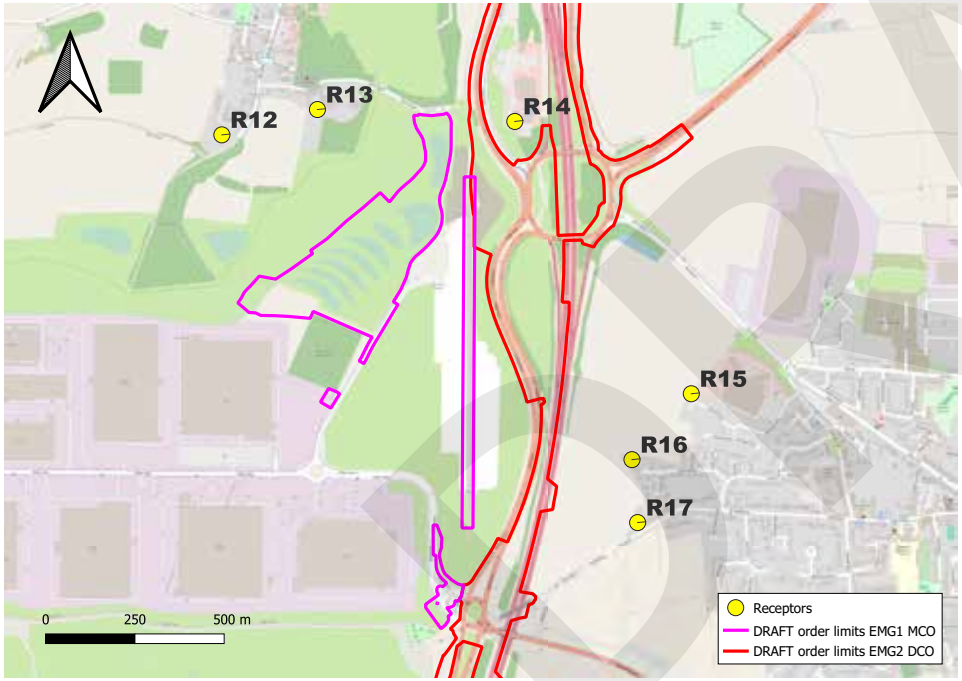


Figure 5.17 Closest noise receptor points to EMG1 Works and J24 Works

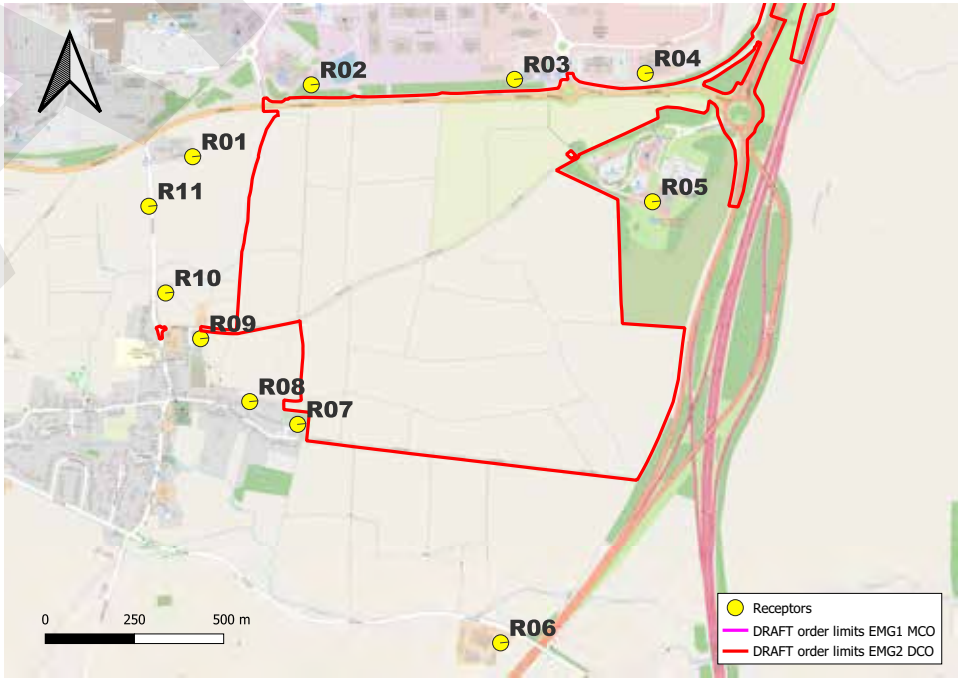


Figure 5.18 Closest Noise receptors to EMG2 Main Site

Lighting

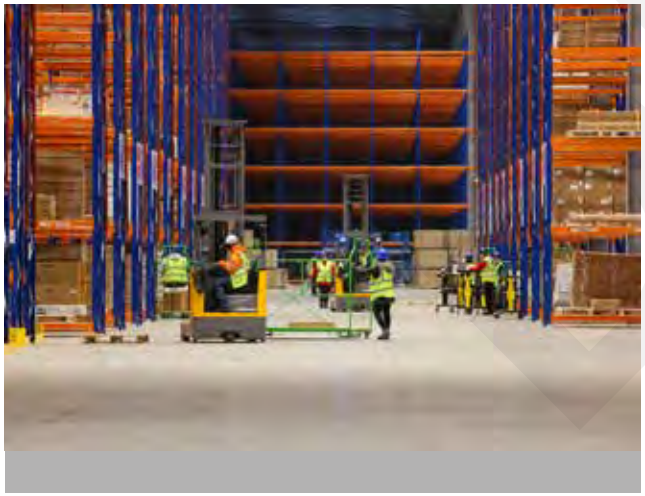
5.23. A lighting assessment and strategy has been undertaken as part of the Environment Statement. The Lighting Strategy will determine the final and detailed lighting installed on the EMG2 Main Site once the position and number of buildings are known. The Lighting Strategy will inform decisions about the placing and type of lighting features installed to ensure that the proposed development will have minimal direct effects on neighbouring communities.

5.24. Part of the assessment process has included an assessment of the existing lighting context and any light pollution evident in views from the surrounding area. This shows that many nearby communities already experience 'sky-glow' and other lighting effects from the Airport and road corridors, and from the villages themselves.

5.25. In accordance with industry standards and recommended best practice the Lighting Strategy is designed to prevent glare and light spill to locations off-site, including upward light that can contribute to sky glow. Furthermore, the landscaping and earthworks strategy for the main site and existing features on the EMG1 work site will screen much of the lighting from being directly visible form outside the site and so will form part of the mitigation for lighting as well as other potential visual effects.

Accessibility

5.26. The sustainable transport strategy that has been put in place at EMG1 has far surpassed expectation in encouraging and delivering a shift away from the private car to other modes of transport. 16% if journeys are made by bus and 22% of journeys are made via car share. The strategy for the EMG2 scheme is to build on the success of the approach already in place at EMG1 together with an approach with integrates with other development proposals being brought forward in the area.



WALKING AND CYCLING

5.27. The aim is to provide the necessary new or upgraded infrastructure and services to facilitate last mile journeys to and within the proposed development by foot, bike or bus. The measure proposed in relation to walking and cycling include:

- The existing public right of way (PROW L45) that follows the southern boundary of Hyam's Lane will become integrated into the upgraded Hyam's Lane;
- A new footpath from the western end of Hyam's Lane and PROW L45 northwards through the Community Park connecting to the A453 Ashby Road by the Airport entrance junction. This will link to the A453/EMA junction uncontrolled crossing. Currently there is no off-road pedestrian access for this route;
- A new bridleway from the western end of Hyam's Lane and PROW L45 southwards through the proposed Community Park connecting to Long Holden and PROW L48. Connecting these two PROWs will create a valuable new publicly accessible route all the way from PROW L48 to the airport and will create a loop for use by equestrians;
- A new footpath from the eastern end of Hyam's Lane, and PROW L45 southwards connecting to Long Holden via the eastern edge of the EMG2 Main Site, creating a further valuable new publicly accessible route and a circular walk around the southern part of the EMG2 Main Site; and
- Restricting access to Long Holden by changing its status from an all-purpose highway to a bridleway which more accurately reflects its character and will allow access to be controlled.

In addition to active travel routes, provisions are being made to provide secure, covered cycle parking at each employment unit (aligning with BREEAM standards) as well as shower and changing facilities.

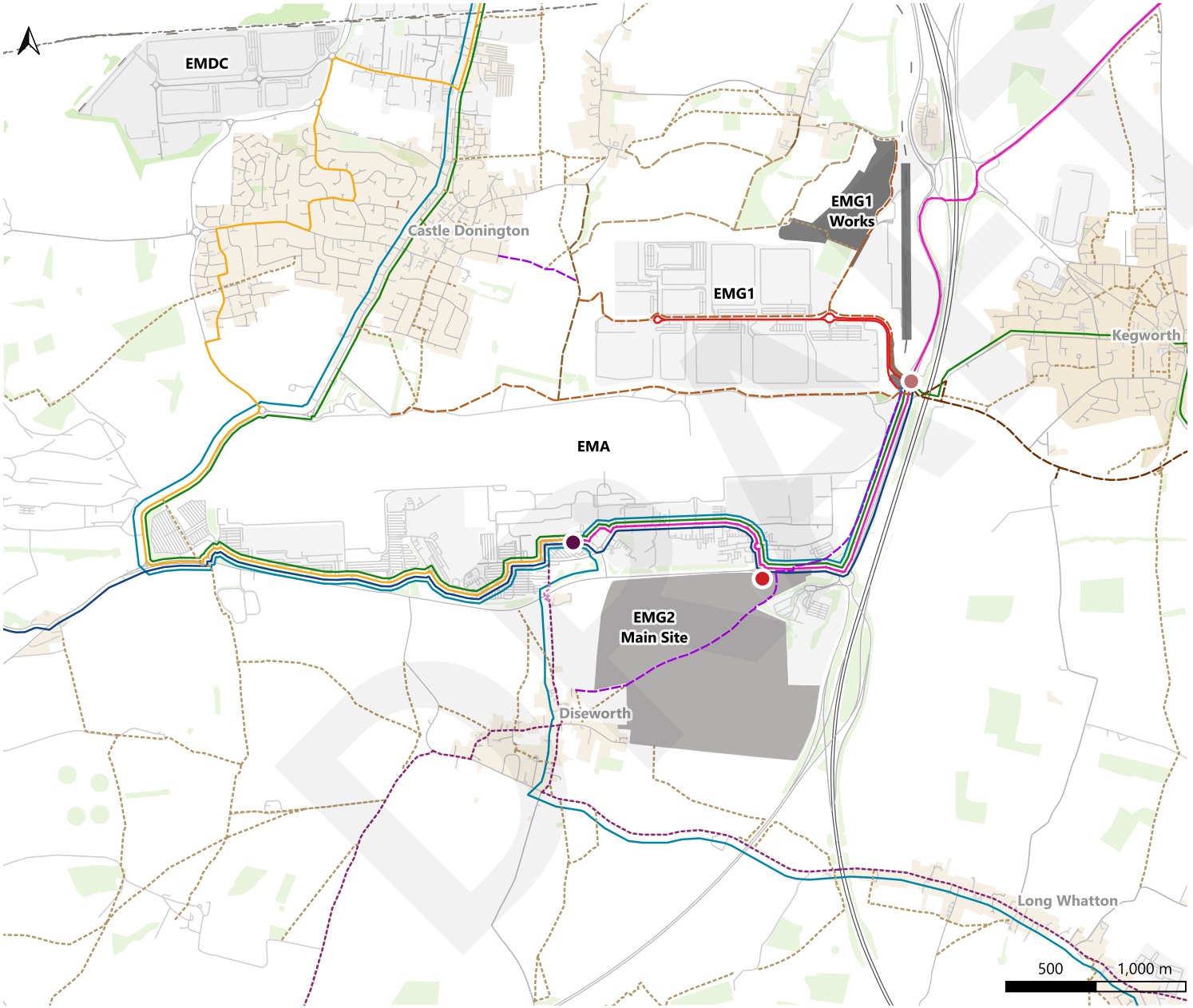


Figure 5.19 Sustainable Transport Plan

Key

Public Transport

- Airway 9
- my15
- skylink Derby
- skylink Express
- skylink Nottingham
- EMG1 Shuttle
- Railway

Active Travel

- Proposed Improvement
- Shared Use Footway/Cycleway
- Private Road Permissive Path
- Quiet Lane
- Public Bridleway
- Public Footpath
- NCN On Road Cycleway
- NCN Traffic Free Cycleway

Developments

- EMG2 Main Site
- EMG1 Works

Interchanges

- EMG1 Interchange
- EMG2 Interchange
- EMA Interchange

* Nottsbus On Demand not displayed on map
** NCN = National Cycle Network

PUBLIC TRANSPORT

5.28. The aim is to provide a network of bus services which directly access both EMG1 and EMG2. The strategy is to:

- provide a purpose built bus interchange at the entrance to the EMG2 Main site to connect the site with local bus services;
- to provide a free electric shuttle bus services within the EMG2 main site, connecting places of work to the bus interchange;
- enhancements to and modifications of existing bus services so they stop at the new bus interchange;
- an extended transport working group (already in operation at EMG1) to coordinate the transport options and ensure bus timetables tie in with the needs of the future development occupiers;

Figure 5.20 Bus Station CGI

OTHER TRAVEL PLAN MEASURES

5.29. Although all employees will be encouraged to use active and public transport modes of travel, it is acknowledged that this will not be appropriate or possible for everyone. For this reason , car sharing and the promotion of low carbon vehicles will also form part of the strategy. This will include:

- a car share club to encourage and facilitate shared commutes between employees, building on the success of the system already in place at EMG1;
- capability for EV charging for at least 20% of all car parking spaces with passive provision to increase this amount in the future.

Rail and road

RAIL

5.30. The rail terminal at EMG1 has been hugely successful. It has grown quickly and capacity of the terminal has been increased by the construction of the eastern container storage area at the terminal scheme together with approval of greater container stacking heights. The increase in container stacking helps the terminal to operate more efficiently and increases overall capacity.

5.31. To align to this greater stacking height an increase in the height of the cranes allowed at the terminal is necessary. Cranes are likely to be required at the terminal as its throughput increases.

ROAD

5.32. The EMG2 Main Site is located on the A453 and in close proximity to M1 Junctions 23a and 24, and the A42. An access to the site will be formed with an additional arm on the existing A453 roundabout together with associated widening of approaches to the roundabout.

5.33. The existing highway network suffers from congestion at peak times. Improvements to the strategic road network are therefore proposed. These include:

- A453 access junction works to the EMG2 Main Site);
- Hyam's Lane works;
- Works to the M1 northbound;
- Construction of link road from the M1 northbound to the A50 westbound;
- Works to the A50 westbound;
- Works to the link road from the M1 southbound and A50 eastbound to M1 Junction 24;

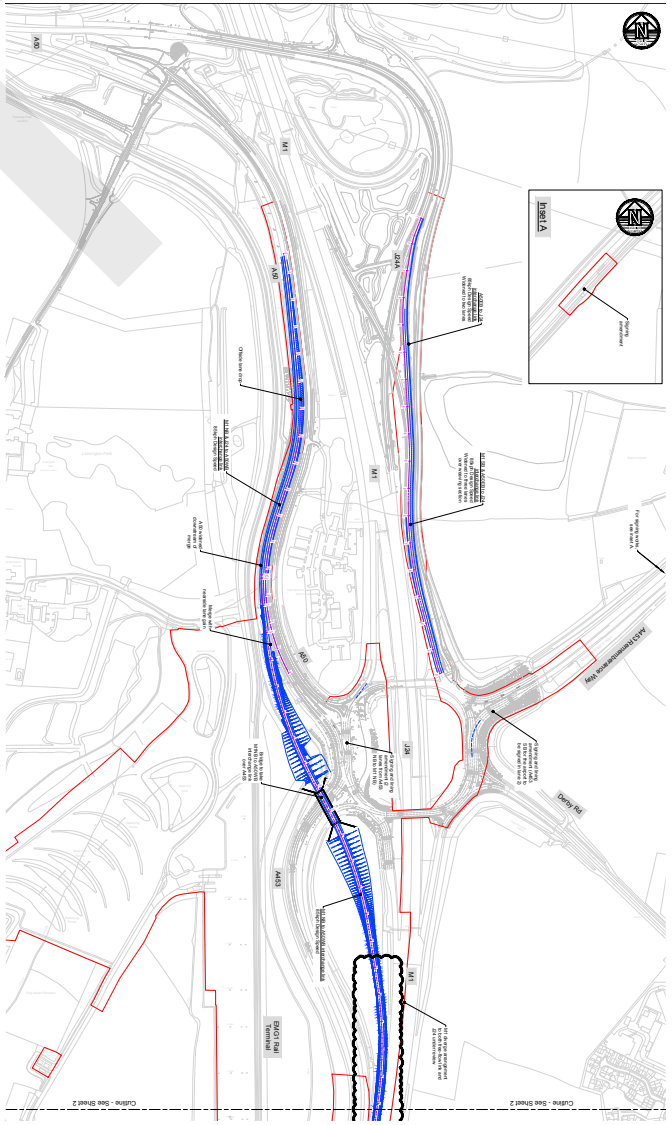


Figure 5.21 Highway Works Plan

- Works to the west side of the M1 Junction 24 roundabout and A453 northbound approach;
- Works to the east side of the M1 Junction 24 roundabout and A453 southbound approach;
- Improvements to the EMG1 access junction;
- Construction of the Active Travel Link between the EMG1 access junction and the A453 west of Finger Farm roundabout;
- Provision of an uncontrolled crossing of the A453 at the East Midland Airport signalised access junction;
- Works to Long Holden;
- Works to the A42/A453 Finger Farm roundabout; and
- Upgrade to public footpath L57 to a cycle track (DCO Works No. 19).

The proposed works will directly mitigate the effects of the application, but they have also been devised to form part of a potential package of wider improvements works to the network which can be delivered if other development comes forward in the area. In this way the scheme does not prejudice the further growth of the area.

5.34. The package of highway improvements will provide betterment to the adjacent highway network providing a reduction in driver delay, improved journey times, and draw existing background traffic onto the strategic and principal road networks. In doing so, traffic flows on many of the surrounding local roads and villages would reduce.

5.35. The design approach to the proposed Highway Works is set out in a specific Highway Design Approach document which is appended to this document as Appendix 1.

Building design principles

5.36. Section 7 of this Document sets out a design code that will guide the detailed design of all on plot buildings. This establishes a cohesive and long term approach to building design and on plot landscaping. The overarching design principles that have informed the design code are:

- the layout and orientation of each building should contribute to a sense of place and identity, including safe access and clear wayfinding through the site;
- buildings will be visually recessive to reduce the visual effects from long views into the site;
- offices, reception and stairwells should form strong and prominent features that animate and add interest to the public realm. Glazing areas should be maximised and further interest provided by architectural detailing and use of materials;
- buildings should avoid heavy shadowing at high levels and have clean lines to help minimise scale;
- target high levels of sustainability and reduction in embodied carbon;
- each plot will include soft landscaping to enhance appearance of external areas, soften built form and help integration between plots;
- to coordinate the planting across all plots and to use native species ;
- to use high quality, durable and robust materials in the externals spaces;
- to provide safe and convenient pedestrian and cycle access to each unit;
- to provide appropriate levels of car and cycle parking and incorporate electric vehicle charging with the ability to expand in the future;
- to develop a safe and accessible place to work and move around in.

Climate

5.37. A climate change assessment has been undertaken as part of the Environmental Statement and site design work, which focuses both on greenhouse gas (GHG) emissions arising from the Scheme and the resilience of the Scheme to climate change.

LOW CARBON DESIGN

5.38. The siting of the EMG2 scheme close to the neighbouring East Midlands Gateway 1 scheme and associated rail freight interchange will enable future occupiers to maximise the use of rail in their supply chain processes. This will enable the lower carbon benefits of rail freight movement to be realised at EMG2.

5.39. One of SEGRO's strategic priorities, as part of its Responsible SEGRO framework, is "Championing Low Carbon Growth". As such, the Applicant is committed to reducing embodied carbon emissions (i.e. those emissions associated with materials and construction processes) in its buildings and infrastructure, and is targeting an embodied carbon intensity of less than 320 kgCO2e/m2 for all buildings proposed. This will be achieved through the following measures:

- Emissions associated with the construction phase of both the proposed buildings and site infrastructure will be reduced where practicable through low carbon material/ product procurement. This includes the use of recycled steel and low carbon concrete in building structures, recycled materials within asphalt (such as bitumen replacement materials and aggregates), and recycled plastic pipework for drainage infrastructure where appropriate.
- A cut and fill balance will be achieved for the EMG2 Main Site and Community Park Land, which will reduce the quantities of material required for import/export. Further, the scheme will avoid the requirement for slope stabilisation materials (e.g. lime) by designing shallow (1 in 3 or shallower) slopes where feasible.
- Low carbon construction practices such as the local sourcing of materials, resource efficiency and waste minimisation (i.e. through the application of waste hierarchy principles), good energy management practices, enhanced plant efficiency, low carbon construction plant (i.e. electric plant, or use of lower carbon biofuels), and renewable electricity supply to site compounds will be encouraged where feasible.
- Landscape design will incorporate areas of woodland planting within the EMG2 Works, which would sequester carbon over the development's lifetime as the woodland matures.

5.40. Regarding the operational phase of the development, buildings will be designed such that they target the highest levels of sustainability. This will be achieved through wide ranging energy efficient initiatives including targeting an EPC rating of Band 'A+' and BREEAM 'Outstanding' as part of SEGRO base build specification. A fabric first approach with highly efficient building envelope specifications will enable reduced energy consumption. Solar photovoltaic (PV) panels will be installed on site, with warehouses capable of supporting 100% roof mounted solar PV coverage.

5.41. Consideration to emissions reductions from operational transport movements has been given, with the implementation of a sustainable transport strategy, encouraging active travel and the use of public transport. Additionally, 20% of parking spaces will be fitted with electric vehicle charging points, with infrastructure provided to expand future provision.

CLIMATE RESILIENCE

5.42. Design measures to ensure the development is resilient to future climate change (i.e. increased intensity of seasonal precipitation trends, heightened temperatures and humidity) include the following:

- Adequate ventilation, in line with building regulations, and design to minimise excessive solar gain during the summer (i.e. through the inclusion of brise soleil louvres on southern elevations);
- Maximise water efficiency during operations and include water recycling measures within building design;
- Building design to follow regulations for structural design with safety margin to ensure storm resilience;
- Green infrastructure to be included within development design which may aid in local temperature reduction through increased shading;
- Drainage infrastructure will be designed to adequately manage future increased rainfall and runoff.

East Midlands Gateway 2
Design Approach Document

Construction components and scheme delivery

6

6 Construction components and scheme delivery

CEMP

6.1. A Construction Environmental Management Plan (CEMP) has been prepared and incorporated in the Environmental Statement (Appendix to chapter 3, Document 6,3A). It sets out the systems and controls that will be adopted during the construction of the scheme to minimise any adverse environmental effects in accordance with the conclusions of the Environmental Statement and Construction Good Practice.

Earthworks, drainage and landscaping

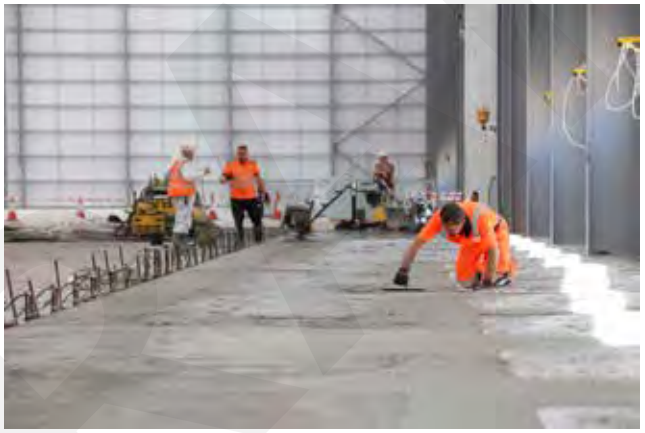
6.2. The construction process for both the EMG2 Main Site and Plot 16 will coordinate earthworks activities (ie creation of plateau and landscape mounding), drainage works and landscaping, they will each be developed as a single phase with an overall earthworks balance. Drainage will be put in place as earthworks are undertaken and strategic landscaping will be undertaken in the first available planting season post completion of earthworks.

Highway works

6.3. There are a number of components to the highway works, as described in section 5 of this Statement, and these are committed as part of the development. Any phasing of the works will be controlled by requirements.

Buildings

6.4. The warehouse buildings will be constructed on plots once the plateau has been formed. Buildings will be developed in response to market and occupier demand. Completion of buildings will be controlled to ensure that strategic landscaping, drainage and other necessary infrastructure is completed prior to occupation. On plot landscaping, drainage and other infrastructure will be completed alongside the construction of individual buildings.



East Midlands Gateway 2
Design Approach Document

Design Code

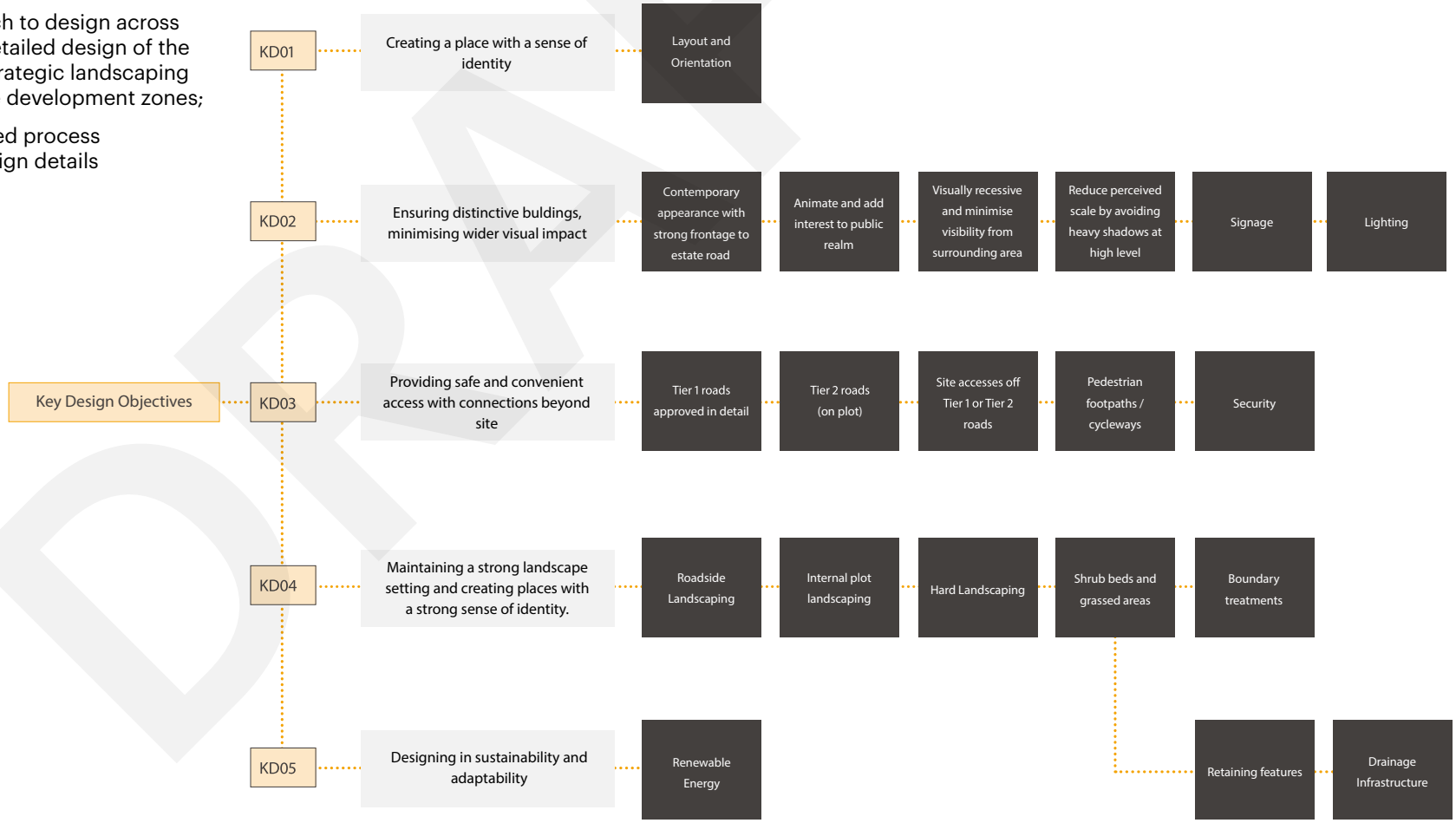
7

7 Design Code

7.1. This Section of the Design Approach Document sets out the design codes that will guide the future detailed design of each development plot within the EMG2 Main Site and Plot 16. All future design details should accord with this design code. The aim is to:

- set out the long term commitment to high quality design from the outset, for buildings, landscaping and hard infrastructure on each plot;
- enable a cohesive approach to design across the site, building on the detailed design of the initial infrastructure and strategic landscaping and the parameters for the development zones;
- allow for a more streamlined process during the approval of design details

7.2. The sections are structured to address building design before considering soft and hard landscaping and boundary treatment and security. Each section identifies key design objectives and design principles before setting out design requirements. The overarching design objectives are shown by the diagram below:



Design Guide Hierarchy of Elements

Design Code Section 1

Building design

It is critical that the buildings are designed to meet operational and occupier requirements as well as the neccessary institutional and sustainability standards for modern industrial and logistics buildings.

This section of the Design Guide therefore relates to the layout and design of the buildings. It covers layout and orientation, main warehouse buildings, offices and renewable energy provision.

Layout and orientation of buildings

KEY DESIGN OBJECTIVE

KDO1: Creating a sense of place and identity for Segro through developing a common architectural language and orientating buildings to provide legible wayfinding around the site.

DESIGN PRINCIPLE

The layout and orientation of each building should contribute to a sense of place and identity for Segro as a whole, including safe access and clear wayfinding through the site from the arrival point.

DESIGN REQUIREMENT

The detailed design of each separate development plot should make reference to what has already been developed or approved in detail and how the plot will relate to the wider site.

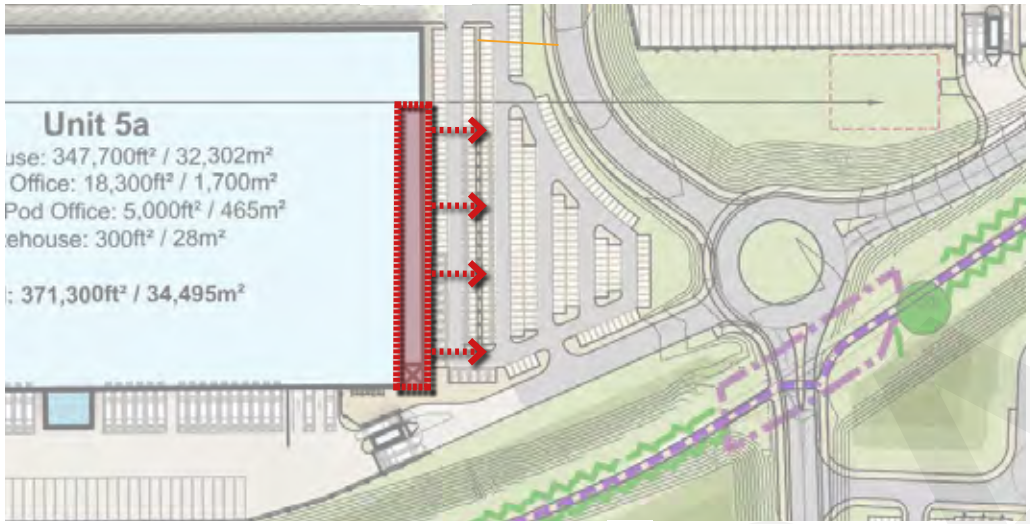
Each plot layout should be designed to make efficient use of the available site whilst not impacting or restricting comprehensive development of the overall site.

Buildings should present appropriate frontage to the access road, with offices prominent, allowing visitors, staff and lorry drivers clear orientation and a reference point on arrival.

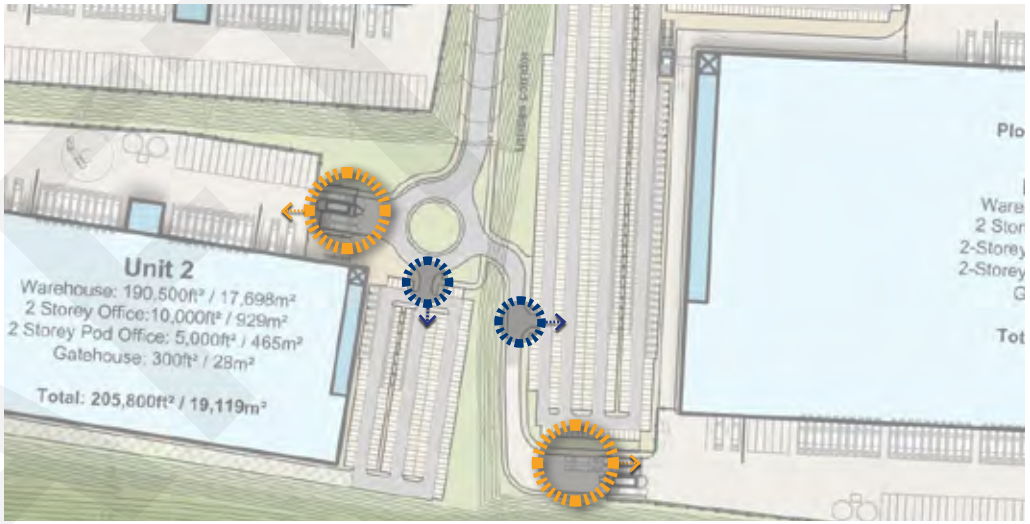
Each plot should have well integrated pedestrian and cycle access/circulation routes, with surveillance from building frontages with street-level activity to help make the site welcoming and safe (also relevant to KDO3).

Each plot should provide safe and convenient access points allowing segregation of movement between cars, service vehicles, cyclists and pedestrians (also relevant to KDO3). Lorry access will be managed to prevent parking or stacking offsite, onstreet or on verges.

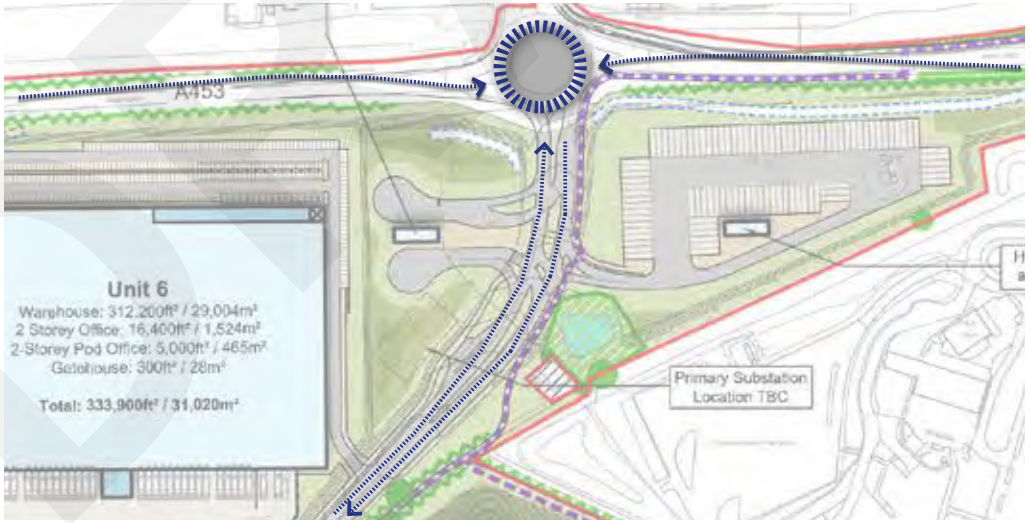
Opportunities for natural surveillance of car parking and other public/semi public spaces should be maximised.



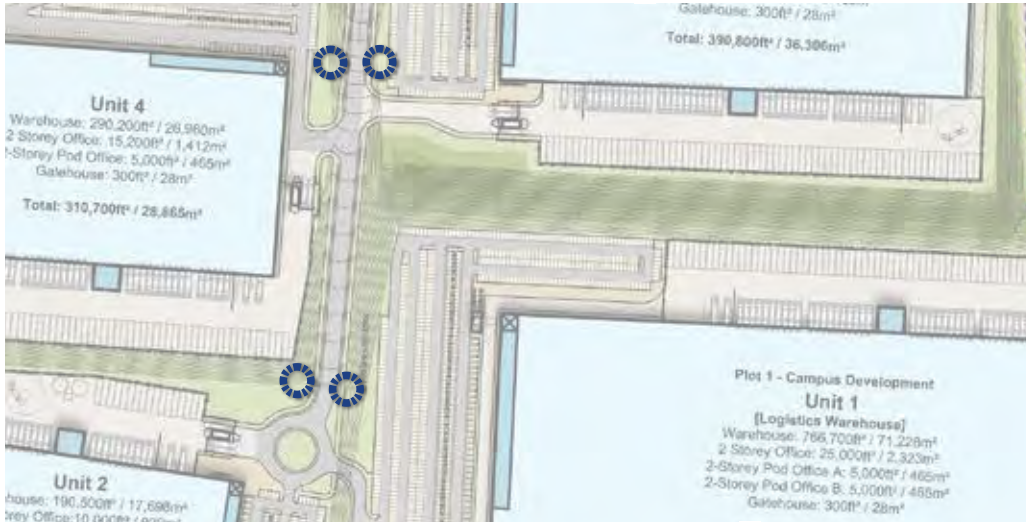
Offices fronting the estate roads and arrival points



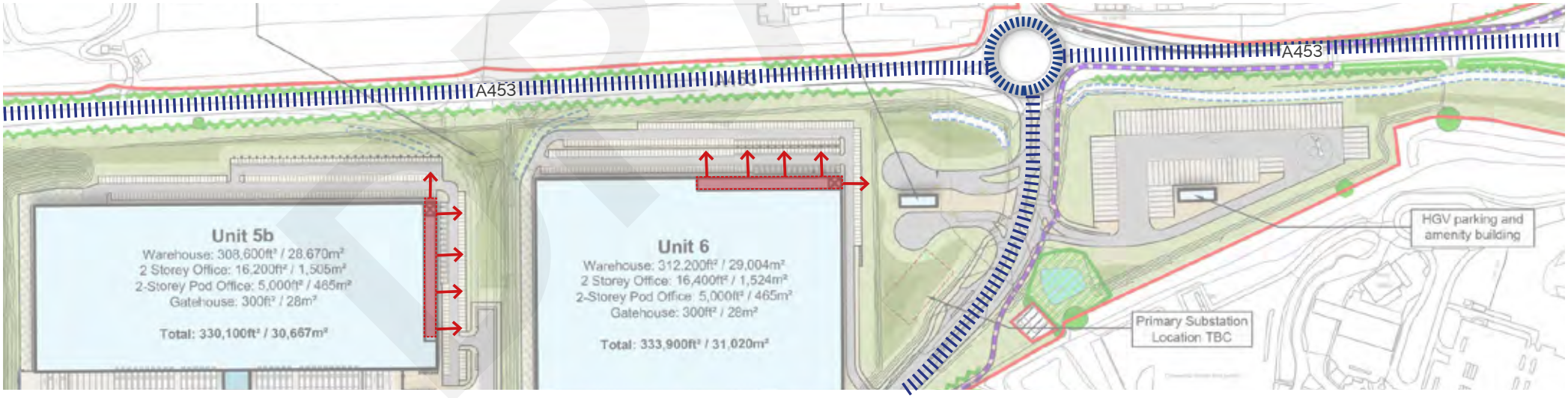
Segregated movement strategy



Primary arrival areas



Bus Stops to car parking frontage on main estate roads



Offices fronting the A453 and primary arrival areas

Large main building element

KEY DESIGN OBJECTIVE

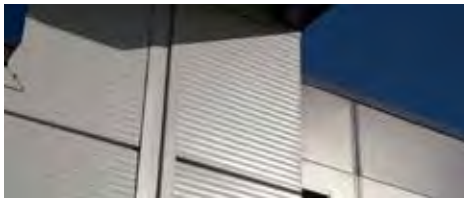
KDO2: Ensuring that prominent buildings are distinctive, including offices which relate to human scale and operational requirements, whilst minimising the wider visual impact of large warehouse elements through use of ground levels, breaking up facades and screening service yards. [Also KDO1]

DESIGN PRINCIPLE

The warehousing should be designed to be visually recessive and to minimise their visibility from the surrounding area.

Colour Banding

Parapet roofs: form a clean junction with the skyline



Cladding Profiles and Orientation

Parapet Roofs: cast no shadow at high level

Canopies & Shelters

DESIGN REQUIREMENT

- Buildings should relate to their context including external and internal infrastructure. Darker cladding colours are more successful as a backdrop to landscaped areas and lighter colours are more appropriate against the sky backdrop at high level.
- Buildings should be designed to minimise their visibility from wider areas – with lighter colours located at the high levels of the building.
- Attention should be given to breaking up long facades and to creating references to human scale. Feature changes at a height of around 2.5m should be incorporated to provide a sense of human proportion to the ground level – most typically detailed around doors, windows / curtain walling / loading dock and cladding interfaces.
- Given the efficiency and overall footprint area of the proposed buildings, it is likely some of the buildings will have elevations which are relatively flat and long. These elevations should incorporate several architectural devices to reduce impact. This could include the following:

- Colour banding – darker tones located at lower level to ground the base of the building. Lighter tones located at the higher levels to help the building merge with the skyline and thereby reduce the visual impact.
- Cladding profiles and orientation – by subtly mixing the cladding profiles (flat, micro-rib, trapezoidal) and the orientation of profiles, elevations can be broken down into smaller sections of visual interest, whilst combining to make a balanced elevation.
- Flashings – Narrow cladding strips used to overlap and weatherproof junctions between panels, can be utilised to complement the overall colour palette and tone of the elevation and help break up large sections of cladding.
- Canopies and shelters – personnel and vehicular canopies and shelters can add profile and depth to elevations and add visual interest at low level.

Office elements

KEY DESIGN OBJECTIVE

KDO2: Ensuring that prominent buildings are distinctive, including offices which relate to human scale and operational requirements, whilst minimising the wider visual impact of large warehouse elements through use of ground levels, breaking up facades and screening service yards. [Also KDO1]

DESIGN PRINCIPLE

Offices, reception areas and stairwells should form strong and prominent features that animate and add interest to the public realm. Glazing areas should be maximised and further interest provided by architectural detailing and use of materials:

Significant glazing

DESIGN REQUIREMENT

To aid legibility and wayfinding, offices should be positioned and designed to be highly visible from estate roads.

Offices should be distinctive and have interesting architectural form and materials, including significant glazing, creating a more human scale. Main entrances should be easy to find through inherent office design without the need for extensive signage (also relevant to KDP3).

Each office should have a coherent design but which contrasts with the main building, making use of colour, materials and detailing that includes projecting and recessed features that add depth and interest to facades.

Any roof top plant should be set back from the facades and screened by louvered panels or parapets.

Brise soleil louvres should be incorporated in the southern elevations; to provide solar shading to the main glazed areas and also provide layering, texture and contrast to the other materials and finishes (also relevant to KDO5).

Solar shading to southern elevations

Colour study

KEY DESIGN OBJECTIVE

KDO2: Ensuring that prominent buildings are distinctive, including offices which relate to human scale and operational requirements, whilst minimising the wider visual impact of large warehouse elements through use of ground levels, breaking up facades and screening service yards.

DESIGN PRINCIPLE

Buildings will be visually recessive to reduce the visual effects from long views into the site.

DESIGN REQUIREMENT

The warehouse elements of the units should use cladding from the below colour palette of standardised RAL colours, with darker tones at the lower levels and lighter tones at the higher levels.

Albatross (RAL 240 80 05)

Goosewing (RAL 7038)

Alaska Grey (RAL 7000)

Pure Grey (RAL 000 55 00)

Anthracite (RAL 7016)

Typical Elevations

Gradient colour scheme with darker tones at the lower level and lighter tones at the higher level

Roofscape

KEY DESIGN OBJECTIVE

KDO2: Ensuring that prominent buildings are distinctive, including offices which relate to human scale and operational requirements, whilst minimising the wider visual impact of large warehouse elements through use of ground levels, breaking up facades and screening service yards.

DESIGN PRINCIPLE

Buildings should incorporate a roof profile and design solution that reduces the perceived height and scale of the building and avoids creating a shadowing effect and resultant outline on the horizon.

DESIGN REQUIREMENT

A heavy-set roof extending to eaves past the elevation line can add physical mass to a buildings silhouette at high level by drawing the eye to height and create an outline on the horizon.

Buildings should therefore incorporate a parapet roof profile in lieu of an overhanging eaves solution. This will remove visible rainwater pipework and avoid creating shadows beneath an overhang at high level.

Combined with the gradient colour scheme, a parapet roof solution will help merge the building with the skyline which will assist in lowering the perceived height.

Roof cladding should be coloured Goosewing Grey (RAL 7038) and any roof mounted PV should be non-glare.

Parapet roofs: cast no shadow at high level

Bus interchange

KEY DESIGN OBJECTIVE

KDO2: Ensuring that the bus interchange, includes a contemporary appearance with strong frontage to the estate road and adds interest to the public realm. [Also KDO1]

DESIGN PRINCIPLE

The bus interchange holds a prominent position at the entrance to the site and therefore should incorporate a contemporary appearance that holds a consistent architectural language with other buildings on the site as well as adding interest to the public realm.

DESIGN REQUIREMENT

The bus interchange building should incorporate a consistent colour and material palette to the other buildings across the site. Cladding profiles and orientation should also be aligned with other buildings to protect the identity of the park.

Glazing areas should be used sensibly to provide visual interest externally and provide positive visibility for occupants.

Generic Elevations

External View

External View

Aerial View

Renewable energy

KEY DESIGN OBJECTIVE

KDO5: Designing in sustainability from the start across all aspects from building, infrastructure and landscape design, whilst allowing for adaptation and later enhancement to meet occupier requirements.

DESIGN PRINCIPLE

There is a strong commitment from Segro to the creation of a sustainable employment scheme which includes the construction of low carbon, energy efficient buildings. A carbon reduction strategy has been developed and is set out in the environmental statement and Carbon Managment Plan. This strategy contains a number of targets and commitments that specifically relate to building design and construction.

DETAILED GUIDANCE

The highest levels of sustainability will be achieved through the use of the following measures:

- The developer shell specification will be designed to be Energy Performance Certificate (EPC) A+ rated.
- Electrification of heat, in the form of heat pump technology, will be employed in the base build to take advantage of grid decarbonisation.
- 20% of parking spaces for each plot, will be fitted with electric vehicle charging points with an infrastructure provided for the remainder for future installation of EVCP's
- Highly efficient LED lighting will be provided outside and inside the buildings. This will be controlled with movement sensors and light sensors to make use of natural daylight and save energy.

Embodied carbon emissions will be reduced through:

- A fabric first approach with highly efficient building envelope specifications improving upon standard building regulations Part L, through improvements to insulation, glazing specifications and air tightness.
- The use of low carbon processes throughout the construction phase are set out in the Carbon Management Plan which comprises possible reduction measures including enhanced plant efficiency, improved earthworks strategies to reduce plant movements, use of local carbon fuel within plant, solar PV energy supply to site compounds and lower carbon materials such as lower temperature mix asphalt, recycled plastic use in place of bitumen in asphalt, reclaimed asphalt recycled plastic drainage pipes, reduced carbon concrete, recycled steel.
- Upgrade the steel frame to future proof for the additional roof loadings imposed by the installation of future PV panels to suit occupier specific energy requirements.
- BREEAM Excellent rating to be achieved on all buildings.

Highly efficient LED lighting

Roof mounted photovoltaic (PV) arrays

Electric car charging points

Design Code Section 2

Soft landscaping design

This section relates to landscape design and covers soft landscaping on plots. It specifically relates to Key Design Objectives 3, 4 & 5.

The approach to strategic landscaping (and this will include all structural site landscaping) is set out elsewhere in this D.A.D and will be controlled by relevant requirements. These main elements of the site's structural landscaping have been developed around the perimeter of the sites. This provides extensive screening, ecological habitats and passive/ active recreational space for walkers and cyclists around the perimeter of the site and focus on hedgerows, woodland planting and specimen trees.

However, internal plot soft landscaping will form part of any future detailed submissions, and this design code section therefore relates only to these elements.

Frontage: car parking & office wellbeing

KEY DESIGN OBJECTIVE

KDO4: Maintaining a strong landscape setting which creates views and legible routes to and from buildings, connects with the surrounding landscape, and further enhances biodiversity.

DESIGN PRINCIPLE

Each plot layout will be designed to ensure it includes soft landscape to a level which will significantly enhance the appearance of the external areas and soften the built form. It will also provide a soft buffer and integration between adjacent plots, plus complement the surrounding infrastructure landscape.

DESIGN REQUIREMENT

The planting design within each plot should comprise standard trees and native hedgerows, amenity planting (including shrubs, herbaceous, grasses, bulbs etc.) and flowering lawn grass seed areas. The tree and hedge planting will be used as structural elements to define space and achieve placemaking within the plots.

Trees will provide visual prominence at distinct locations such as plot entrances or road junctions and help to assimilate the buildings within the landscape setting. Amenity planting will add a human scale around car park bays, footways and breakout seating areas and provide a well-presented landscape setting to building frontages and public access areas.

Communal space accessible by each plot will be incorporated within the site to accommodate outdoor seating areas for staff. These areas will be screened from vehicle movements and furnished with paving, furniture, and planting to create a sense of place. These amenity spaces will be positioned close to office entrances and within easy walking distance for employees.

Soft landscape beds where trees are proposed will have a minimum width of 2.5 metres to allow space for tree pits and root growth.

Trees within hard standing, such as pavements or car parks will have tree pits designed to use structural soils, allowing sufficient growing medium for the tree to realize its natural height, and spread.

Underground services, street lighting columns and CCTV sight lines will be coordinated so as not to compromise trees and other planting

Hedge planting adjacent to car parks and site boundaries should be used instead of fences, wherever possible.

Indicative images of how the car park landscaping strips may look

Trees in Hard Landscape

Car Park Planting - Shrubs & Amenity Planting

Evergreen

Instant Deciduous clipped

Trees to internal car parks to include medium and large stature trees

Low hedges (ilex crenata)

Boundary structure planting & habitats

KEY DESIGN OBJECTIVE

KDO4: Maintaining a strong landscape setting which creates views and legible routes to and from buildings, connects with the surrounding landscape, and further enhances biodiversity.

DESIGN PRINCIPLE

The design of the structural planting for plots should be coordinated with the infrastructure planting, so as to provide an overall holistic design to the site.

The use of structural planting for visual screening should also be considered, through its layout and species context.

DESIGN REQUIREMENT

Structural planting mixes are to be comprised of native species suitable for the local area and soil type and soil type, with due regard to species planting restrictions in relation to the airport wildlife management and bird strike mitigation strategy.

Hibernacula features will be provided in woodland areas, comprising of an excavated earth pit filled with branches, logs, stones, etc. and covered with soil or turf.

In accordance with the project ecologist recommendations, the mix of species used to maximise bio-diversity and promote the establishment of wildlife habitats such as woodland, woodland edge and grassland within the plots.

Species selection should consider biosecurity in terms of slowing / preventing the spread of tree and shrub pathogens.

The ongoing maintenance and management of structural planting should be considered in terms of how the planting will relate to proposed buildings and how the landscape will be accessed by landscape contractors and minimise requirements to maintain landscape within operational areas where HGV traffic frequents.

Trees to road / boundary edges

Wild Flower Grass (meadow)

Design Code Section 3

Hard landscaping design

This section relates to hard landscape design on plot including, boundary treatments, security and lighting. It specifically relates to Key Design Objectives 3, 4 & 5.

Public areas

KEY DESIGN OBJECTIVE

KDO4 and KDO4: Providing safe and convenient access for all users of the site including employees, suppliers or distributors, visitors and the local community, ensuring good connections beyond the site.

DESIGN PRINCIPLE

The hard landscaping design should emphasise the use of high-quality, tactile, and varied materials in public areas to avoid monotonous surfaces and create visually appealing, accessible spaces.

Hardstanding areas should be softened with planting to support placemaking and provide smooth transitions between circulation routes and landscaping.

Car parks should use a mix of materials and greenery for an organised, attractive layout.
Pathways should connect key areas, be wheelchair-friendly, and use durable, well-chosen materials to enhance identity and accessibility.

DESIGN REQUIREMENT

Inside individual plots, paths will lead from external walking and cycling routes and from the cycle parking and car park to each office main entrance.

Tactile paving and dropped kerbs will be provided at all road junctions, with further paving extended around offices and to the warehouse perimeter

Materials for on plot pathways to be determined subject to the external drainage design and could include a range of differing material palettes, utilising block paving in stone / buff colours and greys

Materials for path ways in public areas to be primarily block paving with contrasting colours encouraged to break up long areas of continuous materials

Pathways in employee amenity areas to include bound gravel finish as an alternative

Pathways in private areas to include block paving where there is high volume of pedestrian / employee traffic

Pathways will be designed to be pedestrian/ wheelchair friendly, using durable materials

Material and colour choice including the use of differing palettes will help to differentiate and to create a sense of place

Outdoor Seating Areas

These areas should provide a valuable outdoor seating area for employees within easy access of the office entrance.

Seats and benches should be arranged to provide a range of outdoor seating opportunities for groups and individuals.

Paving should be of a higher spec than concrete alone, containing crushed aggregate of either sandstone or granite.

Road

Staff Amenity Space - Contrasting textures

Off Plot Pathways

On Plot Pathways

Private areas

KEY DESIGN OBJECTIVE

KDO3: Providing safe and convenient access for all users of the site including employees, suppliers or distributors, visitors and the local community, ensuring good connections beyond the site.

KDO4: Maintaining a strong landscape setting which creates views and legible routes to and from buildings, connects with the surrounding landscape, and further enhances biodiversity.

DESIGN PRINCIPLE

Private / Secure Areas
The approach to the use of materials and hardstanding within the private areas and secure service yards will be to promote the use of highly robust and durable materials. Due to the anticipated nature of the operations within the service areas, materials will need to reflect high performance and low maintenance qualities and be different in character to the public facing areas.

DESIGN REQUIREMENT

Roads
Surface materials should reflect the technical design of the internal estate roads.

- Car Parking Bays: Bituminous Car Park Aisle Construction (Light duty)
- Car Parking Aisles: Concrete Block Paving - Permeable (Light duty)

HGV Service Yards
Service yard areas will be formed in concrete surfacing, to provide a robust base for vehicle manoeuvering and screened where practicable from public view through the use of structured planting.

External materials to the service yards to be in concrete. Due to the high levels of HGV traffic maneuvering within these spaces, concrete is the optimum material from a wearing and maintenance perspective.

Where vehicle manoeuvres have the potential to conflict with building faces or retaining structures, edge protection should be provided to protect both the buildings / materials and the vehicles themselves.

Wheel stops and wheel guides should be provided to help maintain the integrity of the external materials and building facades.

Where external paths for fire escape and fire tender are provided within the private areas, tarmacadam will be used as a low maintenance, and suitably robust material.

Service Yard - Barrier protection & Safety lining

Loading - Wheel Guides

Service Yards - Wheel Stops

Vehicular & cycle parking infrastructure

KEY DESIGN OBJECTIVE

KDO3: Providing safe and convenient access for all users of the site including employees, suppliers or distributors, visitors and the local community, ensuring good connections beyond the site.

KDO5: Designing in sustainability from the start across all aspects from building, infrastructure and landscape design, whilst allowing for adaptation and later enhancement to meet occupier requirements.

DESIGN PRINCIPLE

Provide safe and convenient pedestrian and cycle access to each of the individual units and include provision for appropriate cycle parking facilities.

DESIGN REQUIREMENT

Cycle Parking:
Covered cycle parking should be provided within each plot and should reflect the requirements of each building's floor space.

Each plot should provide:

- Appropriate levels of cycle parking with due regard to the operational needs of the Occupiers of plots.
- Safe and secure long stay cycle parking for staff. This should be located in an area that is convenient for use.
- Showers and changing facilities for staff.
- Short stay cycle parking for visitors to individual plots.

Car parking infrastructure

KEY DESIGN OBJECTIVE

KDO3: Providing safe and convenient access for all users of the site including employees, suppliers or distributors, visitors and the local community, ensuring good connections beyond the site.

KDO5: Designing in sustainability from the start across all aspects from building, infrastructure and landscape design, whilst allowing for adaptation and later enhancement to meet occupier requirements.

DESIGN PRINCIPLE

To provide the appropriate level of car parking for each of the individual units that meets the standards with support for electric vehicle charging and the ability to expand upon this in the future.

DESIGN REQUIREMENT

An appropriate level of car parking should be provided which has due regard to the operational needs of the occupiers of plots. Car parking should be designed in accordance with relevant guidance and priority given in terms of the location of disabled parking, car parking for electric vehicles and staff who car share.

Car parking for each plot should be provided using either a grade level car park or a multi storey car park solution (if required) to meet occupier demands, which will include:

- EV spaces - a minimum of 20%, with an infrastructure provided for the remainder for future installation of EVCPs
- 10% of spaces are to be laid out as spaces dedicated for the use of disabled 5% of the parking spaces will be priority spaces for car sharers.)
- Powered two wheelers - 1 space for every 20 car parking spaces.
- Provision for the charging of electric motorcycles will need to be made at the rate of one charging point for every four motorcycle spaces.
- The car park areas will be constructed in a mix of macadam and block work, which will form part of a coordinated hard landscaping strategy.

Boundary treatment & security

KEY DESIGN OBJECTIVE

KDO1: Creating a sense of place and identity through developing a common architectural language and orientating buildings to provide legible wayfinding around the site.

KDO3: Providing safe and convenient access for all users of the site including employees, suppliers or distributors, visitors and the local community, ensuring good connections beyond the site.

KDO4: Maintaining a strong landscape setting which creates views and legible routes to and from buildings, connects with the surrounding landscape, and further enhances biodiversity.

DESIGN PRINCIPLE

Consideration should be given to the layout of the development to ensure personal safety. This relates not only to ensuring that the layout of the development does not create an environment conducive to crime, but also to how occupiers and visitors to the site can move freely without risk of injury.

DESIGN REQUIREMENT

Security Fencing
Boundary protection around service yards will be 2.4m high paladin fencing.

Natural Surveillance
Natural surveillance should be a key factor in the overall design of the site. Offices should overlook car parking and public realm, allowing a high degree of visual control with well defined spaces and pedestrian routes with easy to recognise entrances; this provides convenient movement without compromising security. The building designs and layouts minimise visual obstacles and eliminate places of concealment and any potential dark areas must be well lit.

Ancillary Areas
External plant requirements, sprinkler tanks, refuse and recycling storage are to be located within service yards to reduce the risk of being vandalised and minimise visibility.

Formal Surveillance
The presence of staff and CCTV provides reassurance and a deterrent to potential offenders. Staff need to be located in prominent positions so they can oversee and be seen. The effectiveness of CCTV depends on the number and location of cameras, the quality of the image and the monitoring in place.

Examples of good practice include:

- The use of windows on all habitable spaces within the main offices to all units
- Regular monitoring and patrolling if required by security staff
- The use of high visibility vests
- The placement of CCTV cameras so they cover each other to deter vandalism
- Alarming of the CCTV system
- Placement of the CCTV so that their view is unobstructed and well illuminated.
- Identification and highlighting of CCTV positions.
- Quick and efficient maintenance and repair of CCTV systems.
- Retaining features are to be avoided as far as possible by use of engineered earthworks embankments

Where unavoidable, retaining features should be designed by a specialist with appropriate edge protection measures suitable for their placement and use (also relevant to KDO3).

Where appropriate, hedge planting adjacent to car parks and site boundaries should be used instead of fences (KDO1).

7 Design Code

Acoustic fence to a perimeter mounds where applicable

Typical Acoustic Fence

Criblock retaiining wall

Kingpost retaining walls where walls arent visible from public areas

Precast concrete retaing walls to dock loading areas

Typical Timber Knee Rail

CCTV Surveillance

Paladin Fencing

East Midlands Gateway 2
Design Approach Document

Appendix 1: Highway Works Design Approach Document

8

8 Appendix 1: Highway Works Design Approach Document

Introduction

8.1 The East Midlands Gateway 2 (EMG2) development, located south of East Midlands Airport (EMA) near M1 Junction 23A, proposes large-scale improvements to the strategic road network (SRN) at M1 Junction 24. Small-scale works on the SRN are proposed at the EMG1 site access junction. On the local road network improvements are proposed to the A453 Hunter Road roundabout, to form the access into EMG2, and on the A453 westbound exit from the J23A Finger Farm roundabout. In addition various active travel works are proposed.

8.2 Figure 8.1 below shows the overall location of the highway works in the context of EMG2 and the existing road network.

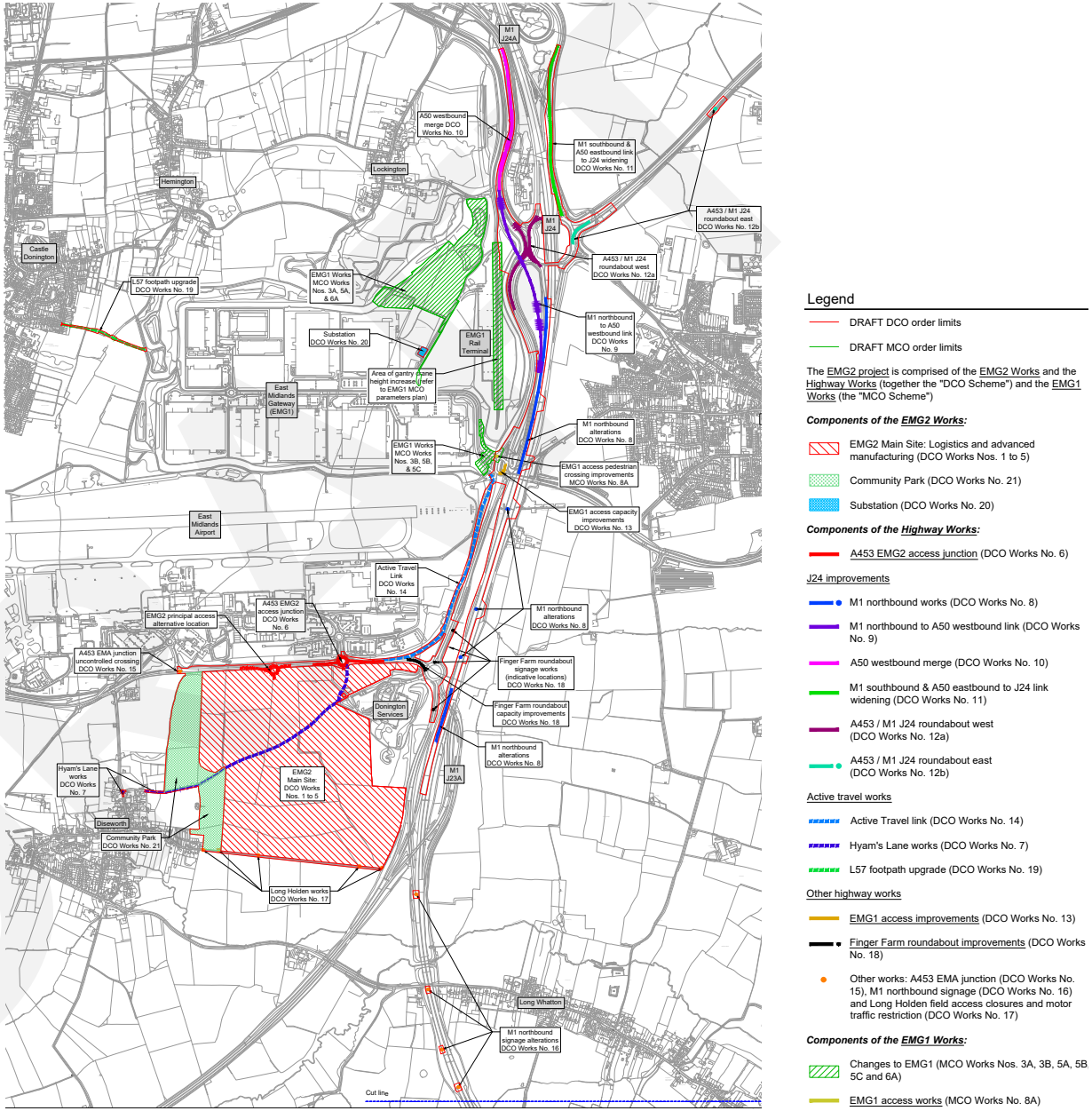


Figure 8.1 Location Plan

Principles of Good Road Design

8.3 DMRB standard GG 103 sets out 10 principles of good road design. This standard states that good road design:

- makes roads safe and useful;
- is inclusive;
- makes roads understandable;
- fits in context;
- is restrained;
- is environmentally sustainable;
- is thorough;
- is innovative;
- is collaborative; and
- is long-lasting.

8.4 The ten principles of good road design have been taken into account in the design for the highway works, and each is assessed in detail in this report.

Scheme overview

8.5 The EMG2 highway works are defined in Schedule 1 of the draft DCO (Document DCO 3.1) and are shown on the Components Plan (Document DCO 2.7) (an extract being found at Figure 8.1 above) and the Highways Plans (Document DCO 2.8) and comprise the following:

- A453 access junction works to the EMG2 Main Site (DCO Works No. 6);
- Hyam's Lane works (DCO Works No. 7);
- Works to the M1 northbound (DCO Works No. 8);
- Construction of link road from the M1 northbound to the A50 westbound (DCO Works No. 9);
- Works to the A50 westbound (DCO Works No. 10);
- Works to the link road from the M1 southbound and A50 eastbound to the M1 Junction 24 (DCO Works No. 11);
- Works to the west side of the M1 Junction 24 roundabout and A453 northbound approach (DCO Works No. 12a);
- Works to the east side of the M1 Junction 24 roundabout and A453 southbound approach (DCO Works No. 12b);
- Improvements to the EMG1 access junction (DCO Works No. 13);
- Construction of the Active Travel Link between the EMG1 access junction and the A453 west of Finger Farm roundabout (DCO Works No. 14);
- Provision of an uncontrolled crossing of the A453 at the EMA signalised access junction (DCO Works No. 15);
- Works to M1 northbound signage on the approach to M1 Junction 23A (DCO Works No. 16);
- Works to Long Holden (DCO Works No. 17);
- Works to the J23A Finger Farm roundabout (DCO Works No. 18); and
- Upgrade to public footpath L57 to a cycle track (DCO Works No. 19).

Principles of good road design

MAKES ROADS SAFE AND USEFUL

8.6 GG 103 states that "Safety is fundamental to good road design; it is integral to both the usefulness of its function and the confidence of road users and their well-being. Good design creates safe roads which support and link to other wider imperatives, both nationally and locally, and that are fundamentally useful, meeting users' need for mobility effectively".

M1 JUNCTION 24

8.7 M1 Junction 24 experiences congestion at peak times with queues from the signalised roundabout junction blocking back onto the M1 northbound mainline as well as on the A50 eastbound and A453 north & southbound approaches. This congestion is forecast to worsen. There is a cluster of PICs at the M1 northbound exit slip road.

8.8 The works on the SRN at Junction 24 will deliver a significant capacity improvement to the junction and will take the key M1 northbound to A50 westbound movement out of the signalised roundabout junction and a new bridge over the A453 will be constructed to accommodate this new link. This is the only movement between the M1 and A50 that uses the signalised junction with all other movements between these two major roads already having direct free-flow links. The capacity improvement to the NB exit will reduce the potential for PICs to occur on this part of the network.

8.9 An alternative bridge, that would have seen the M1 northbound to A50 westbound link crossing under the A453, was considered but ruled out principally on the grounds that (a) it would be highly disruptive to construct and (b) it would require surface water pumping which requires frequent maintenance and presents a safety risk if it were to fail.

8.10 Departures from standard are required due to the overall constraints of the existing road network, these will be subject to a rigorous safety risk assessment and departure from standard approval process.

EMG1 ACCESS JUNCTION AND ACTIVE TRAVEL WORKS

8.11 The capacity improvement to the EMG1 access junction will cater for the additional development within the EMG1 site and support the wider EMG2 proposals.

8.12 The provision of an active travel link from the A453/A6/EMG1 junction south to EMA and the proposed EMG2 site will fill a gap in good-quality cycle provision.

8.13 The active travel link will connect into the upgrade of Hyam's Lane, providing pedestrian and cycle connectivity through to Diseworth. Footpath L57 will also be upgraded to provide cycle connectivity between Castle Donington and EMG1.

8.14 Overall the active travel works will provide a much-improved network of high-quality pedestrian and cycle routes between EMG1, EMG2, EMA, Kegworth, Castle Donington and Diseworth, promoting active travel and improving safety by providing off-carriageway and off-road facilities.

FINGER FARM ROUNDABOUT AND EMG2 ACCESS JUNCTION

8.15 The capacity improvement to the Finger Farm roundabout will cater for the traffic generated by the EMG2 proposals. The A453 Hunter Road roundabout will be modified to provide access into the EMG2 main site, and the A453 entries and exits will be widened to provide additional capacity.

SUMMARY

8.16 The highway works will:

- improve safety and reduce collisions at M1 Junction 24;
- reduce delays particularly at M1 Junction 24 and make journey times more reliable;
- help sustainable economic growth by supporting employment development opportunities, particularly for EMG2 and the proposed additional works within EMG1; and
- improve facilities for active travel users, notably cyclists, thus providing vulnerable users with a safer environment.

8.17 A stage 1 road safety audit [will be] undertaken for the scheme in collaboration with NH and LCC).

Is inclusive

8.18 GG 103 states that "Inclusive environments facilitate dignified and equal use by all. An inter-disciplinary design process involves and places people's needs and views at its heart, nurturing well-being and creating a shared sense of ownership of the road. All users and communities are considered carefully in order to reduce barriers to access and participation, particularly mindful of the most vulnerable."

8.19 The provision of the active travel works referred to above will significantly enhance the network of active travel routes and fill the following gaps in a good-quality active travel network:

- Castle Donington to EMG1, EMG2 and Kegworth; and
- EMG1 (and villages to the north of EMG1) and Kegworth to EMA, EMG2 and Diseworth.

8.20 The active travel works will enable national cycle route no. 15 to be extended from Diseworth to Kegworth via EMG2 and EMG1.

8.21 The wider EMG2 project will provide new footpath and bridleway connections around the EMG2 main site which will provide improved facilities for leisure and commuter users.

8.22 The additional signalised crossing at the EMG1 access junction will link the existing bus interchange to a new drop-off lay-by in the EMG1 development. This will allow drivers to drop off bus passengers in a safe location when leaving the EMG1 site.

8.23 Overall these facilities will provide leisure and commuter routes for vulnerable road users connecting together the key local employment sites and local villages.

Makes roads understandable

8.24 GG 103 states that "Easy to read, a good road is intuitive to use so as to be safe and efficient for all. 'Self-explaining roads' focus on the essentials and eliminate unnecessary and confusing clutter to make them legible, while responding to place and enhancing both environmental and economic outcomes."

8.25 The highway works will be designed so that the layouts are as intuitive as possible, for example by having spiral lane markings through junctions clearly marked and signed so drivers do not have to change lanes unnecessarily.

8.26 Consideration has been given to the locations of signage on the northbound approach to Junction 24. A directional signage strategy has been produced that will provide clear and concise signing for this section of the M1.
The strategy also covers changes to directional signage on the M1 northbound approach to Junction 23A, on the A453 and on the A50.

8.27 Directional signage will be provided for pedestrians and cyclists using the active travel works and for the local footpath and bridleway network. The active travel works will extend national cycle route no. 15 from Diseworth to Kegworth via EMG2 and EMG1 thus improving route understanding for cyclists.

8.28 Care will be taken at detailed design stage to ensure that appropriate clear signage is provided and unnecessary signage is avoided, thus minimising clutter.

Fits in context

8.29 GG 103 states that "The aesthetic quality of a road and its design in relation to the places through which it passes, is integral to its function and the experience of those that use it. Good road design demonstrates sensitivity to the landscape, heritage and local community, seeking to enhance the place while being true to structural necessities. It builds a legacy for the future."

8.30 The majority of the highway works will be widening of existing road corridors contained within the existing highway boundary. However, the M1 northbound to A50 westbound will be a new link passing over the A453 on a bridge. As the design of this link develops it will be integrated into the existing landscape as sensitively as possible, with varying earthwork slopes and providing a good-quality soft landscaping scheme. Sustainable drainage features will be provided alongside the new link.

8.31 The new bridge structure is adjacent to a strategic rail freight interchange, the M1 motorway and the A453 and A50 SRN routes. The bridge, therefore would not look significantly out-of-place, however, its impact should be minimised so as not to provide a further visual block. The 'weight' of the structure is to be minimised, however, a cable-stayed bridge structure would in itself create a visual impact and would be highly visible from the surrounding area and would look out of place when compared to the adjacent SRN.

8.32 The bridge deck width is increased slightly from the minimum as the deck is intended to be straight, whereas there is a plan curve to the carriageway. This is to be kept to a minimum which minimises the effect of shadow on the roadway below. Curved girders were considered, however, the challenges associated with the low construction depth likely preclude this option due to the risk of buckling and instability, particularly during construction. The overall effect will present an elevation with a traditional appearance, with weathering steel that will create an even deep brown finish, under the shadow of the cantilevering concrete deck.

8.33 The parapets will be normal containment in metal, with rails and mesh infill, the mesh will be barely visible. A galvanized finish will dull to a light grey rapidly and tend not to be intrusive against the sky. The abutments will be mass concrete, and allow a certain degree of flexibility in appearance. A simple feature finish such as vertical fluting can be used which would be in keeping with other bridge substructures nearby. The wingwalls of the abutments may be formed either in reinforced earth or concrete.

8.34 The active travel works will be designed as far as possible to minimise significant engineering interventions such as earthworks and they will be landscaped to provide suitable boundary treatments that fit in context with the existing landscape.

8.35 No heritage assets are affected by the highway works.

Is restrained

8.36 GG 103 states that "Functional, but responding positively and elegantly to the context, good road design allows for the expression of the character and identity of the places and communities through which a road passes. Good road design can enhance a sense of place and add to what we have inherited, particularly through the use of appropriate materials and traditions, but does not make unnecessary superficial or superfluous visual statements".

8.37 As discussed above the majority of the highway works will be widening of existing road corridors contained within the existing highway boundary. The M1 northbound to A50 westbound is the exception to this as it will be a new link. The alignment of this link has been designed to closely follow the existing road alignments of the M1, A453 and A50 on plan thus minimising the impact of the new link and is contained within the areas surrounded by existing road and rail infrastructure. The vertical alignment of the new link, whilst being elevated to cross the A453, is designed to be integrated into the existing landscape as sensitively as possible.

8.38 Overall the highway works seek to provide a scheme of a scale compatible with an overarching sustainability and environmental driver to retain a compact overall junction layout that sits within the general footprint of the existing highway network.

8.39 For the new M1 northbound to A50 westbound link consideration was given to a feature bridge over the A453 such as a cable-stayed bridge but this would be an unnecessary visual statement not in keeping with the surrounding area.

Is environmentally sustainable

8.40 GG 103 states that "Making an important contribution to the conservation and enhancement of the natural, built and historic environment, good road design seeks to achieve net environmental gain. It is multi-functional, resilient and sustainable, allowing for future adaptation and technical requirements, while minimising waste and the need for new materials."

8.41 As discussed above the highway works seek to provide a scheme of a scale compatible with an overarching sustainability and environmental driver to retain a compact overall junction layout that sits within the general footprint of the existing highway network. By constructing a bridge over the A453 avoids temporary works to the A453 which reduces the material and carbon cost and minimises disruption to traffic during the works.

8.42 The highway works are included within the Environmental Impact Assessment (EIA) process for the wider EMG2 project. As part of the EIA process design influence and mitigation / enhancement measures are integrated as early as possible.

8.43 As discussed below Segro are collaborating with promoters of other strategic developments in the surrounding area to deliver highway works that can be readily adapted to cater for future demands rather than replaced.

8.44 The active travel works will provide a much-improved network of high-quality pedestrian and cycle routes between EMG1, EMG2, EMA, Kegworth, Castle Donington and Diseworth, promoting active travel and enabling a shift to sustainable transport modes.

8.45 The drainage design will make use of sustainable drainage (SuDs) and landscaping will be provided to match the surrounding environment.

8.46 The EMG project is committed to delivering meaningful biodiversity improvements across the whole project, and a Biodiversity Net Gain (BNG) assessment has been used to inform the scheme design. This demonstrates that the project should have the ability to deliver beyond the 10% net gain goal for habitat area, hedgerows, and watercourses. This has been calculated using the Statutory Biodiversity Metric and covers the EMG Main Site, Highways Works, and EMG1 areas. Within highway works, it may not be possible to achieve 10% BNG in isolation due to land availability, design and safety constraints, but opportunities will be explored during the detailed design stage. Impacts will be avoided and minimised wherever possible, and new habitats will include species-rich grassland, scrub, and woodland, delivering long-term benefits for nature across the wider development.

Is thorough

8.47 GG 103 states that "The result of robust processes that create a continual cycle of improvement, good road design starts with an in-depth understanding of people, place and context; learning from best practice worldwide. The design of all elements of the road environment are considered together and integrated into a responsive design."

8.48 Segro and their consultant team have worked hard to understand the local environment and context of the proposed highway works. Segro are already inherently embedded in the local community given that they own, operate and maintain the EMG1 site and have regular liaison with the local community. The ongoing consultation process (as discussed further below) will continue to further the understanding of the local environment and context and the design will respond to this engagement as appropriate.

Is innovative

8.49 GG 103 states that "Responding positively to change, good road design captures opportunities for betterment and develops in tandem with emerging new technologies. Designing to a standard is not the same as achieving good design; an innovative and resourceful approach that is mindful of context is necessary to achieve better outcomes."

8.50 As discussed below Segro as promoter of EMG2 are actively engaged with key stakeholders and other developers to provide a scheme on the SRN that forms part of a long-lasting solution to M1 Junction 24. This combined developer-led approach is in itself innovative, and given the developers are inherently invested in the local area a holistic approach to the scheme design that fits with the wider strategic planning context has been achieved.

8.51 The detailed design of the highway works will make best use of emerging technologies, standards and products to minimise environmental impact.

Is collaborative

8.52 GG 103 states that "Collaboration ensures roads are useful to and accepted by the communities they serve. Collaborative working requires a rigorous process that identifies dependencies and wider opportunities, and facilitates effective communication and engagement from the start. Community engagement will be led by a local sense of culture, place and value."

8.53 Segro, as promoter of the EMG2 project, have engaged with key statutory stakeholders, local authorities, local communities and other parties in the development of the overall EMG2 project. This has included statutory consultation prior to the submission of the scheme development consent order.

8.54 The need to improve M1 Junction 24 is recognised by NH, local highway authorities, the East Midlands Freeport and the East Midlands Combined Authority, and the principle of improving the junction as set out in the highway design for the Segro EMG2 project has received broad support from these parties.

8.55 The active travel works have received broad support from these parties and local communities.

8.56 The enhanced public right of way network around the EMG2 main site has also received broad support during the consultation, and following the consultation process changes have been made to (a) provide a bridleway connection between Hyam's Lane and Long Holden to provide a loop from and back to Diseworth, and (b) change the of status of Long Holden from an all-purpose highway to a bridleway to restrict access to walkers, cyclists, horse riders and private access to adjacent land.

8.57 Engagement with NH and LCC, as well as other local stakeholders as appropriate, will continue as the scheme is developed and the detailed design of the highway works will go through a full technical approval process following the making of the DCO before construction.

Is long-lasting

8.58 GG 103 states that "With quality materials and careful detailing, good road design brings lasting value. The design process requires sufficient time for challenges to be resolved before delivery and is adaptable to future needs and technologies as part of the commitment to whole-life operation, management and maintenance."

8.59 Segro, as promoter of the EMG2 project, have engaged with other developers of strategic sites around the area of M1 Junction 24 and have worked with them to develop a scheme for Junction 24 that can be added to by others (the longer term proposals envisage a new bridge over the M1 south of J24 to provide a local link road into Kegworth) and would therefore not be abortive if other developments are brought forward.

8.60 Detailed consideration has been given to the operation of the M1 northbound between Junctions 23A and 24 and how this is affected by the EMG2 highway works and how technology may be deployed.

8.61 The design process will take maintenance needs into account from the outset and the maintenance and repair statement (MRS) will be provided to document how access for maintenance is to be provided. The detailed design process will continue following making of the DCO with NH involved in the technical approval process.

8.62 The new bridge structure crossing the A453 has been designed with due regard to the long-term maintenance requirements by designing as an integral bridge and it will be designed to a 120-year design life.

8.63 The drainage strategy for the highway works makes an allowance of 40% for climate change adaption thus providing a long-lasting drainage system.

8.64 The enhanced network of footpaths and bridleways around the EMG2 main site will be dedicated as public rights of way thus ensuring their long-term status.

SEGRO