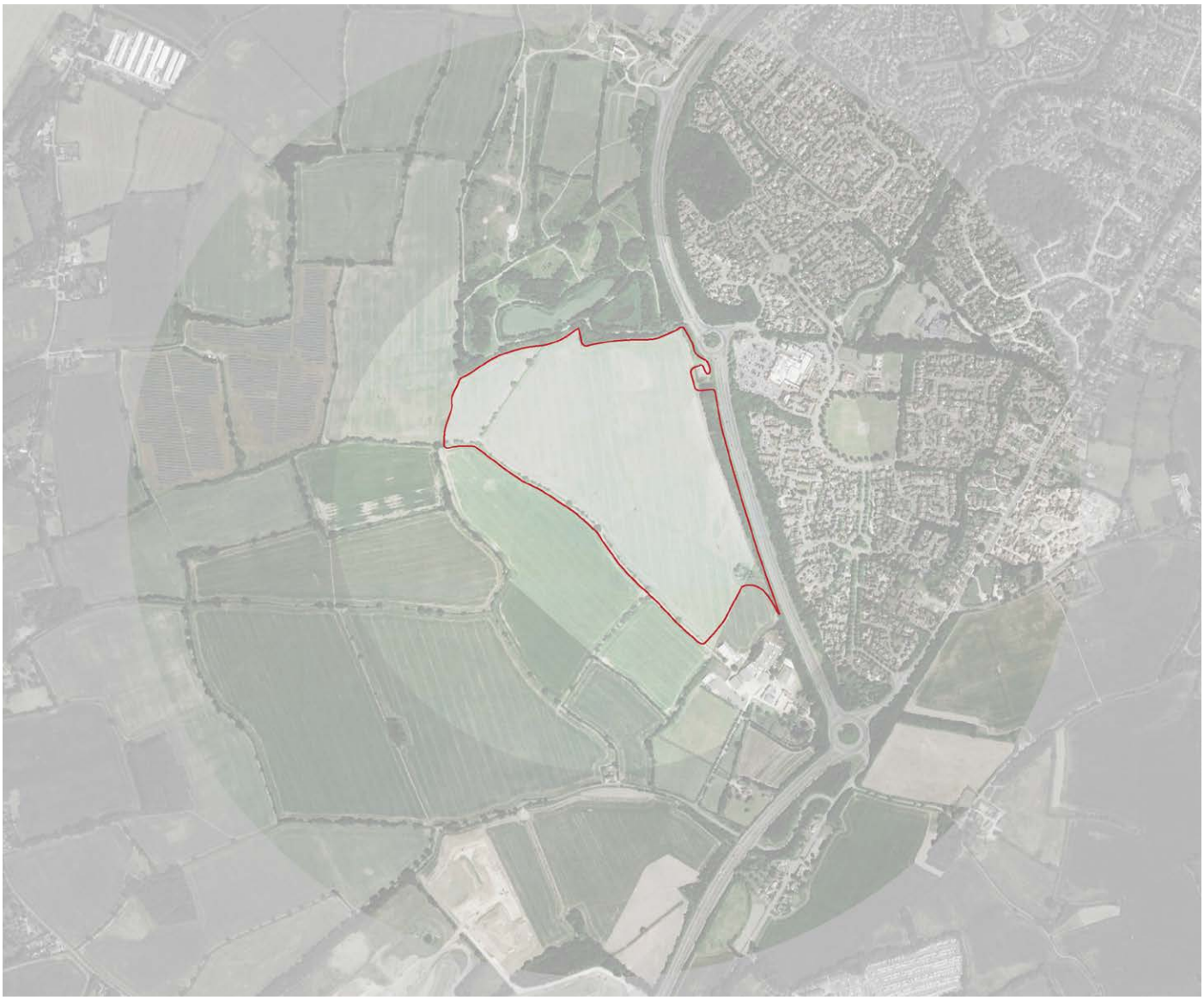
HORIZON

BUSINESS & INNOVATION PARK

Design Code



Braintree District Council

July 2021

Revisions April 2021
Following a year of construction of the main infrastructure works on site at Horizon 120, a series of updates to the Design Code have been carried out to ensure best practice and up to date guidance is followed. These are summarised below:

3.1 Zonal Plan:
- Updates to use classes to reflect changes in legislation and following market feedback.

5.1 Road Corridor Landscape:
- Swale design updated to reflect design development during on site works.
- Sub station requirements have been updated to allow sub stations to be accessed from the Green Links.

Project Team

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Content

1.1 Purpose of Design Code

1.1.1 Introduction

This Design Code has been produced by the design team on behalf of Braintree District Council to accompany the Local Development Order (LDO) for Horizon 120.

The site is located next to the A131 opposite Great Notley Village south of Great Notley Country Park.

The Horizon 120 area covers approximately 20ha, and includes a series of development plots for business and commercial use. In addition to this landscape areas for recreation and a local hub will form part of the business park.

The intention of the LDO is to create a high quality Business park comprising a range of uses.

1.1.2 Purpose of Design Code

The purpose of the design code is:

- To achieve high quality design in accordance with local and national planning policy and guidance.
- To speed up the delivery of development by providing clear standards on what is considered acceptable and good design quality and therefore approved under the LDO.
- To provide certainty to landowners, developers and businesses on the standards for LDO development which need to be adhered to.
- To provide certainty to the local planning and highways authorities and the local community on the form of development permitted by the LDO.
- To revitalise and regenerate the area by requiring development consented under the LDO to enhance the environmental quality and investment potential of the area.

1.1.3 Background

The design code is focused on achieving good, sustainable design and addressing contextual issues associated with business park development.

It is based on a detailed site and contextual appraisal and the range of technical assessments set out in the Statement of Reasons published alongside the LDO.

1.1.4 Focus of the Design Code

The design code is focused on ensuring:

- The delivery of an attractive and biodiverse public realm adjacent to public highway to enhance the overall character and feel of the business park.
- The delivery of active public realm and amenity areas, including a public park, business park square and perimeter walk.
- Verdant and welcoming entrance gateways.
- The reduction of impact from development on surrounding landscape and views.
- The delivery of integrated green infrastructure .

Within the character areas of development plots, away from the identified public realm and road network, a wider, more flexible scope is provided. This is to enable businesses and developers to maximise the development potential of their sites and to create individuality and add character to the site overall.

The code does not prescribe distances between buildings as this is adequately covered by building regulations and right to light legislation. These must be followed for any development within plots.

1.1.5 Application

The design code is applicable within the Horizon 120 LDO application as defined in section 2.0 of the Horizon 120 LDO.

The requirements of this design code apply to any development undertaken which falls under the classes of permitted development contained within the LDO and for which planning permission is conditional upon accordance with the design code.

Certain classes of LDO permitted development are linked to specific chapters or tables of the Design Code, eg. examples of building materials specified per use class in sections 4.1-4.5.

1.1.6 Chapters

The design code document is split into chapters as below:

1. Introduction
2. Site Context
3. Business Park Strategies
4. Plot Development Standards
5. Strategic Landscape
6. General Standards

Chapters 1-2, Introduction and Site Context, are informative, but essential to all users of the Design Code.

Chapter 3, Business Park Strategies, sets out areas for development and hierarchy across the business park. It is essential to understand the set up of these and this will help the user to navigate the design code.

Chapter 4, Plot Development Standards, sets out the standards for the individual development plots and is aimed at developers. The details and standards includes both architecture and landscape standards.

Chapter 5, Strategic Landscape, sets out the standards the public realm across the Business park. This section is aimed at the local authority or developer working on their behalf.

Chapter 6, General Standards, sets out all standards for development across the site. The detail of standards vary in line with the Masterplan Zones, Character Areas and Street Hierarchy. All developers (plot and strategic landscape) must read this section and adhere to standards within.

Plan 1: Red Line Boundary Plan

1.2 Delivering Good Design

1.2.1 Introduction

This Design Code is set out in a user friendly way with a comprehensive LDO checklist which will assist applicants and officers through the planning process.

As the environment of Horizon 120 is intrinsic to the holistic, healthy vision, the public realm is clearly set out in the code and cannot be varied unless stated in the relevant sections.

1.2.2 Planning Background (NPPF)

The LDO and Design Code must accord with the National Planning Policy Framework (NPPF). The requirements of the NPPF are clear in relation to design quality and new development:

- Good design is a key aspect of sustainable development and inseparable from good planning practice.
- New development should provide positive improvements in the quality of the built environment.
- Poor design should be replaced with better design.
- New development should take the opportunities available for improving the character of an area and the way it functions. Planning permission should be refused for development of poor quality design which fails to do this.

Planning Authorities should:

- Always seek to secure high quality design.
- Plan positively for the achievement of high quality and inclusive design for all development.
- Consider using design codes where they could help deliver high quality outcomes.

1.2.3 Compliance Checklist

To assist Developers and Development Management Officers, a checklist has been prepared which guides applicants and officers through the requirements of the LDO and Design Code.

A completed checklist for the proposed development must be submitted to the council prior to development commencing.

1.2.4 Who should use the Design Code

The code is intended to be a coordinating framework for the long term development of the site. It should be referred to and used by the following stakeholders involved in the development:

- Landowners
- Developers
- Businesses
- Agents working on behalf of landowners, developers or businesses
- Braintree Council Development Control Officers
- Essex County Council Highways Authority Officers

1.2.5 The Proposed Architecture and Design Code

The architectural policy of the Design Code is to:

- Create good design, which is a key aspect of sustainable developments and indivisible from good planning.
- Create a sense of identity and recognition.
- Provide a positive improvement in the quality of the built environment.
- Take the opportunity for improving the character of the area
- Allow for flexibility and be commercially sensitive.

The Language & Guidance

The language is designed to represent the current institutional standards and expectations, whist allowing the freedom for architectural expression. The architectural guidance is designed to create buildings and settings with a timeless quality, so that it protects the appearance of the development.

The architectural design code guidance aims to encourage good design and use of materials that contribute to a sense of user wellbeing.

The design code is also a process to speed up the delivery of development, by providing clear standards as to what is considered acceptable design and therefore compliant with the planning process.

The document provides a palette of design examples, which set the scene for the standards to promote good and exciting buildings through the choice of materials, colour, mass and articulation.

1.2.6 The Proposed Landscape and Design Code

The landscape policy of the design guide is to:

- Create a distinct place and set a new standard for a verdant, healthy business park environment and ecological landscape.
- Ensure a landscape that will thrive for the long term by developing the public realm and private landscape in line with the aims and aspirations set out in the Design Code.

Landscape Vernacular

The Design Code sets standards for soft and hard landscape, boundaries, lighting, parking and drainage. The standards are specified in relation to Zones, Character Areas and Street Hierarchy to provide a consistent approach to the landscape.

The Language & Guidance

The language is designed to represent and follow current legislation and best practice guidance, whilst allowing for individuality in the specific plots.

Sections, plans and illustrative views are provided as examples to follow and to help developers and the Local Authority to visualise the proposed spaces.

1.3 Aims & Aspirations

1.3.1 Introduction

Horizon 120 is looking to set a precedent for creating a healthy 'working lifestyle.' It seeks to move away from the traditional hard, car dominated, concrete 'plots' with little atmosphere or nature, to a verdant, sustainable, welcoming environment that offers local amenities to enjoy and explore for both the employees and visitors.

This will create a distinct place that supports a new model of a healthy, holistic 'working lifestyle.'

1.3.2 Horizon 120 Aims & Principles

- **To promote activity, permeability and accessibility**
  A network of walkable, runnable routes and cycle ways will provide green, interesting paths through the business park. These provide important internal links as well connecting to surrounding amenities. Amenities within the business park will include a woodland park extension to Great Notley Country Park with informal exercise and seating opportunities. A local hub with formal amenities such as a café and gym will provide opportunities for outdoor eating and socialisation.

- **To sensitively embed the buildings and landscape within their setting**
  Proposals should be considerate of and integrated into the surrounding landscape and setting. The new landscape should be inspired by the surrounding existing nature and landscape. Buildings should be set within the landscape and appearance and height should be considered in relation to the location.

- **To implement an integrated and green approach to vehicular access**
  A good, solid infrastructure is essential to the function of a business park. A clear hierarchy of streets will be established with integrated SuDS solutions where possible. Street trees and planting will form a fundamental part of the design language.

- **To encourage use by the local existing community**
  The addition of a woodland park extension and a pond area will invite the existing community to discover and explore the business park. The Horizon hub provides an alternative local meeting space and place to stop for a coffee.

- **To integrate and enhance biodiversity and ecology through (established) sustainable methods and systems**
  The planting and tree strategy will be carefully considered and look to maximise biodiversity and ecology. Connections with the adjacent Country Park and farmland will provide and establish green corridors for wildlife. SuDS and swales will form an essential part of the street and path network and feel naturally part of the landscape.

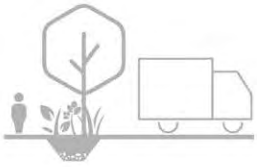
Activity, Permeability & Accessibility

- Exercise & play
- Landscape amenities
- Improved routes and links

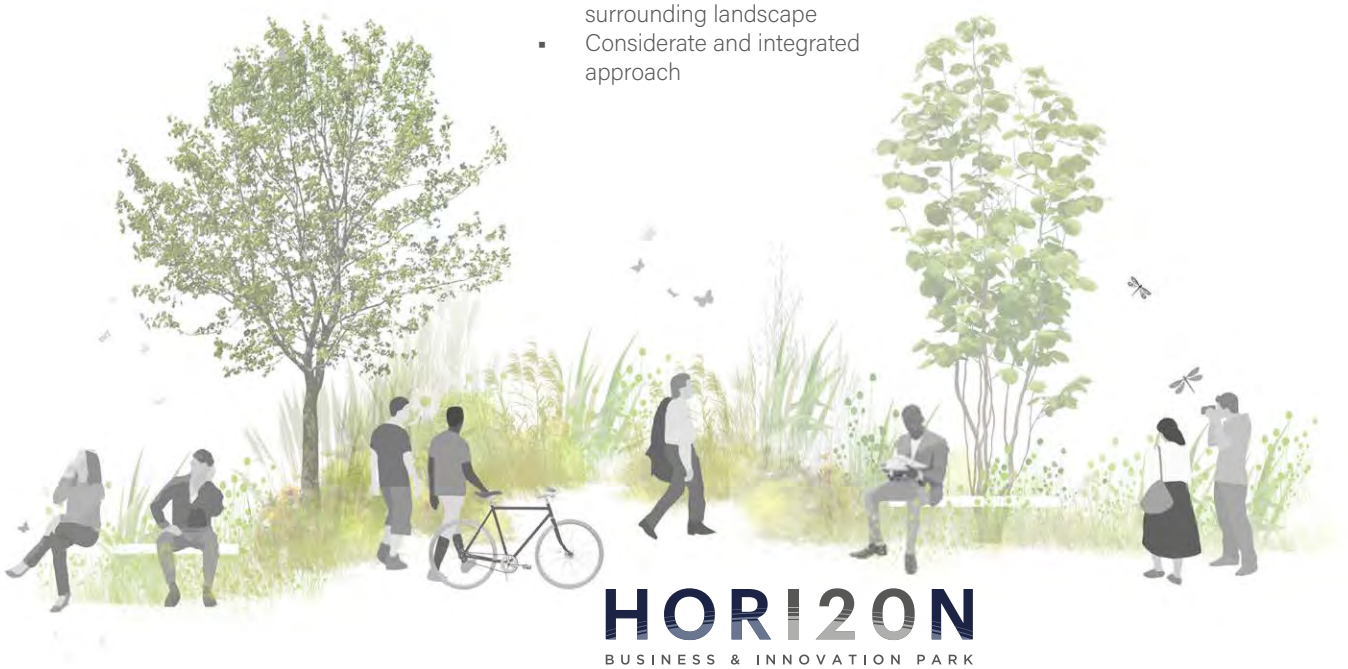
Sensitively Embed the Buildings & Landscape

- Preserving and responding to surrounding landscape
- Considerate and integrated approach

Green Approach to Vehicular Access



- Integrated SuDS
- Green buffers & street trees
- Pedestrian & cycle routes



Integrate & Enhance Biodiversity

- Links with country park
- Green corridors
- Rich ecology

Encourage Use by the Local Community

- Public access
- Welcoming hub
- Access to nature

1.4 Illustrative Masterplan Views

1.4.1 Introduction

Illustrative masterplan views/sketches have been developed to give future occupiers an idea of the overall look and feel of Horizon 120.

Indicative massing and development blocks are included to offer insight into the accepted scale of development. All building blocks follow the standards set out in the Design Code.

The views show how the masterplan sensitively sits in the surrounding setting and illustrates the importance of providing a green, biodiverse landscape in line with the vision for Horizon 120.

Illustrative view of streetscape

Illustrative view of Horizon Hub

Illustrative vignette of Horizon Park

Illustrative vignette of swale landscape with rest stop / meeting point

2. Site Context

2.1 Site Context

2.1.1 Introduction

Set on the edge of Great Notley Village in Essex, the site benefits from good transport connections, both by road (M11 to London and Cambridge) and rail (Braintree train station). Given the strategic location, it is an opportune location for a range of businesses, and in the last decade business parks have established in the locality.

With farmland and Great Notley Park on its borders, the setting is verdant, with walking trails and bridle paths that link to the wider countryside.

2.1.2 Context & Connections

The site is located to the south of Great Notley Country Park across the A131 from Great Notley Village. To the south is Slamseys Farm and Store, a working farm which grows food crops, christmas trees, makes Slamseys Gin, teaches printmaking, stores caravans and rents out barns and containers. To the west farm land extends out into the countryside. A solar farm can also be found.

Two business parks can be found within 2km of the site - Skyline Business Centre and Lynderswood Business Park. Chelmsford City Racecourse sits 2km south of the site.

The site is well connected by bus to Great Notley Village and further connection to Braintree train station along London Road.

A series of bridle paths connect the site to the surrounding countryside - including Great Notley Country Park and Flitch Way Walking Trail to the north and Chelmsford City Race Course to the south. A pedestrian crossing across the A131 links the Village to the country park and the site.

2.1.3 Nature & Landscape

The site benefits from a verdant, ecological setting and the popular Great Notley Country Park as a neighbour. The Park offers a range of amenities for all ages and abilities as well as a diverse range of habitats for wildlife. Nature conservation is further encouraged at nearby Cuckoo Woods.

The locality also offers paths and trails including Flitch Way, which passes numerous sites and stations along the way.

Great Notley Country Park large pond/wetland areas

Flitch Way walking trail

Cuckoo Woods

Slamseys Farm & Store

- Site Boundary
- Nature Reserve
- Pedestrian pathway
- Public bridleway
- Flitch Way Walking Trail
- Bus stop
- Pedestrian road crossing to Great Notley Country Park
- Site access to Great Notley Country Park

Plan 2: Context & Connections

2.2 Site Qualities

2.2.1 Introduction

The site is arable farmland set within tree and hedge lined boundaries. A series of drainage ditches connect the site to the surrounding ponds and drainage network.

The site falls 10m from south to north, with the gradient becoming steeper as you approach the north half of the site and then becoming more shallow again in the north-west corner by the country park.

There is little ecological value across the site, with the exception of some species rich hedgerow and a population of great crested newts in the wider surroundings.

The development proposals for the site has an important opportunity to enrich existing habitats and introduce and promote biodiversity across the site with the introduction of new varied habitats.

2.2.2 Topography & Levels

The site falls 10m from south to north, with the gradient becoming steeper as you approach the north half of the site and then becoming more shallow again in the north-west corner by the country park.

Because of this the site feels flat when you stand in the middle. It is only when you are in the north-west corner that you notice the steeper bank up to the middle of site.

There is an opportunity to integrate the site-wide drainage strategy with the site topography.

2.2.3 Existing views

The hedge and tree boundaries provide important visual connections and boundaries to the surroundings. Importance will be placed on retaining these through any proposals.

The views to Slamseys Farm to the south are of open character. There is currently no hedge or fence boundary here.

2.2.4 Existing Habitats

<u>Habitats found on adjacent and nearby land:</u>

- Amenity grassland
- Meadow areas
- Lakes
- Ponds
- Extensive ditch network
- Hedgerows
- Managed woodland
- Dead wood habitats

These surrounding habitats support a rich and varied range of wildlife, including birds, bats, reptiles, amphibians and mammals.

<u>Ecology Report identifies the following habitats on-site:</u>

- Arable land
- Hedgerow (species poor - not nationally important except northwest quadrant because it runs alongside the bridleway)
- Pond
- Paddock
- Scrub
- Ditch (wet and dry)

<u>Hedgerow</u>

The hedgerows provide distinct farmland boundaries to the site and provide important visual connections to the surrounding farmland and Great Notley Country park to the north.

Most are species poor, with the exception of a section to the northwest corner which is species rich with trees.

<u>Trees</u>

There is a distinct tree belt along the A131 road corridor to the East along the site boundary. The trees here are all mature and provide an important wildlife corridor along the road.

The trees also screen the site from Great Notley. All trees are deciduous, making the views into the site more transparent and visible during the winter months.

All proposals must adhere to information, findings and methods as set out in the below Aboricultural Reports:

- Arboricultural Impact Assessment, Horizon 120, Great Notley, Essex (16th October 2019) by PJC - ref: 5280/19-02 Rev 01.
- Arboricultural Impact Assessment, Horizon 120, Great Notley, Essex (20th September 2019) by PJC - ref: 5280/19-02.
- Arboricultural Method Statement, Horizon 120, Great Notley, Essex (20th September 2019) by PJC - ref: 5280/19-03.

<u>Ponds</u>

There is one pond set within mature trees in the southeast corner of the site. Great crested newts have historically been recorded in this pond as well as surrounding ponds. Current surveys identified no onsite presence of newts, but continued presence in a pond over 200m to the west. This off site population will need to be protected as part of any development proposal.

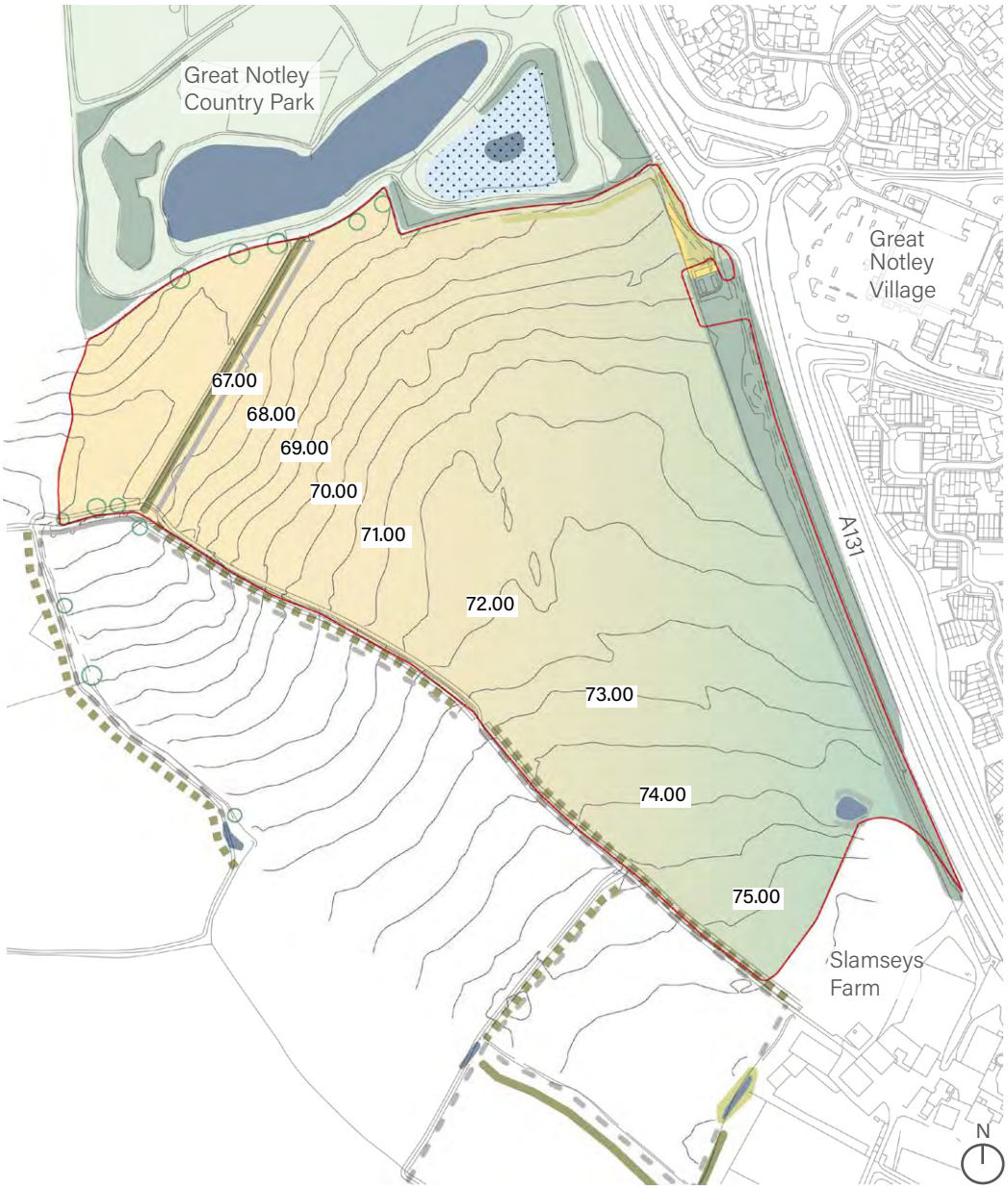
2.2.5 Mitigation

Nearly all the wildlife interest is confined to the boundaries, as the majority of the habitat on site is wildlife-poor arable farmland. Although the site is taken up by predominantly arable farmland, the presence of ponds, hedgerows and a country park adjacent suggest the potential for a wide range of species.

The Ecology Report has identified that without mitigation, the development would impact:

- Great Crested Newts (significantly)
- Skylarks (significantly)
- Bats (minor)
- Nesting birds (minor)

Plan 3: Existing Site Context



2.3 Infrastructure Applications

2.3.1 Introduction

Two planning applications have been granted on the site to assist in the early delivery of some of the strategic landscape and infrastructure.

2.3.2 Earthworks

Planning application 19/01616/FUL was approved in December 2019 as the first phase of Horizon 120. It grants planning permission for engineering works to re level the site to provide building plots and three internal side roads.

2.3.3 Spine Road

To enable access into the site and the delivery of the main spine road at an early stage, application 19/01525/FUL was approved in February 2020.

This grants permission for two access points into the site: one from the A131 Cuckoo Way roundabout and the other directly from the A131 towards the south of the site.

The planning permission also includes a main spine road connecting the two accesses. Side roads will connect to this spine road as set out in this Design Code. Individual plots will be accessed directly from the side roads.

2.3.4 Relationship with LDO

The two approved applications grant planning permission for some initial infrastructure within Horizon 120, which will be delivered under these permissions.

Planning permission and design guidance as well as standards for the rest of the Horizon 120 LDO site, including other roads, landscaping and individual plots are provided within the Horizon 120 LDO and design code.


Refer to
721-FH-XX-00-DT-L-102
Horizon Gateway
General Arrangement Plan
Refer to Engineer's
drawings and details for
hard landscape proposals
within Highways Land
Refer to
721-FH-XX-00-DT-L-103
Horizon Park General
Arrangement Plan
Scale 1:500


Refer to Engineer's
drawings and details for
hard landscape proposals
within Highways Land
Scale 1:500

3. Business Park Strategies

3.1 Zonal Plan

3.1.1 Introduction

Zones are used within the LDO to identify what uses are permitted across the site.

To the north uses are more restrictive to reflect the proximity of the Country Park. The northern part of the site also allows more ancillary uses, with more traditional industrial uses allowed further south.

3.1.2 Zone A - Horizon Hub

The Hub area will become the landmark feature and represent the benchmark for quality design, materials and creativity. As such a greater emphasis on building design, mass, layout and materials within this zone will be required.

It will become a place to encourage social interaction and activities by constructing a creative design of the public realm, the soft and hard landscape layout, vistas, sunlight and daylight and the layout of the buildings.

The uses within the Horizon Hub Core combined with the street activities and events within the square will help to create a dynamic and sustainable environment, not only for the workers within Horizon 120, but locally. It will be a social destination contained within an aspirational and contemporary building setting.

Permitted uses with Zone A are:

- C1 Hotel
- E(g)(i) Office
- E(g) (ii) Research and Development
- E(g) (iii) Industrial Process

Within Zone A, a Horizon Hub Core will be created, comprising the uses listed above and the below:

- E(a) Shop
- E(b) Restaurant and Café
- E(d) Indoor sport, recreation or fitness
- E(e) Medical or Health Services
- E(f) Early Years Childcare, Day Nursery or Preschool
- Sui Generis Event Space for events including, but not limited to, conferences, parties and private events

The hard landscape should allow for some short term parking to use the local amenities and attend events or markets. The parking should follow principles set out in section 4.7 'Plot Front Boundary Landscape' and section 6.10 'Parking Standards.'

The external space shall encourage outside eating and socialising with shading from canopies and trees.

Architectural incidentals and public art including sculptures should be considered, as this will create a unique brand and landmarks.

Servicing shall be from the rear with consideration that all elevations may be viewed as front elevations.

3.1.3 Zone B - Office, R&D, Light Industrial

This zonal allocation will create a technologically informed business park containing offices, start-ups, high-tech light industrial and R&D.

Permitted uses with Zone B are:

- E(g)(i) Office
- E(g)(ii) Research and Development
- E(g)(iii) Industrial Process

The setting for this zone shall be identified by the quality of the inspirational architecture, the landscape setting and visual and physical permeability around and through the site which will lead back to the hub in Zone A.

This zone should inspire creativity, and this can be achieved in part by the inspirational design of the forms within it and the environment which will be created. Meeting nodes within the public spaces can encourage dialogue with other business uses and perhaps generate further collaboration and development. This zone is a key marker in establishing the direction of Horizon 120 as the place for high end business.

3.1.4 Zone C - Office, R&D, Light Industrial, Manufacturing, Storage and Distribution

This zone contains the larger architectural elements, which may be more functional from a design perspective, and will make important contributions to the local economy.

Permitted uses with Zone C are:

- E(g)(i) Office
- E(g)(ii) Research & Development
- E(g)(iii) Industrial Process
- B2 General Industrial;
- B8 Storage or Distribution
- Sui Generis Bus Depot including welfare facilities
- A mixed use comprising any of the preceding uses at a-e under Class 3 of Schedule A

The Design Code will set standards to maximise the architectural opportunities of large buildings. Combined with the landscape, these will align with and contribute to the overall vision of the scheme.

3.1.5 Zone D - Park

This zone is allocated for the creation of a parkland landscape. Attenuation ponds and informal paths will offer recreation opportunities.

Plan 4: Proposed Zonal Plan

Zone A:
Horizon Hub

Zone B:
Office, R&D, Light Industrial

Zone C:
Office, R&D, Light Industrial, Manufacturing, Storage and Distribution

Zone D:
Park with attenuation ponds and informal paths

3.2 Character Areas

3.2.1 Introduction

A gentle hierarchy of spaces to help with natural way-finding will be explored. All character areas are to promote an active and healthy landscape. Clear circulation routes will be created across the business park. These are essential to encourage activity and fitness and to provide easy access for pedestrians and cyclists that is separate from vehicles.

Main amenity spaces are to be connected to existing and proposed pedestrian routes and to the surrounding landscape and amenities.

Character areas are related to surrounding and proposed land use and detailed to link and promote wayfinding. Names of character areas will be used to promote wayfinding across the business park.

3.2.2 Horizon Gateway

- Creates a distinct, welcoming and verdant entrance to Horizon 120.
- An architectural incidental/ sculpture within this location to strengthen the business park's identity.
- Uses natural elements such as planting and trees to highlight the entrance and improve visual links between the site and surroundings.
- Displays high quality materials upon entering the business park.
- Incorporates sensitive feature lighting and planting to provide a natural landmark and gateway to the site.

3.2.3 Horizon Hub

- A local hub for connecting visitors, the local community and the working community of the business park.
- The centre for the commercial working environment and social interaction.
- Provides community amenity that will attract visitors throughout the week, even outside daily working hours.
- The external space will encourage and provide opportunities for outdoor eating and socialising.
- Playful art and sculptures will help to create a sense of place and offer incidental play opportunities.
- Use of high quality materials continue from the entrance.
- Integrated planting and SuDS across the space.
- Pedestrian links to the entrance, crossing from Great Notley Village and Great Notley Country Park.
- Materials and planting to consider a variety of scales to reflect both human scale as well as buildings and setting parking and buildings in the landscape.
- A flexible outdoor space for events and markets.
- Short term visitor parking to allow people to attend events or markets.

3.2.4 Horizon Parkview

- Character of this zone will have a close relationship with the country park to the north.
- The built forms shall create a sense of place and movement nodes to allow for social interaction.
- Smaller plots with opportunities for companies to share buildings and spaces will also be suitable.
- Pedestrian access through the space is essential to improve connection to the Park and Great Notley Country Park.
- Integrated, green parking and access roads.
- Promote planted and active frontages to streets.
- Use of quality and inspirational architecture.
- Visual and physical permeability around and through the site.

3.2.5 Horizon Glades 1 & 2

- Land use to include start-ups, grow-on units, hi-tech and R&D units.
- Smaller plots with opportunities for companies to share buildings and space.
- Stimulating visual buildings that are also functional and commercial.
- Use of permeable materials and smaller scale materials.
- To provide integrated, green parking and access roads.
- Promote planted and active frontages to streets.
- Amenity opportunities and pedestrian access through the areas is essential.

Plan 5: Proposed Character Areas

3.2.6 Horizon Paddocks 1 & 2

- Larger scale plots available for a variety of uses including manufacturing.
- Buildings remain creative in design through careful choice of materials, colour and profiles.
- Use of robust and readily available landscape materials.
- Larger scale trees and planting to complement larger building units.
- Where feasible pedestrian access should be promoted through large plots to aid overall circulation on foot
- Promote use of green roofs and green facades to ground and set buildings in the landscape.

3.2.7 Horizon Fields 1 & 2

- Potential for larger scale plots for production and factory use.
- Layout of the plots locate service yards to the rear to reduce visual impact.
- Buildings remain creative in design through careful choice of materials, colour and profiles
- Use of robust and readily available landscape materials.
- Larger scale planting to complement larger building units.
- Promote use of green roofs (where possible).
- Inclusion of green facades to ground and set buildings in the landscape is essential.
- Potential for smaller plots to be used for electrical bus depot.

3.2.8 Horizon Park

- Woodland and wetland park to the north to form an extension to Great Notley Country Park.
- Proposed connections to both country park to the north and the rest of the business park to the south.
- Landscape to include informal seating opportunities.
- Soft landscape and planting to promote wildlife and biodiversity.
- Incorporation of woodland species and potential for areas with active woodland management to be explored.
- Creation of attenuation ponds to link to overall integrated SuDS strategy and to provide additional habitat for breeding great crested newts.
- Link to overall internal and surrounding pedestrian network.

3.2.9 Horizon Walk

- Perimeter walk along the north, west and south borders of the business park.
- Existing boundaries to be enhanced with new tree planting, hedges and meadow.
- Mounding to be used to create visual and sound barriers to the road where possible.
- Landscape to include informal seating opportunities.
- Soft landscape and planting to promote wildlife and biodiversity.
- Use of woodland species and areas for active woodland management to be explored.
- Link to overall internal and surrounding pedestrian network.

Horizon Gateway

Horizon Hub

Horizon Parkview

Horizon Glades

Horizon Paddocks

Horizon Fields

Horizon Park

Horizon Walk

3.3 Amenities - Health & Well-being

3.3.1 Introduction

The importance of providing a landscape that facilitates and supports a healthy 'working' lifestyle is at the heart of the thinking behind Horizon 120. The landscape and connecting amenities which form part of the development offer scope for lunchtime exercise (running, jogging or formal exercise activity), socialising and quiet relaxation.

Open space within the local hub will be flexible to allow for different uses such as events and markets, which local business park users can take advantage of. Creating an innovative and green environment for people to work in and to enjoy will encourage and benefit both physical and mental well-being.

3.3.2 Horizon Hub Core

Must include the below amenities:

- Formal and informal seating opportunities.
- Spill out space for cafes.
- Flexible space for events and markets.
- Incidental art or playful sculptures.
- Short term visitor parking to allow people to attend events or markets.

Must follow the below principles:

- Planting and trees to form an essential backbone and link to surroundings.
- Use of quality materials.

Must include the below facilities:

- To include co-working space, gym, and crèche as well as cafés and restaurant.
- For use by employees and local community.

3.3.3 Parks & Nature (including Green Corridors)

- Must link with internal and surrounding pedestrian paths.
- Must provide informal seating opportunities.
- Must offer informal exercise routes and opportunities.
- Must promote biodiversity and ecology.
- Could include opportunity for educational interpretation boards.

3.3.4 Walkable Routes and Cycle Paths

- Must link with local amenities.
- Must be safe and accessible for all.
- Must be separate or set back from the main vehicular roads.
- A hierarchy of routes are to be set out as per plan 6: Proposed Amenities Plan overleaf.

3.3.5 Entrance Gateway

- Must present a welcoming entrance space.
- Must link with internal and surrounding pedestrian paths.
- Must promote biodiversity and ecology.
- Must include Informal seating opportunities as part of the landscape.

3.3.6 Users

Horizon 120 must offer amenity for a range of different users, including:

- Employees of business park units.
- Business visitors to units.
- Local community utilising the local hub or walking along the green corridors and experiencing the parks and nature.
- Local schools may wish to utilise the parks and nature and could benefit from insights into the range of different vocations and careers at work within the business park.

3.3.7 Delivery

All set out amenities must be provided. General standards must be adhered to as set out in Section 6 'General Standards.'

3.3.8 Walkable Routes and Cycle Paths Standards

The foot and cycle path network forms an essential part of the landscape to Horizon 120. There are 3 categories of paths and these are set out below.

<u>1. Main road network paths:</u>

- Foot and cycle path must follow principles as set out in section 3.5 'Road Corridor Principles' and 5.1 'Road Corridor Landscape.'
- Footpaths must be provided on both sides of the road.
- Footpaths must be minimum 2m (W), increasing to 3m where there is a cycle path.
- Cycle paths must be provided on one side of the road as set out in plan 6: Proposed Amenities Plan overleaf.

<u>2. Paths through/in between plots:</u>

- Footpaths must be bordered by planting and trees.
- Footpaths must be minimum of 1.8m (W).
- Footpaths must follow principles set out in section 4.6 'Plot Landscape Standards.'

<u>3. Perimeter paths:</u>

- Footpaths must be bordered by planting and trees.
- Footpaths must be minimum of 1.8m (W).
- Footpaths must follow principles set out in section 5.2 'Perimeter Buffer Landscape.'

The standards and principles set out above must be followed. Lighting for all foot and cycle paths must be provided as set out in section 6.9 'Lighting.'

Plan 6: Proposed Amenities Plan

Temporary activities

Outdoor formal activity

Informal exercising

Quiet relaxation

Informal exterior meeting spaces

Strategic Landscape

- Parks & Nature
- Green Corridor
- Horizon Hub
- Entrance Gateway

Foot & Cycle Paths

- 1. Main road network pavements
- 2. Paths through/in between plots
- 3. Perimeter paths
- Cycle paths
- Rest stops / meeting points
- Path network surroundings

3.4 Street Hierarchy

3.4.1 Introduction

The importance of establishing a street hierarchy is recognised in order to set a palette of hard and soft materials to be used across the site. The street hierarchy apply to the main road network as illustrated in plan 7: Proposed Street Hierarchy overleaf.

The hierarchy does not alter the width of roads or pedestrian paths, but is set through the characteristic of the soft landscape and tree species.

Three categories of roads are proposed:

- Entrance Road
- Secondary Road
- Green Link

All roads must have dedicated, separate pedestrian pavements, with the exception of the second entrance. There must also be a good network of additional pedestrian paths.

3.4.2 General Description

The entrance road leads into the site and spans the length of zone A to the north. A secondary road leads further into the south of the site. These roads together form the main road network through the site. Green links connect the entrance and secondary roads and reach out to connect the business park with the surrounding landscape.

The materiality of all roads is to be robust and cost effective.

3.4.3 Rest Stop / Meeting Point

Rest stops / meeting points with seating, informal exercise equipment and signage must be provided. These should be incorporated at regular intervals - with at least one between each main crossing as set out in plan 7: Proposed Street Hierarchy overleaf.

3.4.5 Pedestrian Pavements and Paths

Continuity in material and character of the pedestrian paths (both cycle and footpaths) is important to ensure legibility and wayfinding across the site.

Pedestrian paths away from the roads are to follow the principles in plan 7. Zone A are to provide public pedestrian access paths through development parcels/plots to improve permeability and accessibility. Due to the larger units anticipated as part of Zones B & C, this is not a requirement here, but where possible still welcome.

3.4.6 Connection to Surrounding Pedestrian Network

All pedestrian paths and pavements should connect and promote connectivity to site amenities and the surrounding pedestrian network. Bridleways and rights of way must be considered, respected and retained as part of any development. These must follow guidelines for bridleways.

3.4.7 Roundabouts

Roundabouts must be soft landscape with meadow, hedge and tree planting to give these a natural feel in line with the overall aims and aspirations for Horizon 120.

3.4.8 Entrances

The main entrance for both pedestrian and vehicular access must be from the existing roundabout from the A131.

The secondary entrance must be at the southern end of the site and shall be for vehicular access only. This entrance shall take most of the heavy industrial traffic into the site.

3.4.9 Pedestrian Crossings

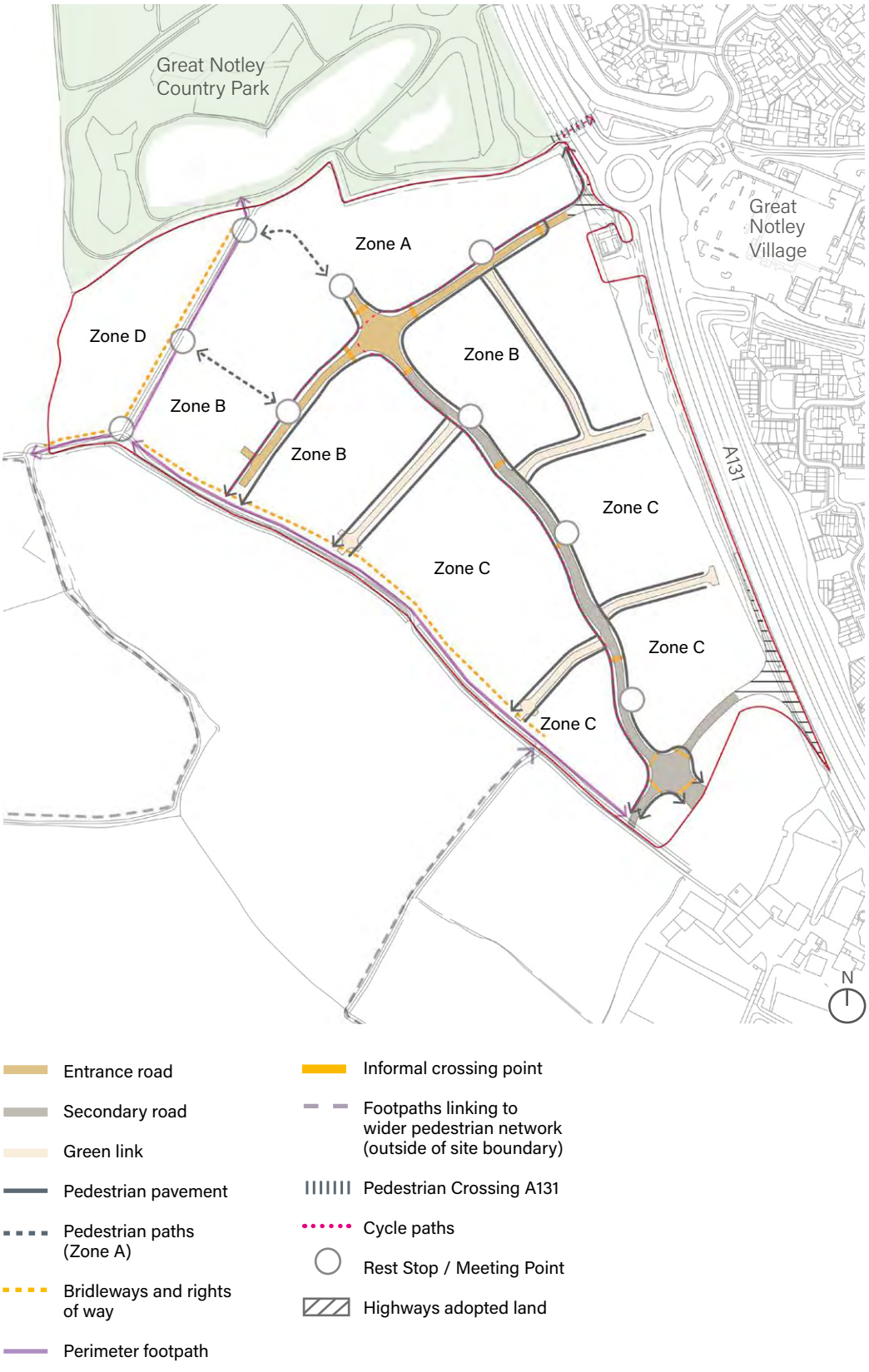
Informal pedestrian crossings must be included as per principles set out in plan 7 overleaf. Tactile paving and dropped kerbs must be provided in line with building regulations.

3.4.10 Active Frontages & Blank Facades

Active frontages are encouraged to face all roads and public realm where possible. Active frontages must face the entrance road - regardless of zonal allocation. Elsewhere any blank facades must be screened in accordance with standards set out in section 4.7 'Plot Front Boundary Landscape' along the main road network.

Illustrative vignette of road corridor landscape with rest stop / meeting point

Plan 7: Proposed Street Hierarchy



3.5 Road Corridor Principles

3.5.1 Introduction

The Road Corridor Landscape is defined as the distance between the plot boundary and the main road network referred to in this Design Code. Setting dimensions and options for the road corridor landscape:

- Provides breaks and views between the building forms on both sides of the road.
- Improves experience of the site at the human scale.
- Creates an inviting and legible streetscape.
- Helps achieve the site's ecological aspirations.

The road corridor landscape dimensions are set at either 6.0 - 7.0m or 8.0 - 9.0m in response to character areas, street hierarchy and proposed cycle routes. The road corridor are predominately soft landscape areas incorporating trees, shrubs and meadow planting with integrated SuDS and informal amenity areas.

The road corridor landscape include the pedestrian footpath and cycle path as shown below.

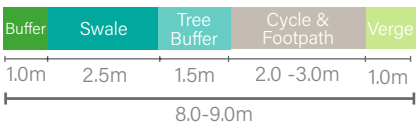
3.5.2 Road Corridor Composition

The road corridor landscape must follow the standards set out below as well as the 'Road Corridor Landscape' standards as set out in section 5.1. The charts below summarise the composition of each type distance as set out in Plan 8 overleaf.

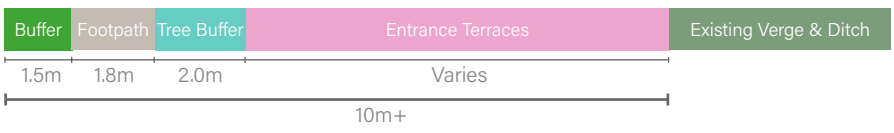
All footpaths identified in the street hierarchy in section 3.4 must be located next to and drain to either a swale or tree buffer. A planted verge must also be included along the road and forms a green division between the road and the footpath.

No1: 6.0 - 7.0m Buffer Example

No2: 8.0-9.0m Buffer Example



No3: 15.0m+ Buffer Example



Meadow entrance terraces are proposed to the main entrance to provide the buffer from the existing road A131 and to introduce a welcoming entrance to Horizon 120.

3.5.3 Building Set Backs From Plot Boundary

The proposed buildings within the plots must be set back from the plot boundary as per the minimum distances in section 3.6 'Building Heights.' This will ensure street trees have sufficient room to grow for the future as well as providing a minimum space between buildings along the main road network.

3.5.4 Road Corridor Landscape Types

There are 4 road corridor landscape types as listed below:

A: Road corridor with swale and tree buffer
- Entrance Road & Secondary Road

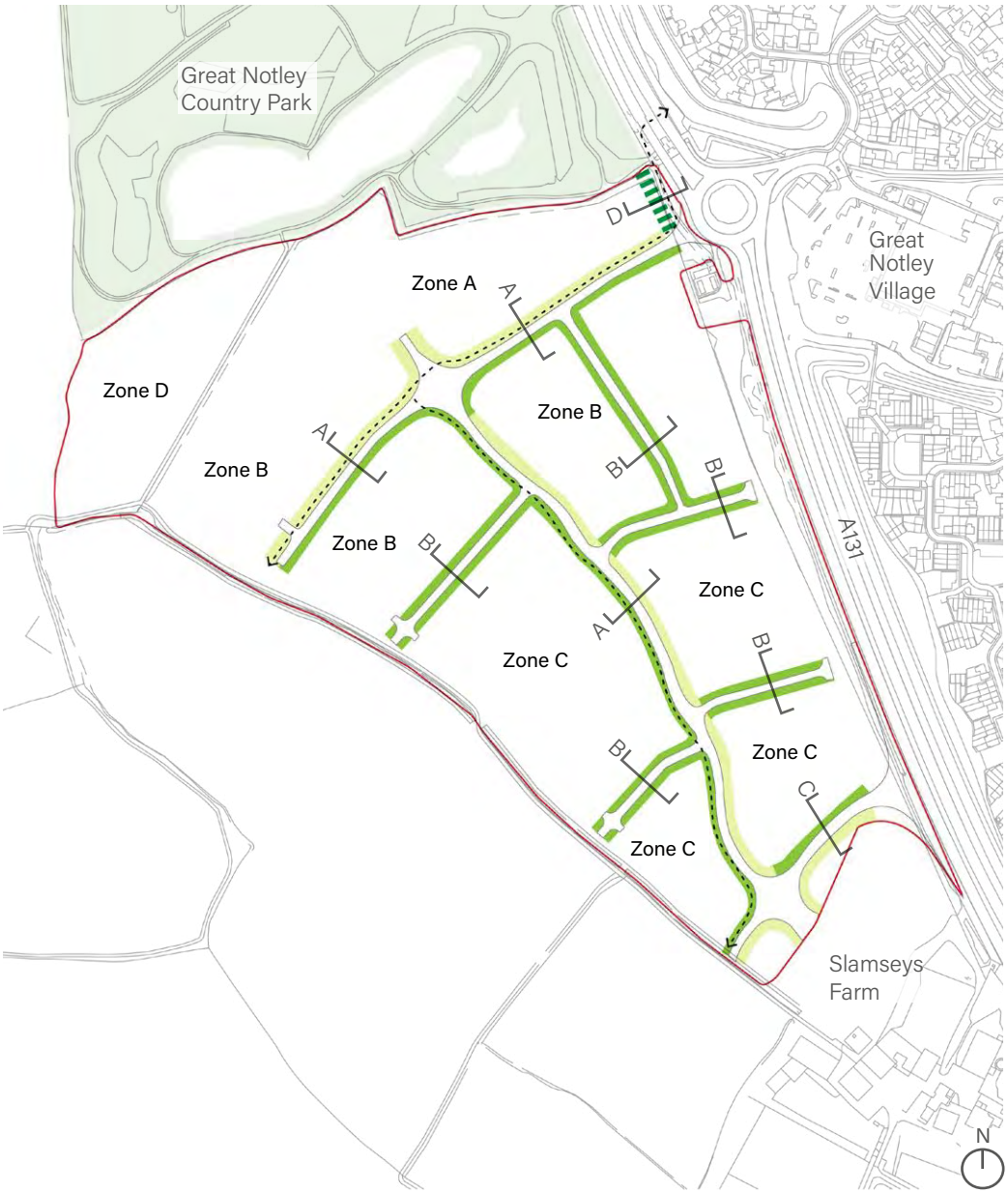
B: Road corridor with tree buffer
- Green Links

C: Road corridor to second entrance
- Secondary Road

D: A131 road corridor with entrance meadow terrace
- Horizon Gateway

These must be delivered as set out in plan 8 overleaf.

Plan 8: Minimum Road Corridor Principles Plan



No1: 6.0 - 7.0m Road corridor type

No2: 8.0 - 9.0m Road corridor type

No3: 10m+ Road corridor type

Road corridor type

Cycle path

A Road corridor with swale and tree buffer (Entrance & Secondary Road)

B Road corridor with tree buffer (Green Links)

C Road corridor to second entrance

D A131 road corridor with entrance meadow terraces

*Refer to Section 5.1 'Road Corridor Landscape' for further standards.

3.6 Building Heights

3.6.1 Introduction

This section sets out maximum building heights within the Horizon 120 site, taking into consideration its setting beside open countryside, its adjacency to Great Notley Country Park and the proximity of the listed building to the south-east.

Buildings within the site require a sensitive approach to be taken with regards to scale, mass and choice of material. Therefore, the heights will be restricted to the plan overleaf and standards set out in this section.

3.6.2 Site Wide Principles

All buildings within the site must adhere to the Building Heights Plan in this section.

The building heights have been informed by a careful analysis of the potential visual impact of the buildings to the surrounding environment. The analysis identifies that the impact is greater towards the south adjacent to Slamseys farm and Country Park and therefore the height should be limited to 13m along the boundary. Elevations along this boundary should have substantial landscaping.

As part of achieving a high quality design, buildings must be stepped in from the boundaries as shown in the landscape section of this code. The distances the buildings are set back do vary depending on each boundary. The distances in this section relate to the location of buildings only and not the extent of plots. For further information on the minimum perimeter buffer landscape please refer to Section 5.2 'Perimeter Buffer Landscape.'

To further respond to any sensitivities at the boundaries and create visual interest in the site, the maximum height is set at 13m around the outside of the site. This subsequently increases to 14.5m as buildings get further away from the boundaries. Multi-height buildings are acceptable subject to compliance with the height restrictions as set out.

The building height is defined as the total measurement from the ground to the highest point of anything attached to or forming part of the building. This includes any roof top plant rooms, mechanical plant, lift over-runs and balustrades. Any plant is to be a minimum of 2m from the front of any elevation facing a main road.

3.6.3 Zone A – The Hub Specific Principles

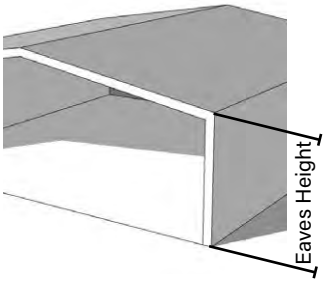
In addition to the site wide principles identified in 3.6.2, within Zone A buildings must be a minimum of two storeys to encourage efficient use of space and the creation of the hub. It is anticipated that shops, cafés, etc, will be located on the ground floor with office and meeting spaces above. To assist in achieving this, the ground floor of buildings should be a minimum of 3.5m floor to floor to allow flexibility of uses.

3.6.4 Set Back From Plot Boundary

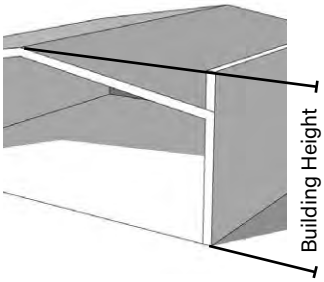
All buildings must be set back from the plot boundary. Refer to plan 9: Building Heights Plan overleaf for distances.

3.6.5 Summary

- A buildings height can be influenced by the facade material, orientation, colour and layout of the cladding.
- The maximum building heights are 14.5m and 13m (identified on plan overleaf).
- The maximum eves height of any building designed with a publically visible pitched roof is 10m within Zone A and along the boundary (identified on the plan overleaf) and 12m within Zones B and C.
- The maximum heights must include any lift over-runs and balustrades.
- Free standing balustrades are not considered as acceptable. They must be integral with the parapet.
- Roof mounted plant and machinery, must not exceed the maximum building heights.
- Flue pipes and vents must not exceed building heights unless agreed.
- Exposed fall roof restraints above or behind parapets are not acceptable. Folding or wire mansafe type systems are acceptable



Eaves height for visible pitch roof



Building height includes parapet and internal plant-rooms

Plan 9: Building Heights Plan

Zone A -
Max building height
Eaves: 10m
Overall: 12.5m

Zone B & C -
Max building height
Eaves: 10m
Overall: 13m

Zone B & C -
Max building height
Eaves: 12m
Overall: 14.5m

Min. 3m building set back from plot boundary

Min. 4m building set back from plot boundary

Min. 5m building set back from plot boundary

Zone A indicative boundary

** The distances marked out on the plan and referenced to in the text relate to the location of the buildings in relation to the site boundary and not the extent of the plot.*

For further information on the minimum perimeter buffer landscape refer to section 5.2 'Perimeter Buffer Landscape.'

3.7 Business Park Strategy Summary

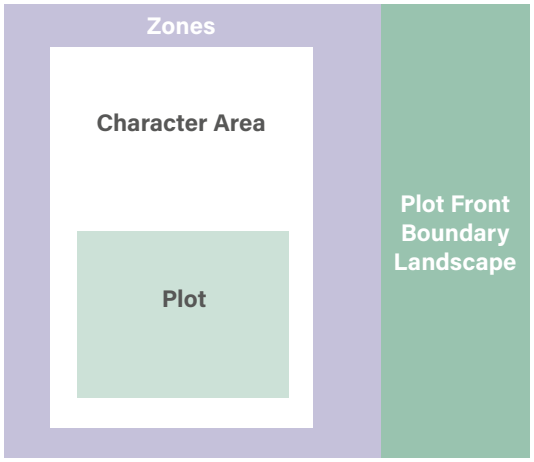
3.7.1 Introduction

This section sets out a summary of how the different zones, areas and hierarchies outlined by the Business Park Strategies in Chapter 3 relate to the detailed Plot Development Standards explained in Chapter 4 and the Strategic Landscape Standards in Chapter 5.

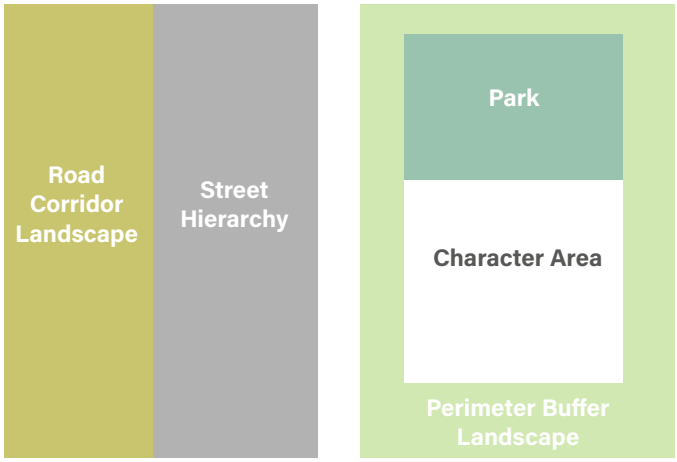
The flow diagrams opposite illustrate the relationship between relative sections with regards to both architecture and landscape.

This will make it easier for both the Local Authority and developers to cross reference the correct sections of the Design Code.

Plot Development Areas



Strategic Landscape



Both developers and the Local Authority will need to read the whole Design Code for reference. Specific chapters have been set up to relate especially to Plot Development Areas and Strategic Landscape for easy reference.

3.7.2 Plot Development Areas

The below sections set out the standards that are relevant to the Plot Developments Areas and these must be followed:

Architecture:
Zones, Character Areas, Building Heights, Building Use Class.
Landscape:
Zones, Character Areas, Plot Landscape Standards and Plot Front Boundary Landscape. The Road Corridor Landscape section will also need to be reviewed in relation to planting to plot boundaries.

The standards must also be cross referenced in the Compliance Checklist.

3.7.3 Strategic Landscape

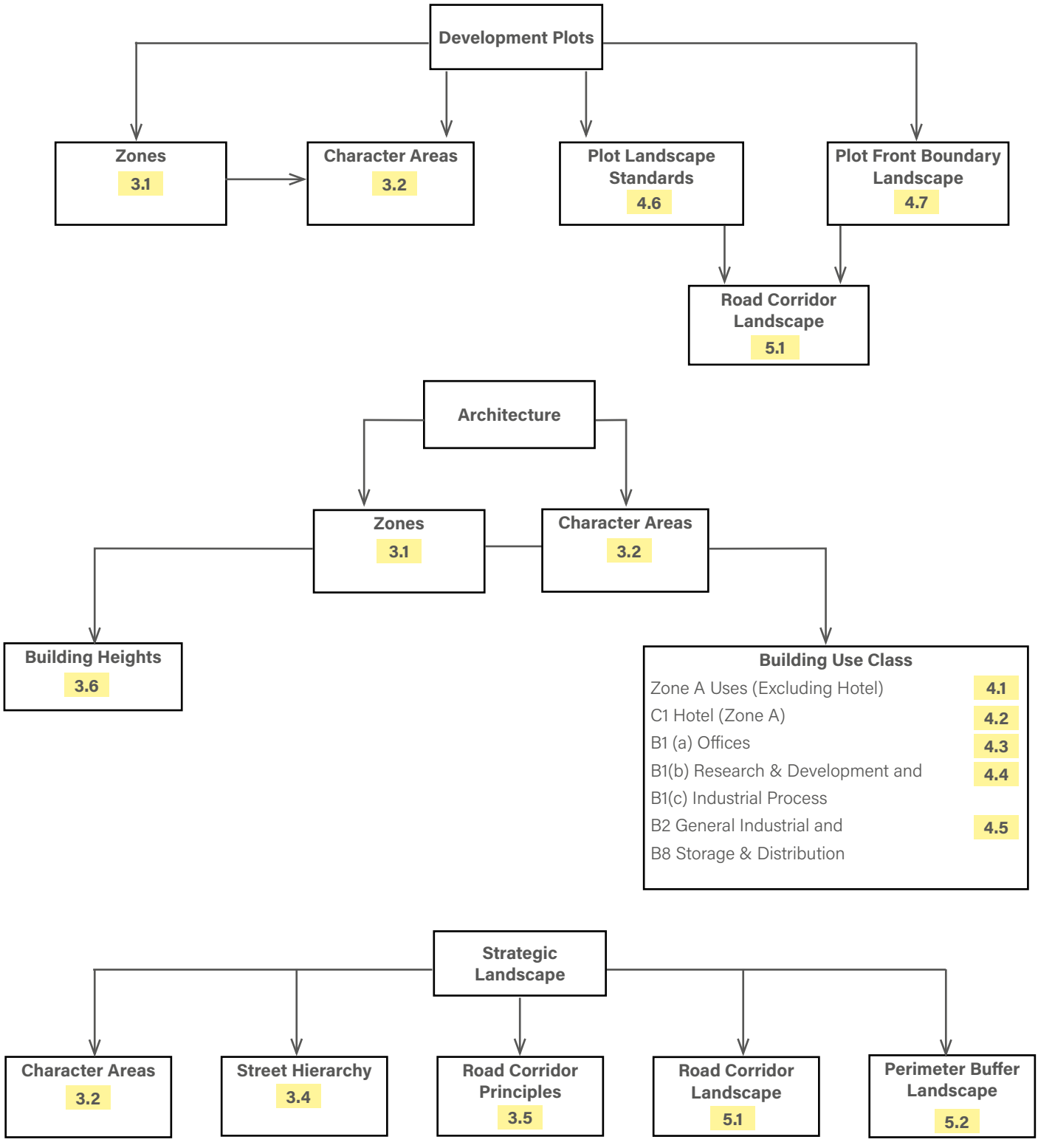
The Local Authority or the person appointed for carrying out the works to the strategic landscape must follow the standards in the sections below:

Character Areas, Street Hierarchy, Road Corridor Principles, Road Corridor Landscape and Perimeter Buffer Landscape.

The standards must also be cross referenced in the Compliance Checklist.

3.7.4 General Standards

Chapter 6 outlines the general standards which relate both to Plot Development Areas and Strategic Landscape. These standards must be followed and cross referenced in the Compliance Checklist.


Development Plots
Zones
3.1
Character Areas
3.2
Plot Landscape Standards
4.6
Plot Front Boundary Landscape
4.7
Road Corridor Landscape
5.1
Architecture
Zones
3.1
Character Areas
3.2
Building Heights
3.6
Building Use Class
Zone A Uses (Excluding Hotel) 4.1
C1 Hotel (Zone A) 4.2
B1 (a) Offices 4.3
B1(b) Research & Development and 4.4
B1(c) Industrial Process
B2 General Industrial and 4.5
B8 Storage & Distribution
Strategic Landscape
Character Areas
3.2
Street Hierarchy
3.4
Road Corridor Principles
3.5
Road Corridor Landscape
5.1
Perimeter Buffer Landscape
5.2

4. Plot Development Standards

4.1 Architecture - Zone A Uses (Excluding Hotel)

4.1.1 Building Vernacular and Materials

This section aims to provide principles which encourage good design standards and materials which will compliment the ethos of the Horizon 120 design guide. It recognises that the activities of such users require large regular boxes, however creative use of materials, colour and design can still achieve interesting buildings.

This section applies to all buildings within zone A other than the hotel.

Within the zone A area, all buildings must incorporate a higher standard of design and materials to create a high quality area and landmark zone.

4.1.2 Vernacular and Materials

- The facades shall have active frontages with no applied graphic materials to cover the active frontages.
- No external rollers shutters shall be used. Internal brick bonded slotted shutters are permitted.
- It is likely that there will be multiple frontages, ie facing the square, the country park and other buildings. All of the facades shall all be considered as "front elevations" and designed accordingly.
- Bin stores and refuse areas shall be integrated internally within the building footprints.
- No exposed service pipes, ducts etc. shall be visible on external walls on key elevations.
- External wall or floor mounted condenser units will not be accepted. Integral plant-room shall accommodate all M&E equipment.
- Flues and mechanical plant shall be disguised and roof mounted. They shall not be visible above the parapet.
- Active frontages will be required for the following:
    - Retail shops
    - Restaurant
    - Gym (50% obscure glass can be considered)
    - Convenience store
- Wall systems and cladding must be designed to minimise the spread of fire and evidence of this must be provided with the compliance checklist through confirmation of compliance with classes A1, A2 or B of the Euroclass system (or compliance with equivalent classes as amended or superseded).
- Any ancillary buildings, such as a security building, must meet the same architecture standard as the main building as set out in this section.
- All plots are encouraged to achieve Secured by Design in consultation with Essex Police.

The facades to the "health" unit shall have punched windows, which can have integral blinds, with a focal point at the entrance. Blank elevations shall include brick detailing, as shown opposite.

- The nursery may require greater privacy where facing the public realm in which case glazing is permitted if required. This does not preclude the use of other materials or clear glass as set out within this section.
- Building forms and uses can be linked via contemporary pergolas, or verandas.
- Signage to the retail units shall be located behind the glazing and a maximum of 450mm (H).
- Entrances shall be focal points and be creative elements.

<u>Materials</u>

The unique environment of the Hub area, allows for a greater flexibility of design and use of materials and form.

The materials which can be used in this area are:

- Brickwork with creative brick detailing (excluding wirecut and rusticated)
- Glass- opaque and clear
- Fret work
- Brass/copper products
- Zinc
- Stainless steel
- Anodised aluminium products
- Premium rigid boarding with secret fixings
- Aluminium/stainless steel mesh
- Stained and UV protected timber
- Natural stone cladding
- Polished concrete
- Through coloured render - 25% of facade only
- Glass curtain walling

The materials chosen must be of a high quality in terms of appearance and longevity. Bricks must comply with BS EN 771-1 and PAS 70 to ensure they are robust and suitable for the long term use.

<u>Roofs:</u>

- The roofs can be flat roof or pitched, with gables facing the public realm.
- Pitched roofs shall be powder coated metal standing seam with a gauge of 600mm centre to centre.

4.1.4 Validation Requirement

The applicant shall annotate on the validation elevation drawings, a full description of the materials, colour, finish, fixing detail and named manufacturer, so that compliance can be demonstrated.

Example of Facade with Punched Windows and Brick Detailing

Examples of Facades

4.2 Architecture - C1 Hotel (Zone A)

4.2.1 Zone A - Hotel C1

The design shall follow the philosophy of a punched rhythm fenestration design and articulated envelope. The Hotel is considered to be a landmark building and the design should respond to this.

4.2.2 Design Guidance and Standards

- The ground - first floor shall be a minimum of 4.5m (H) to allow for potential mixed uses.
- Building forms shall be flat roof construction with parapets. This will provide the opportunity to install PVC panels on the flat roofs without being visible.
- Green/Brown roofs will be encouraged where practicable and viable.
- Vents on the external facades should be incorporated within the glass window/curtain walling system, via an integrated louvre system.
- RWP's shall be incorporated into the design or located within the structure.
- Where building frontages face several roads, they shall all be considered as front elevations and the same level of design will be required.
- Refuse areas will be located out of site from the public.
- Entrance features shall be expressed and be a focal point of the facade.
- All plots are encouraged to achieve Secured by Design in consultation with Essex Police.

4.2.3 Vernacular and Materials

The images overleaf provide examples of facade designs for Hotel which shall be deemed acceptable. Materials listed below shall also be considered acceptable:

- Brick
- Brass/copper products
- Zinc
- Stainless steel
- Anodised aluminium products
- Premium rigid boarding with secret fixings
- Aluminium/stainless steel mesh
- Stained and UV protected timber
- Natural stone cladding
- Fret and mesh cladding
- Polished concrete
- Through coloured render - 25% of facade only
- Glass curtain walling

- The images overleaf convey the quality and creative elements which are considered appropriate for the Horizon 120 philosophy.
- Traditional flat metal panels with continuous ribbon glazing will not be considered acceptable.
- The facades are dominated by fenestration design, which therefore should be creative and articulated.
- Consideration should be given to external noise and appropriate acoustic attenuation include in the window design
- The building form should have solid elements which touch the ground, with transparent elements in-between.
- Wall systems and cladding must be designed to minimise the spread of fire and evidence of this must be provided with the compliance checklist through confirmation of compliance with classes A1, A2 or B of the Euroclass system (or compliance with equivalent classes as amended or superseded).
- Any ancillary buildings, such as a security building, must meet the same architecture standard as the main building as set out in this section.

The materials chosen must be of a high quality in terms of appearance and longevity. Bricks must comply with BS EN 771-1 and PAS 70 to ensure they are robust and suitable for the long term use.

4.2.4 Open Storage & Service Yards

- Service yards shall be located at the rear and enclosed with screening boundaries to a maximum of 2.0m (H).
- The boundaries shall be of the same quality as the building form.

4.2.5 Validation Requirement

The applicant shall annotate on the validation elevation drawings, a full description of the materials, colour, finish, fixing detail and named manufacturer, so that compliance can be demonstrated.

Acceptable Examples of Facades

4.3 Architecture - E(g)(i) Offices

The design code recognises that office developments can be the driver in creating high standards of architectural design, innovation, place setting and public realm.

The code identifies a minimum level of design, which will create a building standard and through its use of suggested vernaculars, it will create a Horizon 120 brand.

4.3.1 Design Guidance and Standards

- A high standard of architectural design is required. Designs must be creative, dynamic and use the principles as set out in this section.
- Green/Brown roofs will be encouraged where practicable and viable.
- Vents on the external facades shall be incorporated within the glass window/curtain walling system, via an integrated louvre system.
- RWP's shall be incorporated into the design or located within the structure.
  Where building frontages face main roads, they shall all be considered as front elevations and the same level of design will be required.
- A focal entrance point shall included within the design.
- Building forms shall be flat roof construction with parapets. This will provide the opportunity to install PVC panels on the flat roofs without being visible.
- Fire escapes shall be constructed within the building envelope. External fire escapes are not acceptable.
- The building orientation shall be considered as it will have a significant impact on internal conditions.
- The potential for passive systems shall be thoroughly be considered in the design. Consideration shall be given to building depths, so that a passive solution can be adopted.
- Vertical brise-soleil to east west elevations and horizontal to south elevations shall be considered to mitigate solar build up and reduce energy consumption.
- Visitor and employee parking can be located to the front. Parking to the front shall be restricted so as to minimise the visual impact of car parks on the public realm. Must comply with standards set out in section 4.6 'Plot Landscape' and 4.7 'Plot Front Boundary Landscape.'
- Passive ventilation and heat recovery systems shall be considered and adopted where possible.
- Where a building is a mixed use, if at least 50% of the floorspace is E(g)(i) office, the design standard in section 4.3 must be followed for the whole building.
- All plots are encouraged to achieve Secured by Design in consultation with Essex Police.

4.3.2 Vernacular and Materials

Approved materials for offices are as set out below:

- Brick
- Glass curtain walling
- Brass
- Brass/copper products
  Fret and mesh cladding
  Zinc
  Stainless steel
  Anodised aluminium products
  Premium rigid boarding with secret fixing
- Aluminium/stainless steel mesh
- Stained and UV protected timber
- Wall systems and cladding must be designed to minimise the spread of fire and evidence of this must be provided with the compliance checklist through confirmation of compliance with classes A1, A2 or B of the Euroclass system (or compliance with equivalent classes as amended or superseded).
- Any ancillary buildings, such as a security building, must meet the same architecture standard as the main building as set out in this section.

The materials chosen must be of a high quality in terms of appearance and longevity.

<u>Brickwork Facades</u>
The images overleaf provide examples of facade designs for offices, which shall be deemed acceptable. The principles are to encourage creative and vibrant facades.

- Creative brick detailing is encouraged to break up blank facades.
- Where windows are inset, they shall be 100mm (D).
- Flush facing frames can also be considered.
- Consideration should be given to the overall fenestration design and layout. ie random layout or a geometric design.
- Wire cut and rusticated bricks will not be accepted.

Bricks must comply with BS EN 771-1 and PAS 70 to ensure they are robust and suitable for the long term use.

<u>Glass Curtain Walling Facades</u>
The images overleaf provide examples of facade designs for offices, which shall be deemed acceptable. The principles are to encourage creative and vibrant facades.

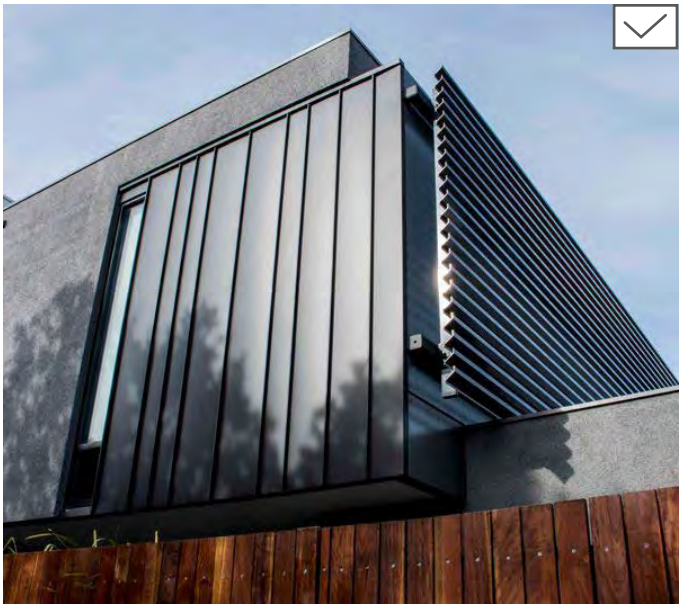
- Glass curtain walling is acceptable. The layout and design shall be creative with consideration for the use of structural glass and back baked colour glass at floor plate levels.
- Consideration must be given to the type of glass specified to reduce solar gain and heat transfer.
- Vertical brise-soleil to east west elevations and horizontal to south elevations.
- Accent colours or contrasting materials to provide business branding and focal points shall be introduced.
- Consideration should be given to the overall fenestration design and layout. ie random layout or a geometric design.

Examples of Brick Facades and Fenestration

Example of Alternative Facades

Acceptable Examples of Facades

Acceptable Examples of Facades



Unacceptable Examples of Facades

The designs are dated and do not achieve the desired level of creativity or use of colour and materials

4.3.3 Validation Requirement

The applicant shall annotate on the validation elevation drawings, a full description of the materials, colour, finish, fixing detail and named manufacturer, so that compliance can be demonstrated.

4.4 Architecture - E(g)(ii) Research & Development and E(g)(iii) Industrial Process

4.4.1 Design Guidance and Standards

- It is recognised that a number of R&D users will require integral offices, design spaces, assembly, distribution and warehouse components.
- The units may be large scale developments and so careful consideration of materials, articulation, heights and colours are important.
- The way in which buildings, plots and their activities are located can impact upon all users in the public realm.
- Buildings frontages should be used to screen private spaces behind.
- Buildings which are close to the boundaries will minimise the length of fencing and can improve security.
- Buildings should consider windows to the fronts to provide a more attractive frontage and surveillance to the street.
- Buildings can better screen noise and other disturbances than fences and thus reduce conflict.
- Corner buildings fronting a main road shall have elevations that are considered as front elevations to both sides.
- Wherever possible, the layout and design of new industrial plots will be expected to front buildings into the public realm and to enclose private spaces such as yards and staff car parks behind them.
- Visitor and employee parking can be located to the front. Parking to the front shall be restricted so as to minimise the visual impact of car parks on the public realm. Must comply with standards set out in section 4.6 'Plot Landscape' and 4.7 'Plot Front Boundary Landscape'.
- Where a building is a mixed use, if at least 50% of the floorspace is E(g)(ii) or E(g)(iii), the design standard in section 4.4 must be followed for the whole building.
- All plots are encouraged to achieve Secured by Design in consultation with Essex Police.

4.4.2 Open Storage and Service Bay Yards

- Storage yards can have a negative impact upon the quality of the public realm, particularly where they are exposed to public view.
- Where possible delivery bays and storage yards shall be located to the rear.
- Yards to the side, shall have enclosures compatible to the appearance of the building, with guidance set out elsewhere in the Design Code.
- Material storage should not project above boundaries.
- Skips shall be concealed from public view.

Example of Internal Reception Space

4.4.3 Vernacular and Materials

The images overleaf provide examples of facade designs for the building which shall be deemed acceptable. The principles are to encourage creative and vibrant facades.

- Consideration shall be given to the overall fenestration design and layout. ie random layout or a geometric design.
- The design code recognises that brick and glass curtain walling are acceptable, however other materials shall also be considered acceptable:
  - Brick
  - Glass curtain walling
  - Brass/copper products
  - Zinc
  - Fret and mesh cladding
  - Stainless steel
  - Anodised aluminium products
  - Premium rigid boarding with secret fixings
  - Aluminium/stainless steel mesh
  - Stained and UV protected timber
- Creative brick detailing shall be used to break up blank facades.
- Where windows are inset, they should be 100mm minimum (D).
- Flush facing frames can also be considered.
- Buildings which have large masses, must be broken down into smaller visual parts by changes in colour, cladding orientation or materials.
- Entrances must be treated as high level design portions, with the use of creative design, materials and as a focal point.
- Wirecut and rusticated bricks will not be accepted.
- Wall systems and cladding must be designed to minimise the spread of fire and evidence of this must be provided with the compliance checklist through confirmation of compliance with classes A1, A2 or B of the Euroclass system (or compliance with equivalent classes as amended or superseded).
- Any ancillary buildings, such as a security building, must meet the same architecture standard as the main building as set out in this section.

Bricks must comply with BS EN 771-1 and PAS 70 to ensure they are robust and suitable for the long term use.

Building facades which are longer than 70m shall have articulated facades in either horizontal or vertical planes. This could be via curved horizontal panelling or pre-formed cladding panels.

4.4.4 Validation Requirement

The applicant shall annotate on the validation elevation drawings, a full description of the materials, colour, finish, fixing detail and named manufacturer, so that compliance can be demonstrated.

Acceptable Examples of Facades

Unacceptable Examples of Facades

4.5 Architecture - B2 General Industrial, B8 Storage & Distribution and Sui Generis Bus Depot Building

4.5.1 Building Fronts and Backs

The key considerations for the design are as follows:

- The aim of the design guide is to make places, streets and the environment more attractive so that different uses can operate successfully in closer proximity to each other.
- The way in which buildings, plots and their activities are located can impact upon all users in the public realm.
- Buildings frontages should be used to screen private spaces behind.
- Buildings which are close to the boundaries will minimise the length of fencing and can improve security.
- Buildings shall consider windows to the fronts to provide a more attractive frontage and surveillance to the street.
- Buildings can better screen noise and other disturbances than fences and thus reduce conflict .
- Corner buildings shall have elevations that are considered as front elevations to both sides.
- The layout and design of new industrial plots will be expected to front buildings into the public realm and to enclose private spaces such as yards and staff car parks behind them.
- Visitor and employee parking can be located to the front/ side. Must comply with standards set out in section 4.6 'Plot Landscape' and 4.7 'Plot Front Boundary Landscape.'

4.5.2 Plot Ratios

- Modern industrial buildings and storage uses favour a single floor level, in which the building heights may be equivalent of 3 storeys. The relationship between gross of the external building and the site area is often referred to as the plot ration and expressed as a percentage.
- Problems can arise when growing business extend buildings and reduce open yards, thus parking can spill out onto yards and impact upon the public realm.
- Industrial development will be expected to provide between 35-40% plot ratio and no greater than 50%. If buildings are extended, this 50% restriction shall still be complied with.
- It is expected that new developments shall allow for structural mezzanines or first floors within the building, so as not to prejudice future plot ratios.

4.5.3 Open Storage and Service Bay Yards

- Storage yards can have a negative impact upon the quality of the public realm, particularly where they are exposed to public view.
- Where possible storage yards shall be located to the rear. If not the yards shall be located to the side.
- Yards to the side, shall have enclosures compatible to the appearance of the building, with guidance set out elsewhere in the Design Code.
- Material storage should not project above boundaries.
- Skips shall be concealed from public view.

Fig. 1: Front Elevation to a Typical Corner Block

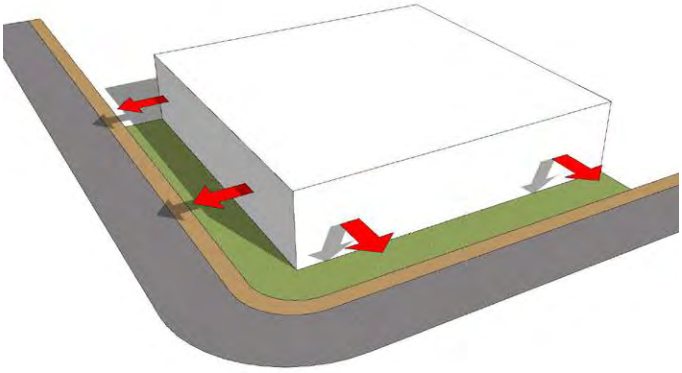
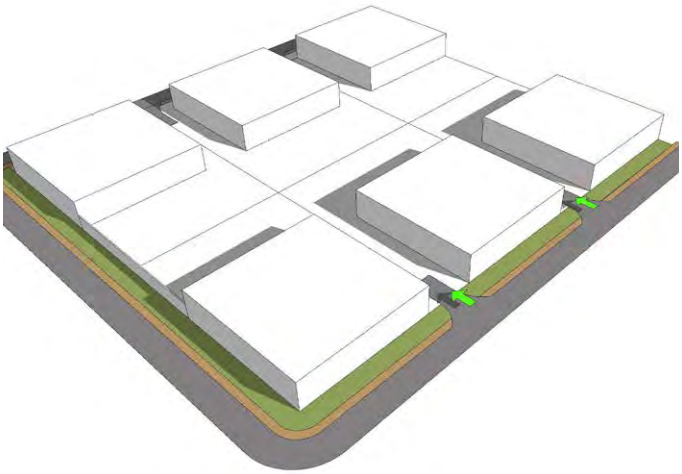
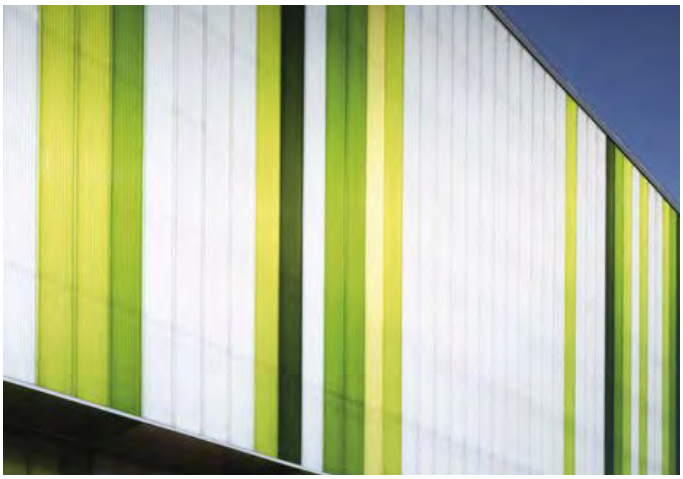


Fig.2: Illustrative Image or Rear Servicing to Protect Public Realm

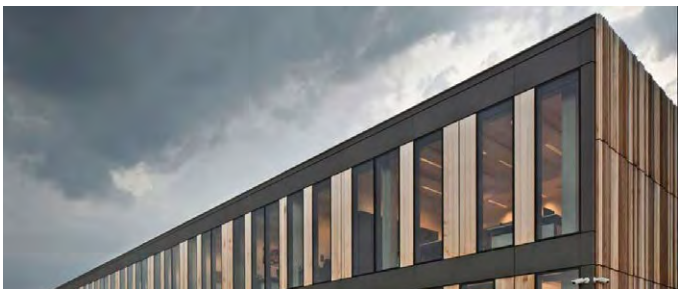


Examples of Change in Materials at Corners and Entrances

Examples of Colour - To promote various elements and break down the massing of buildings



Examples of Colour - To promote various elements and break down the massing of buildings



4.5.4 Design Guidance and Standards

- Long buildings (in excess of 40m) shall be visibly broken down by changes in materials, colour mass and articulation.
- Parapet roof design will be used in-lieu of pitched roofs, as this will compliment the architectural vernacular of the other uses. Low pitched roofs behind parapets are acceptable which are not visible.
- The majority of the facades shall consist of profile metal sheeting and or micro-rib panels for the main building. The panels can be used in both horizontal and vertical planes, which will assist in breaking up the massing
- The introduction of higher end materials around focal points such as office ,entrance or exposed corners shall be used. Examples of acceptable materials are hardwood timber, copper, zinc, glass anodised aluminium and mesh.
- Building higher than 8m (H) shall consider graduated panels, ranging from darker at the bottom to lighter at the top or breaking the visual form down.
- Cladding the whole building in one single colour is not acceptable. Different shades and colours must be used to ensure a high standard of design.
- Entrances shall be considered as focal points and should be creative in design.
- Wall systems and cladding must be designed to minimise the spread of fire and evidence of this must be provided with the compliance checklist through confirmation of compliance with classes A1, A2 or B of the Euroclass system (or compliance with equivalent classes as amended or superseded).
- Any ancillary buildings, such as a security building, must meet the same architecture standard as the main building as set out in this section.
- All plots are encouraged to achieve Secured by Design in consultation with Essex Police.

4.5.5 Office Element of the B8 Building

- Offices which are not located within the building mass, but are projecting forms, shall comply with the principles set out in 4.3 'Architecture - E(g)(i) Offices.'
- Traditional continuous ribbon window design will not be acceptable.

4.5.6 Validation Requirement

The applicant shall annotate on the validation elevation drawings, a full description of the materials, colour, finish, fixing detail and named manufacturer, so that compliance can be demonstrated.

Acceptable Examples of Fenestration and Curtain Walling for the Office Elements of the Industrial Buildings

Unacceptable Examples of Facades

- The design is dated.
- Ribbon windows with uninspiring curtain wall entrances are not acceptable.
- The constant grey cladding is not acceptable.

4.6 Plot Landscape Standards

4.6.1 Introduction

This section sets standards for development plots within character areas and identifies a series of landscape components to be included. Some of these are essential and must be included, while others are strongly encouraged for the benefit of the overall vision for Horizon 120.

The standards set out include requirements for how to treat front and backs when these are not facing a public highway.

These standards should be reviewed in relation to the landscape requirements set out in section 4.7 'Plot Front & Back Boundary Landscape.'

4.6.2 General Description

The standards have been set in relation to key areas for landscape - areas which are essential to achieving the overall aims and aspirations for Horizon 120.

4.6.3 Plot Components

Within character areas, amenities such as those detailed below will be necessary:

- **PL1:** Visitor car parking & employee car parking
- **PL2:** Pedestrian access paths through large plots
- **PL3:** Amenity areas - courtyards, entrance areas, meeting areas, rest stops
- **PL4:** SuDS
- **PL5:** Fencing & other boundaries

While the exact detail of these will be subject to the individual plot owner or developer, they must follow the principles set out overleaf in Table 1: Plot Landscape Components and the general standards in Section 6.

4.6.3 PL1: Car Parking

Visitor and employee car parking must to be provided in line with standards set out in section 6.10 'Parking Standards.' Only visitor and employee parking bays are allowed at the fronts and entrances of plots and buildings where these face the main road network as set out in section 3.4 'Street Hierarchy.' Distribution delivery and drop off must be accommodated at the back or within plots.

All visitor and employee parking bays must be broken up by trees as set out below:

- A minimum of 2 trees per 10 spaces is required.
- If fewer than 5 spaces are provided then 1 tree breaking up the bays is required.
- The long edge of any end parking bays must be wrapped by hedges or shrubs and must also include tree planting.
- The ground below trees must be planted - shrub or ground cover planting are both acceptable.
- Any parking areas (distribution, service & delivery) at the backs of Horizon Hub and Horizon Parkview must also adhere to the standards above to ensure green views to and from the Country Park and Horizon Park.

Refer to section 4.7 'Plot Front Boundary Landscape' and detail plan PL1: Car Parking Bays.

4.6.4 PL2: Pedestrian Paths

Pedestrian paths between individual plots within character areas in Zone A are essential and must be provided as set out in the LDO. Paths are also encouraged where possible within Zones B & C to aid pedestrian movement with amenities to the north and the perimeter boundary path.

Paths must follow principles set out in section 3.3 'Amenities - Health & Well-being' and detail plans PL2: Pedestrian Paths.

Courtyards with meeting points

Green and permeable parking areas

Planted buffer to building fronts and backs

Pedestrian paths

Table 1: Plot Landscape Components

Character Area	**Horizon Hub**	**Horizon Parkview**	**Horizon Glades**	**Horizon Paddocks**	**Horizon Fields**
Zone	A	B	B	C	C
PL1: Car parking	▪ Short term visitor ▪ Employee ▪ Service ▪ Drop off ▪ Delivery All parking must adhere to standards as set out in 4.6.3 PL1: Car Parking.	▪ Visitor ▪ Employee ▪ Service ▪ Drop off ▪ Delivery All parking must adhere to standards as set out in 4.6.3 PL1: Car Parking.	▪ Visitor ▪ Employee ▪ Drop off ▪ Delivery & Distribution ▪ Service All parking must adhere to standards as set out in 4.6.3 PL1: Car Parking.		
PL2: Pedestrian Paths	Required	Not required, but permitted and encouraged.			
PL3: Amenity Areas	▪ Square ▪ Meeting areas ▪ Rest stops ▪ Entrance zones ▪ Courtyard	▪ Meeting areas ▪ Rest stops ▪ Entrance zones ▪ Courtyards			
PL4: SuDS	▪ Permeable paving to visitor and employee car parking areas. ▪ Swales, french drains or rain gardens.				
PL5: Fencing & other boundaries	▪ Only planted boundaries allowed. ▪ Screen enclosures to open storage or service bay yards allowed as per section 4.2 'C1 Hotel (Zone A).' ▪ Must adhere to section 4.7 'Plot Front Boundary Landscape' and 6.5 'Boundaries.'	▪ Planted boundaries and low gabion walls are allowed. ▪ Must have planted boundaries in between plots. ▪ Perimeter railings/fencing (including secure boundaries) allowed as set out in section 6.5 'Boundaries.' ▪ Screen enclosures to open storage or service bay yards allowed as per section 4.4 'B1(b) Research & Development and B1(c) Industrial Process.' ▪ Must adhere to section 4.7 'Plot Front Boundary Landscape' and 6.5 'Boundaries.'		▪ Planted boundaries and low gabion walls are allowed. ▪ Perimeter railings/fencing (including secure boundaries) allowed. ▪ Must have planted boundaries in between plots. ▪ Screen enclosures to open storage or service bay yards allowed as per section 4.5 'B2 general Industrial and B8 Storage and Distribution.' ▪ Must adhere to section 4.7 'Plot Front Boundary Landscape ' and 6.5 'Boundaries.'	

4.6.5 PL3: Amenity Areas

All plots must include amenity areas for employees and visitors in the landscape. These must be provided across all character areas and zones. Types of amenity areas are set out below and must be included and considered as per principles set out:

Rest Stops:

- To be considered for visitors and employees.
- These shall provide opportunities to wait and rest in form of seating and benches.
- Shall be located by entrances and along footpaths.

Meeting Areas:

- Must be provided for employees.
- These shall provide opportunities for eating lunch outside, coffee breaks and to hold informal meetings.
- Seating, benches and tables shall be included.
- Soft landscape is essential to these areas with thought given to tree and shrub planting for structure and natural shade.
- Meeting areas are not allowed to be located within delivery, service and distribution zones of plots.

Entrances Zones:

- Welcoming entrances must be provided for both employees and visitors.
- These could include rest stops as per above.
- Visitor cycle parking stands and specimen planting to be considered.

Courtyards:

Plot developments and buildings which provide for or include a series of businesses can share amenity space. This must then be included in the form of a courtyard. The design of the courtyard must consider and follow principles set out in the amenity area types above.

Square:

A square must be included within Horizon Hub. This must provide a high quality landscape to tie together the proposed local hub buildings within this zone. The space must be flexible to allow for local events, pop up exhibitions or markets. Soft landscape must form an essential part of the landscape.

4.6.6 PL4: SuDS

Inclusion of SuDS within plots is essential and must be included across all character areas and zones. Refer to section 6.4 'SuDS & Surface Water Drainage Strategy.'

All plots must use permeable paving to visitor and employee car parking areas. There must be an inclusion of rain gardens, french drains or swales for hard landscape amenity areas and footpaths to drain to. If all amenity areas and footpaths are permeable paving, there is no requirement for rain gardens, french drains or swales. All internal roads and circulation zones must drain to swales, rain gardens or french drains where possible.

4.6.7 PL5: Fencing & Other Boundaries

If a boundary is desired between plots and the public realm or between plots, consideration should be given to zones and character areas when designing these.

Only planted boundaries and low gabion walls are allowed within zones A. Planted boundaries can be shrub planting, shrub planting with trees or meadow with trees. These must adhere to standards in section 6.2 'Soft Landscape Standards.'

Perimeter railings/fencing forming secure boundaries are allowed to zones B and C. No railing or fence is allowed to face the entrance or secondary road, except if the secure boundary is set along the east-west arm of the secondary road as set out in plan: PL5. Railings and fencing (excluding palisade fencing) are also allowed if these are set back beyond the plot front boundary landscape forming a secure boundary in line with the building footprint.

Open storage and service yards are allowed as set out in table 1: Plot Landscape Components and must follow standards set out in section 4.2.4 (C1 Hotel Zone A), 4.4.2 E(g)(ii) Research & Development, E(g)(iii) Industrial Process and 4.5.3 (B2 General Industrial, B8 Storage & Distribution and Sui Generis Bus Depot Building) - 'Open Storage and Service Bay Yards.' Screen boundaries and planting must be provided where these face the open country side, the Country park, Horizon park or the main road network.

All boundaries must adhere to section 6.5 'Boundaries.'

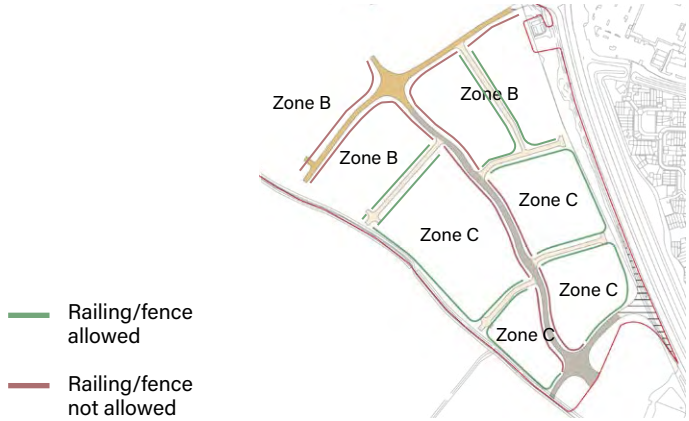
4.6.8 PL6: Planting

Planting forms a fundamental part of the aspirations and aims for Horizon 120. This includes requirements for planting within the plots. For planting along the plot boundaries refer to section 4.7 'Plot Front Boundary Landscape.' Car parking planting requirements must be as set out in 4.6.5 PL1: Car Parking.

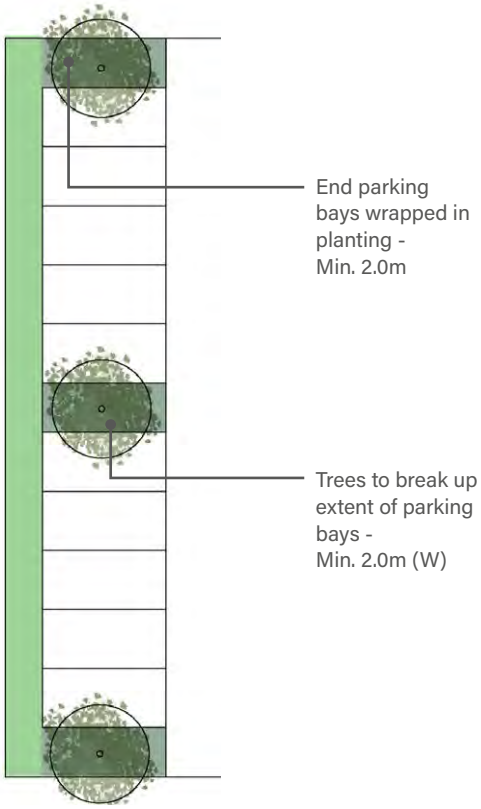
Planted boundaries in between plots contribute positively to the landscape and must be provided. Acceptable examples are shown in detail plan: PL6.

Amenity areas must be set in soft landscape. Trees and shrub planting must be used to provide structure and natural shade. Consideration should be given to provide seasonal interest and to promote biodiversity and ecology.

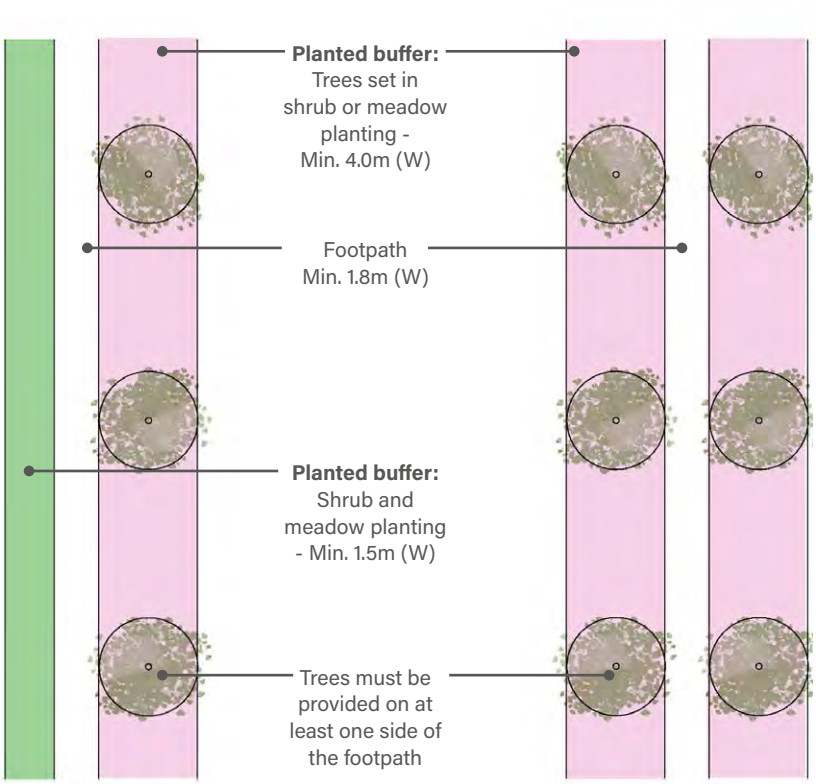
PL5: Perimeter Railing/Fence Extent Plan Zone B & C



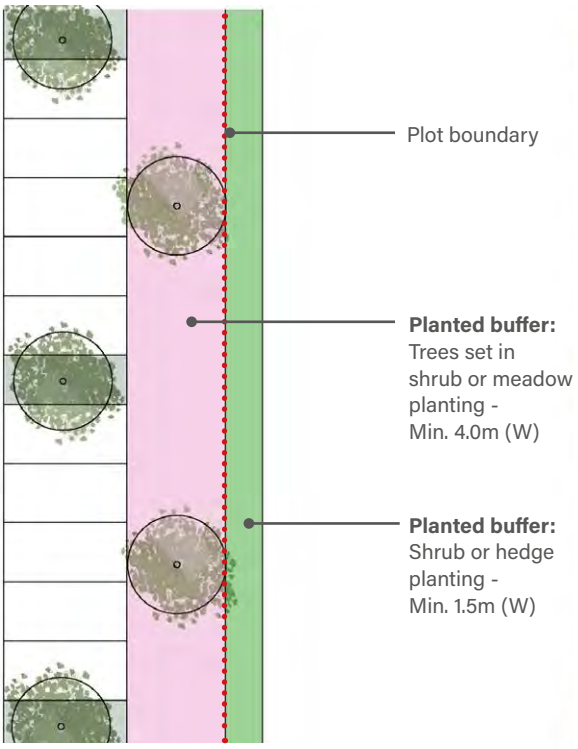
PL1: Car Parking Detail Plan

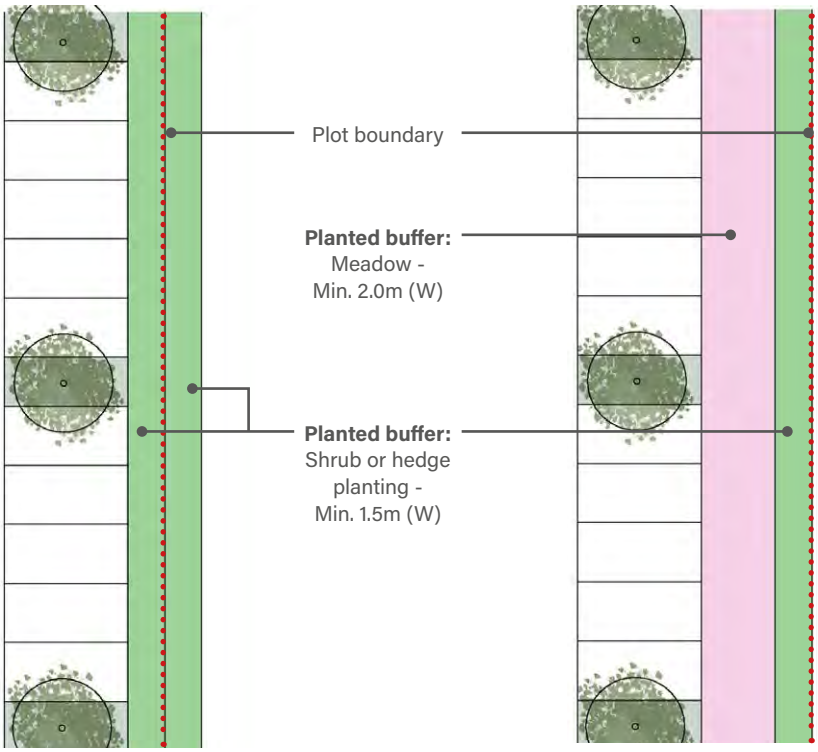


PL2: Pedestrian Path Detail Plans



PL6: Planted Boundary Detail Plans





4.7 Plot Front Boundary Landscape

4.7.1 Introduction

This section provides scenarios to illustrate permitted approaches to designing the plot front boundary landscape. The plot front boundary landscape standards apply where a plot faces the main road network, the Country Park, the proposed Horizon Park or Horizon Gateway.

The plot front boundary landscape must integrate SuDs principles by using permeable paving for hard landscape areas such as car parking, footpaths and amenity areas.

Further SuDS systems are encouraged such as the use of rain gardens, swales and french drains for surface water drainage and run off.

To extend and activate the public open space along the public footpath, and to help establish the relationship between public and private space, areas dedicated for amenity (entrance and rest stops) should be included within the plot front boundary landscape.

4.7.2 General Principles

All plot front boundary landscape types must follow the principles set out below:

- The design and layout of the plot front landscape must consider and complement the surrounding and adjacent plots as well as the adjoining road corridor landscape.
- Access and entrance points must be located to avoid interference and removal with trees within the road corridor.
- Planted buffers must be included if no car parking is provided.
- Screening of blank facades (building elevations with no windows or doors) must be provided by use of trees as set out in 4.7.10 'PF5 Screening of blank facades.'
- Car parking bays must be broken up by tree planting and end bays wrapped by hedges or shrubs aside long parking bay side.
- Hard landscape areas such as rest stops, entrance zones or car parking must be set within a green setting.
- Hard landscape areas such as car parking, footpaths and amenity areas must use permeable paving or drain to swales, rain gardens or french drains or other soft landscape.
- Perimeter railings/fencing must abut a planted buffer and adhere to standards in section 6.5 'Boundaries.'
- All hard landscape areas must be finished in line with accepted materials set out in section 6.1 'Hard Landscape Standards.'
- No unfinished areas or bare soil is allowed.

Variations will only be permitted as set out in the types. An example of a permitted variation would be to move the planted buffer area away from the building in order to create amenity, entrance or spill out areas.

4.7.3 Plot Front Boundary Landscape Components

The plot front boundary landscape is allowed to be made up from a mix of hard and soft landscape. It must be finished to a good standard and can not be left unfinished or with bare soil. The provision of amenity areas is strongly encouraged to activate the public realm adjacent.

Plot front boundary components are set out below:

Soft Landscape

Tree Planting **Planted Buffer**

Hard Landscape:

Entrance zones **Footpaths**
Car Parking **Amenity Area**

Structures:

Sub stations Allowed and must adhere to standards in section 5.1 'Road Corridor Landscape' and 6.5 'Boundaries.'

Examples for acceptable layouts for the plot front landscape are set out in detail plans below:

PF1: Green Entrance Zone
PF2: Green Car Parking (Single Line)
PF3: Screening of Blank Facades
PF4: Green Parking and Amenity Area Combination

The principles in these examples must be followed. The exact shape and form of the plot front boundary landscape is allowed and encouraged to be designed individually to meet the design aspirations of each plot. The plot front boundary landscape must contribute positively to the overall landscape of Horizon 120.

4.7.4 Tree Planting

Screening of Blank Facades

- Avenue trees: 1 tree/10m.
- Tree group: 3 trees/20m.
- Gaps are allowed for entrances, crossings and access.
- A tree should be included within 3m of an entrance or crossing.
- A minimum of two species to be used.
- Trees must be included in planted buffers wider than 4.0m.
- Trees must be located outside of vehicle and pedestrian visibility splays.

Car Parking:

- A minimum of 2 trees per 10 spaces are required.
- If fewer than 5 spaces are provided then 1 tree breaking up the bays is required.
- End parking bays must be wrapped by hedges or shrubs aside long parking bay side. These must also include tree planting.
- The ground below trees must be planted - shrub or ground cover planting are both acceptable.

4.7.5 Planted Buffer

Hedges & Shrub Planting:

- Hedge or shrub planting minimum 1.5m (W).
- Principles as per section 6.2 'Soft Landscape Standards.'
- Mix of deciduous and evergreen species must be used to ensure year around interest.

Meadow:

- Allowed to be added to the planted buffer when the buffer is wider than 1.5m.
- The minimum width must be 2.0m.
- Must be combined with the minimum requirements for hedge and shrub planting above.
- Meadow planting is not allowed to be used on its own.
- Mounding is allowed and encouraged to create interest where larger buffers are provided.
- Bulbs must be included to provide winter and spring interest.

Climbers:

- 2 climbers/m.
- All climbers must have adequate support.

4.7.6 PF1: Green Entrance Zone

The Green Entrance Zone detail plan sets out the principles for the plot front boundary landscape where no parking is included.

General Principles:

- Minimum width of plot front landscape as per section 3.6 'Building Heights.'
- Planting standards as set out in 4.7.4 'Trees' and 4.7.5 'Planted Buffer' must be followed.

Amenity Area:

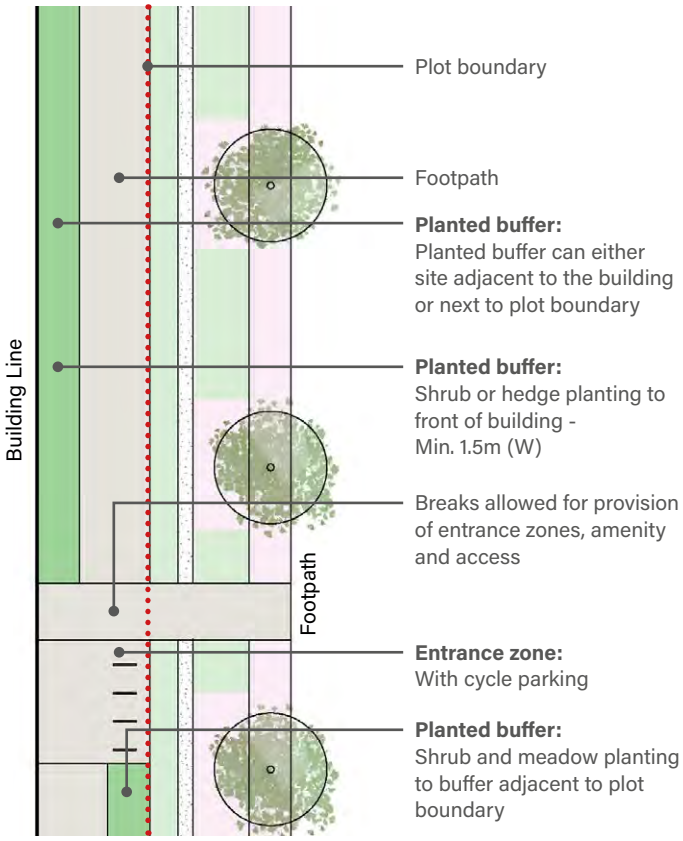
- When placed along an active frontage no planted buffer to the building is required.
- Areas must include opportunities for amenity such as seating or cycle parking to provide a rest stop.

Planted Buffer:

- Must be provided where no car parking areas are included in the plot front landscape.
- Allowed to sit either adjacent to building or offset along plot boundary.
- Breaks are allowed for the provision of access and entrance zones as well as amenity areas such as rest stops.

**Amenity areas for employees does not have to be located along the front of a plot. Spill out areas or seating for visitors should be considered to enhance and activate the public realm where suitable and possible as set out in section 4.6 'Plot Landscape Standards.'*

PF1: Green Entrance Zone Detail Plan



4.7.7 PF2: Green Car Parking (Single Line)

The green car parking detail plan sets out the principles for the inclusion of visitor and employee parking bays within the plot front boundary landscape.

General Principles:

- If a single line of parking is included as in the example - parking bays must abut the road corridor landscape.
- Planting standards as set out in 4.7.4 'Trees' and 4.7.5 'Planted Buffer' must be followed.

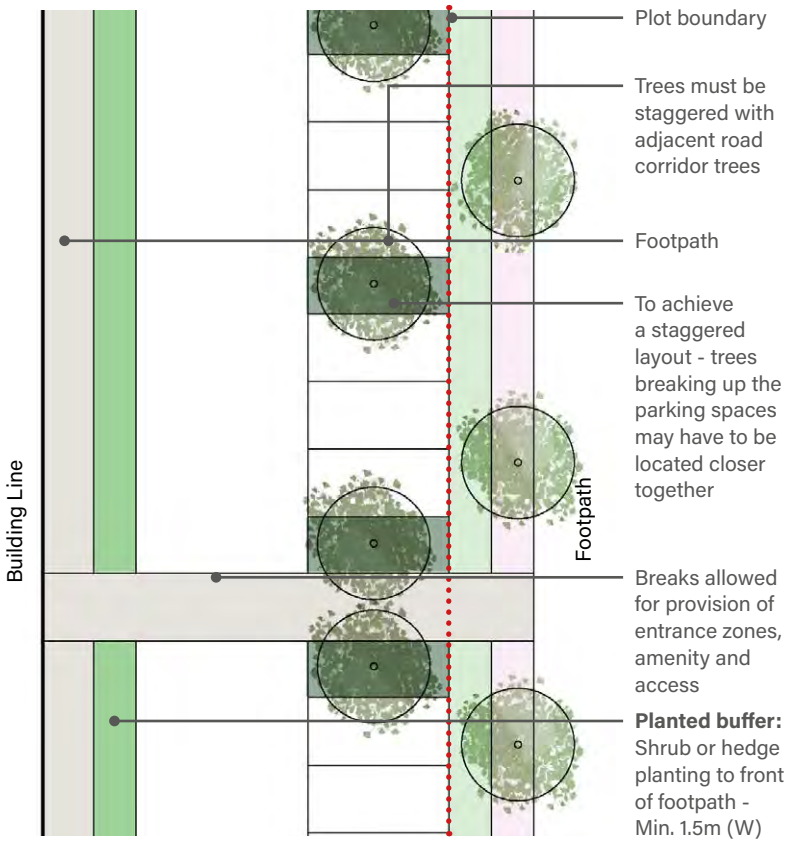
Footpath:

- A separate footpath must be provided.
- This can be provided next to the building or next to a planted buffer in front of building.

Planted Buffer:

- Must be provided to the front of the building or footpath to protect the front of building and pedestrian movement.
- Breaks are allowed for the provision of access and entrance zones as well as amenity areas such as rest stops.

PF2: Green Car Parking (Single Line) Detail Plan



4.7.10 PF5: Screening of Blank Facades

Blank facades are identified as building elevations with no windows or doors.

General Principles:

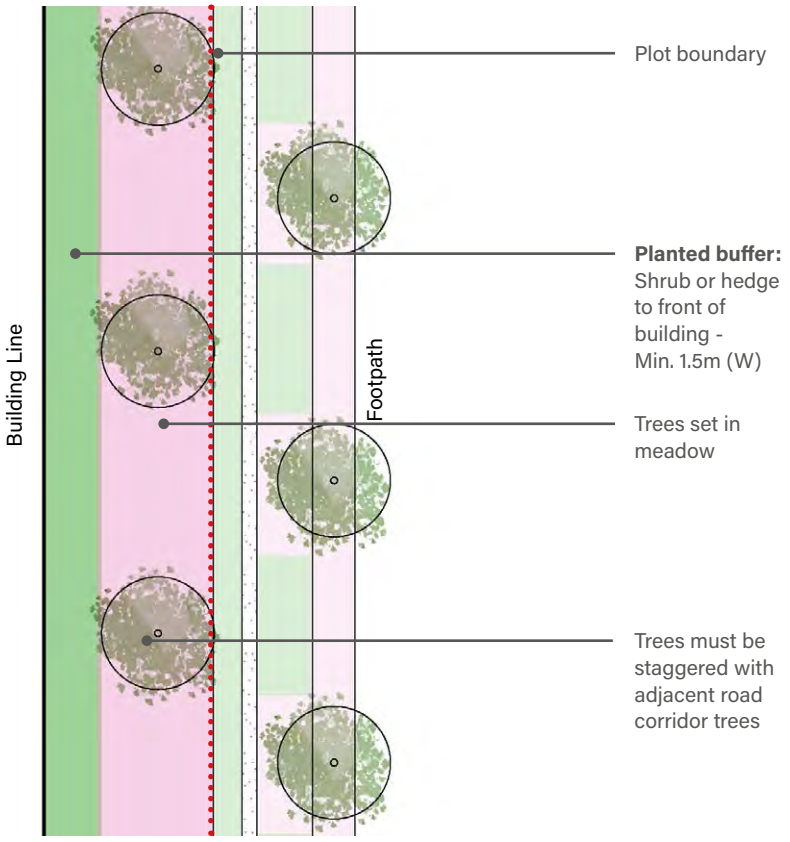
- Planting standards as set out in 4.7.4 'Trees' and 4.7.5 'Planted Buffer' must be followed.
- Building set back must be a minimum of 6.0m to allow for adequate screening of facade by trees and shrub planting.

Planted Buffer:

- The buffer to the front of the building must include both trees and shrub planting.
- Meadow is also allowed as set out in 4.7.5 'Planted Buffer.'
- A gravel access strip can be included for maintenance along the building - maximum 1.2m (W).

- General standards set out in 4.7.2 'General Principles' must be adhered to.

PF5: Screening of Blank Facades Detail Plan



4.7.8 PF3: Green Parking and Amenity Area Combination

The green parking and amenity area combination plan sets out the principles for additional lines of car parking within the plot front boundary landscape. It also shows how the amenity area (entrance zone) can be included.

General Principles:

- Planting standards as set out in 4.7.4 'Trees' and 4.7.5 'Planted Buffer' must be followed.

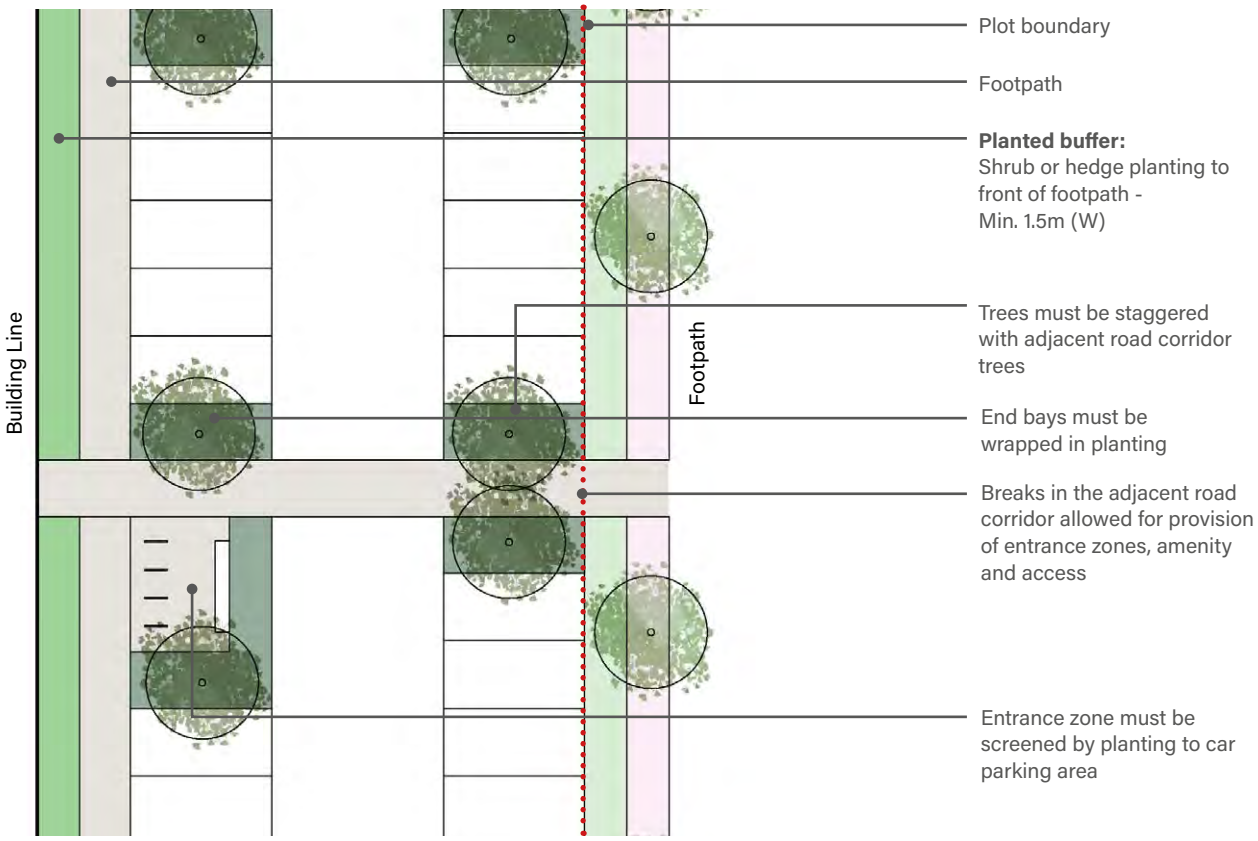
Footpath:

- A separate footpath to the front of the building must be provided in front of car parking bays.
- This can be provided next to the building or next to a planted buffer in front of building.

Planted Buffer:

- Must be provided to the front of the building or footpath to protect the front of building and pedestrian movement.
- Must be provided to screen and separate amenity areas from car parking zone.

PF3: Green Car Parking & Amenity Combination Detail Plan



5. Strategic Landscape Standards

5.1 Road Corridor Landscape

5.1.1 Introduction

Standards for the road corridor landscape are essential to meet the landscape aims and principles and to deliver a verdant, sustainable, healthy 'working' lifestyle and environment for Horizon 120 business and innovation park.

The road corridor landscape plays a key role in providing a linear, green corridor for pedestrians and vehicles to walk and drive along. This buffer landscape between the plot edges and the main road network is an opportunity not just to provide a soft landscape with plants, trees, SuDS, but also to link to welcoming amenity and entrance areas within plots.

The standards set ensure a continuity and consistent green approach through the site.

The creation of a road corridor landscape is mandatory and minimum standards are set out in 5.1.2 'Minimum Standards' and 5.1.3 'Soft Landscape Types.' The requirements may only be relaxed for necessary site access and the provision of associated visibility splays.

Buffer landscape within zones and character areas/plots are also mandatory within the plot as set out in section 4.6 'Plot Landscape Standards.'

Standards have been developed to set the layout of soft landscape types that must be followed.

5.1.2 Minimum Standards

The standards shown are minimum and must be followed Buildings must be set back from the plot boundary as per section 3.6 'Building Heights.' This additional plot front boundary landscape will increase the overall width of the road corridor and add important amenity areas linking to the public realm.

The examples show how the integration of SuDS and planting is essential to the road corridor landscape. 4 road corridor types are set out in section 3.5 'Road Corridor Principles.' The composition of these must be followed as set out in the sections overleaf.

A: Road corridor with swale and tree buffer (Entrance & Secondary Road)

B: Road corridor with tree buffer (Green Links)

C: Road corridor to second entrance

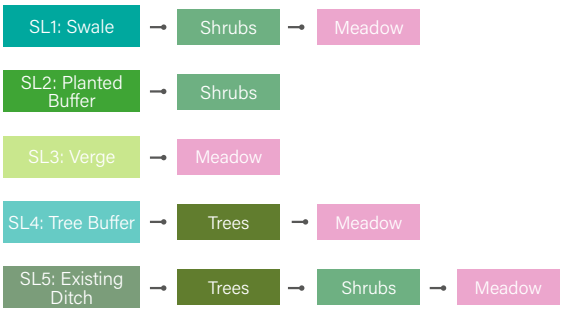
D: A131 road corridor with entrance meadow terraces

The plot front boundary landscape running along and linking to the road corridor landscape is encouraged to include amenity areas or entrance space including car parking. Further details and standards can be found in section 4.7 'Plot Front Boundary Landscape.'

The implementation of the road corridor as described in this section is the responsibility of the Local Authority or the person commissioned to implement this work.

5.1.3 Soft Landscape Types

The road corridor include the soft landscape types below:



Plant species and general planting principles are specified in section 6.2 'Soft Landscape Standards' and these must be followed. In addition to this foot and cycle paths shall be included as set out in road corridor types and as illustrated in section 3.3 'Amenities - Health & Well-being' and follow material principles set out in section 6.1 'Hard Landscape Standards.'

5.1.4 Variations

Variations to the planting types and standards are not allowed unless required to ensure vehicle visibility splays. Details of these must be submitted to the Local Authority for approval as part of the compliance checklist.

5.1.5 Further Guidance

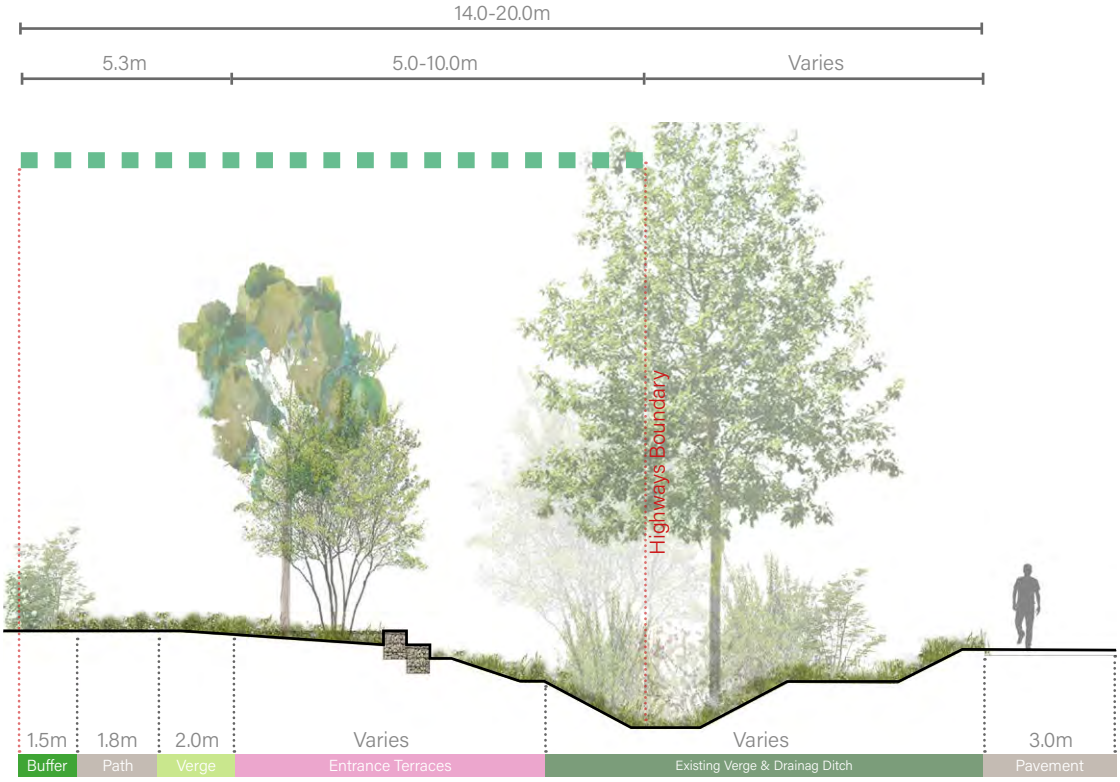
Road corridor landscape will need to be maintained in accordance with LDO condition 'Landscape Maintenance' and follow the boundaries set out in the Statement of Reasons section 3.3 'Ownership/Maintenance Boundaries.' This will ensure vehicle visibility splays at access points are followed and ensure safe pedestrian and vehicular access.

Type A: Road with Swale & Tree Buffer

Type B: Road with Tree Buffer

Type C: Road Corridor to Second Entrance

Type D: A131 road corridor with entrance meadow terraces



5.1.6 SL1: Swale

The inclusion of a swale form is mandatory for the road corridor landscape as set out in section 3.5 ' Road Corridor Principles' and must follow principles below:

- Planting standards as per section 6.2 'Soft Landscape Standards.'
- Max 1:2.5 slope on each side.
- A mix of meadow and shrubs to be planted to slopes.
- Informal, natural layout of shrubs in groups.
- Mix of evergreen and deciduous species to provide all year around greenness.
- Promotion of relaxed cutting regime to promote biodiversity.
- Regular management required to ensure functionality.
- Swale depth to allow piped drainage from development plots where possible.
- To be lined against buildings and trees.

- All SuDS elements and systems to be installed and follow best practice and guidelines as set out in 'CIRIA's 2015 SuDS Manual (C753).'

5.1.7 SL2: Planted Buffer

The planted buffer provide essential greenness next to plot boundaries and footpaths and must follow the principles below:

- Planting standards as per section 6.2 'Soft Landscape Standards.'
- Gaps are allowed for entrances, crossings and pedestrian access and must be approved through the completion of the compliance checklist.
- Informal, natural layout of shrubs in groups.
- Mix of evergreen and deciduous species to provide all year around greenness.
- Feature shrubs shall be placed adjacent to building entrances, crossing points and at important way finding spaces.

5.1.8 Structures within the Road Corridor Landscape

Structures within the road corridor landscape is allowed, but limited to sub stations only. These must follow principles set out in the LDO in terms of spacing and location to avoid sub stations being located in close proximity to each other. Locations and specification of sub stations must be approved through the completion of the compliance checklist.

Screening

All sub stations must be screened by planting or be clad by timber. Screening by planting must be done by evergreen climbers and shrub planting to set the structure in the landscape.

Access

Access and parking space to the sub station must be from within the plot and not from the main road network - the entrance road and the secondary road. Access from the green links to substations is allowed.

Sub Station Layout

Sub stations must sit within the soft landscape. Foot and cycle path dimensions must be retained and structures will need to have a minimum 1.0m (W) planted buffer to the footpath adjacent to ensure a green boundary.

One designated parking space is allowed per sub station. The parking space must be included in the sub station layout/ footprint and can't form part of the road or the footpath. It must also be screened as above if adjacent to the footpath.

Planted swale

Planted buffer to plot boundary

Meadow to road verge

Trees avenue in meadow

5.1.9 SL3: Road Verge

The road verge form an essential divide between the road and the foot and cycle path. It must be planted with meadow - which must be maintained at maximum 0.6m (H).

Meadow:

- Meadow to planted the whole stretch of the road verge.
- Breaks are allowed for pedestrian crossings.
- Winter and spring flowering bulbs must be specified to add interest to the verge when the meadow is dormant.

5.1.10 SL4: Trees

Trees avenues form an essential part of the road corridor landscape and all road corridor types must follow the principles below:

- 1 tree/10m.
- Gaps are allowed for entrances, crossings and access.
- Species must follow and vary in line with the street hierarchy as set out in section 6.2 'Soft Landscape Standards.'
- Trees must be set in meadow.
- Trees must be located outside of vehicle and pedestrian visibility splays.
- Trees must have minimum 2.5m clear stem.

5.1.11 SL5: Existing Verge & Ditch

The proposed entrance landscape - Horizon Gateway is located next to the existing tree corridor and drainage ditch to the A131. Proposals to this buffer landscape must follow principles set out below:

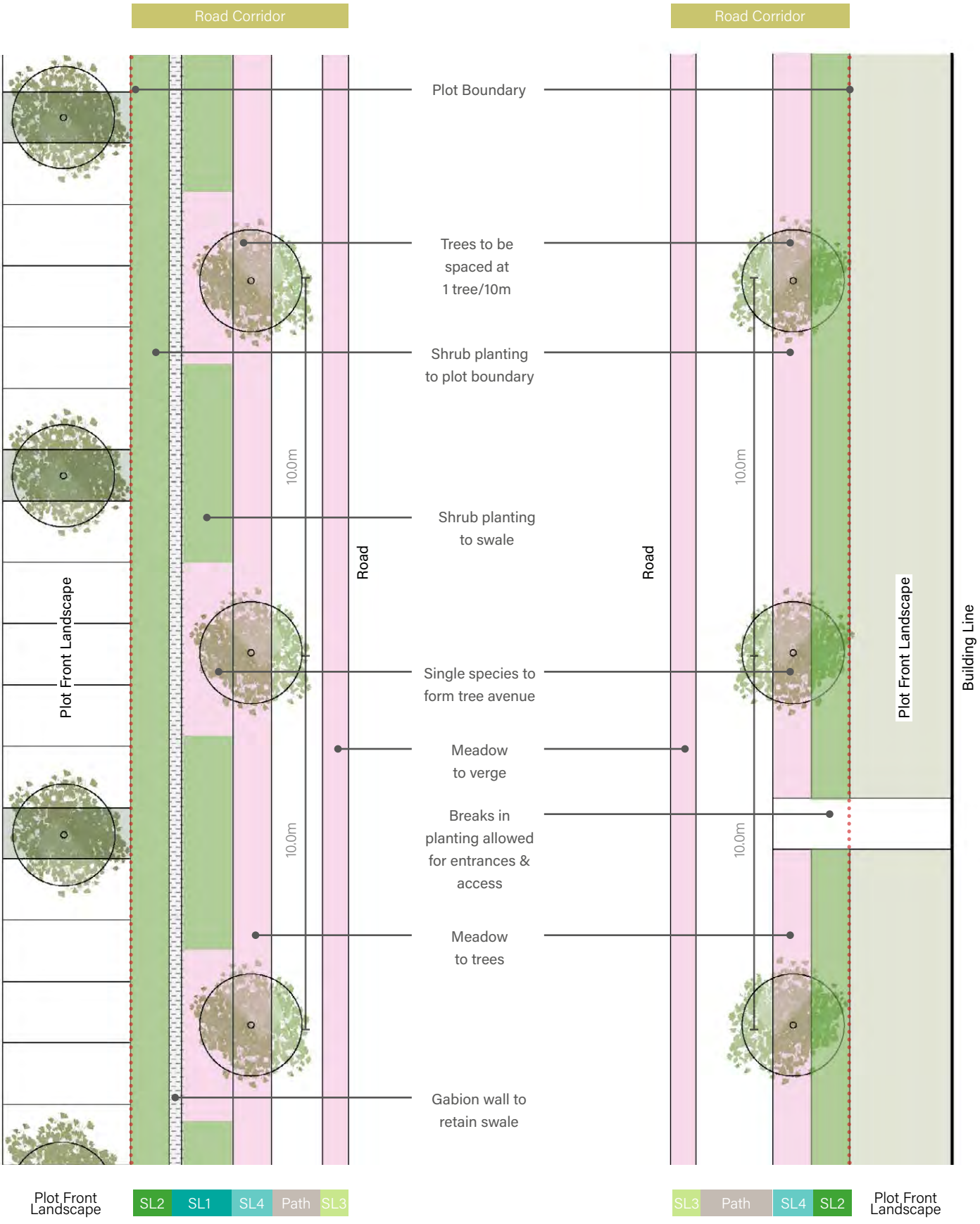
- Infill tree planting in groups to mitigate the tree removal for the creation of the road entrance.
- The existing drainage ditch must be retained and any new slopes to the sides must not exceed a 1:3 gradient.
- Proposals must include a welcoming entrance landscape to Horizon 120 that celebrates the aims and aspirations of Horizon 120.
- Features could include meadow terraces, swales and informal seating.
- Horizon 120 signage must be included and shall be set sensitivity in the landscape.
- All proposals must adhere to information, findings and methods as set out in the Aboricultural Reports refer to section 2.2.4 'Site Qualities - Existing Habitats.'
- Trees must be located outside of vehicle and pedestrian visibility splays.

Tree avenues and park landscape screen and set buildings in the landscape

Trees next to planted buffers

Type A: Planting Layout Plan

Type B: Planting Layout Plan



5.2 Perimeter Buffer Landscape

5.2.1 Introduction

The site is wrapped in a continuous green buffer that sets the business park within the landscape, reduces noise disturbance, screens buildings and provides important foraging and commuting habitats for wildlife.

The nature of the perimeter buffer changes according to plot use, circulation strategy and the context beyond the site boundary.

This section provides a study of the typical perimeter boundaries currently surrounding the site.

Five perimeter buffer typologies identified in Plan 10: Perimeter Buffer Landscape Plan overleaf. Each of these are illustrated and accompanied by guidance outlining how these must be treated to meet the requirements of this Design Code.

5.2.2 Existing Perimeter Buffers

The existing perimeter buffer boundaries to the site are mostly large established hedges with mature trees and drainage ditches.

The perimeter buffer to the Country Park to the north is relatively open and views can be seen into the park from the business park. The ditch acts as the main barrier stopping people from crossing at points outside the bridle path.

The perimeter buffer to the west along the bridle path is made up from mature hedges with local trees. There are some local gaps in this boundary. The bridle path moves from one side to the other along this stretch.

The southern boundary to the farmlands is open and no planting or fence is present.

Large, mature trees dominate the perimeter buffer to the road. An established hedge sits below the trees and a pond can also be found to the south. A drainage ditch sits outside of the site boundary.

5.2.3 Perimeter Buffer Components

Perimeter buffers will be made up from a combination of the following elements:

- Hedge and shrub planting
- Meadow / Field layer
- Trees
- Mounding (where possible)
- Pedestrian paths
- Informal seating
- Playful rest stops
- Opportunities for exercise

5.2.4 Perimeter Buffer Principles

The perimeter buffers to the north and west will form part of Horizon Walk. This walk shall follow along the back of the plot edges and create opportunities for informal exercise and quiet relaxation with regular seating opportunities.

Outlined below are a summary of principles and improvements that shall form part of the standards for the perimeter buffer:

- Perimeter walk along northern and western boundaries to link and connect with existing and proposed pedestrian paths across the site and the surroundings.
- Enrich and add habitats to promote biodiversity and ecology.
- Gaps in the existing hedge layer must be filled.
- Increased number of trees to the western buffer must be provided.
- New buffers must to be established as in illustrated sections where no boundaries are present.
- Additional trees must form part of the western boundary - both the existing and new boundary.
- A new boundary to be established to the western boundary to Horizon Park adjacent to existing farmland.

5.2.5 Perimeter Buffer Extent

The perimeter buffers shall allow for minimum of 8m from the site boundary to the edge of the plot boundary. The existing road corridor along the A131 is much wider than this and any development along this perimeter must be located outside of the Root Protection Area (RPA) of the existing trees.

The southern boundary - PB4 in plan 10 overleaf must not include any plot development. The only allowed development in this area is provision for a electrical bus depot as set out in the LDO.

Plan 10: Perimeter Buffer Landscape Plan

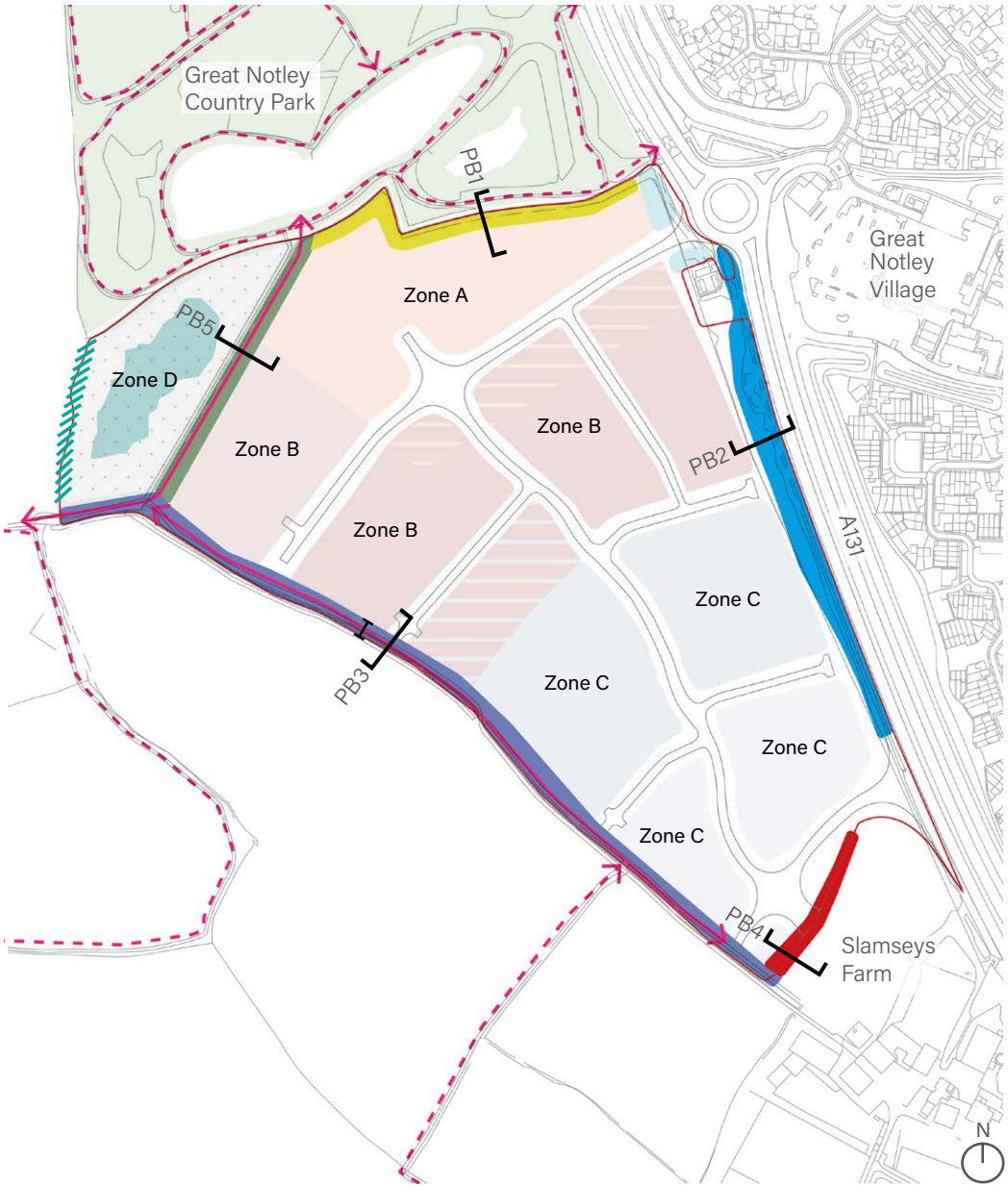
PB1: Perimeter Buffer Country Park

PB2: Perimeter Buffer Road Corridor

PB3: Perimeter Buffer western Farmland

PB4: Perimeter Buffer southern Farmland

PB5: Perimeter Buffer Northern Horizon Park



PB1: Perimeter Buffer Country Park

PB2: Perimeter Buffer Road Corridor

PS3: Perimeter Buffer Western Farmland

PB4: Perimeter Buffer Southern Farmland & Gridserve

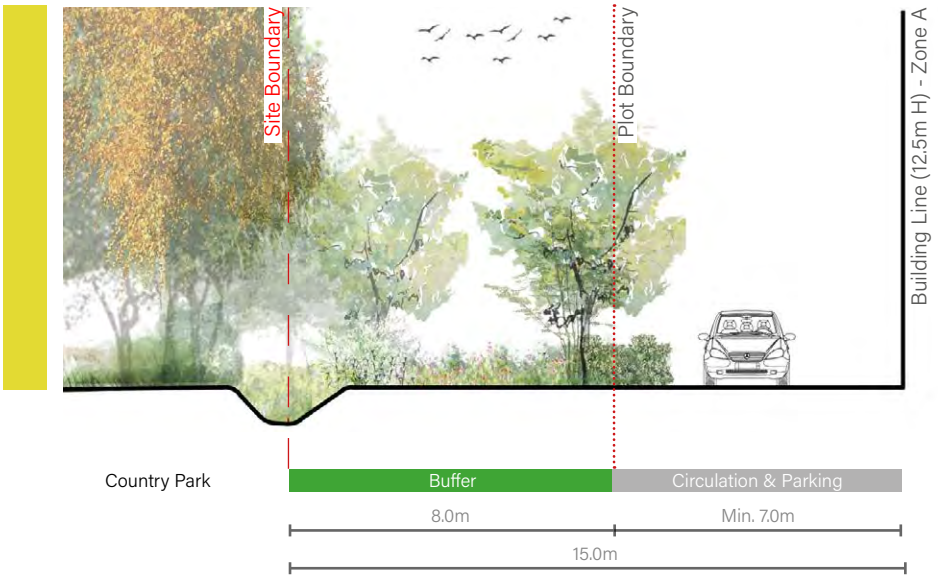
PB5: Perimeter Buffer Northern Horizon Park

Proposed pedestrian paths

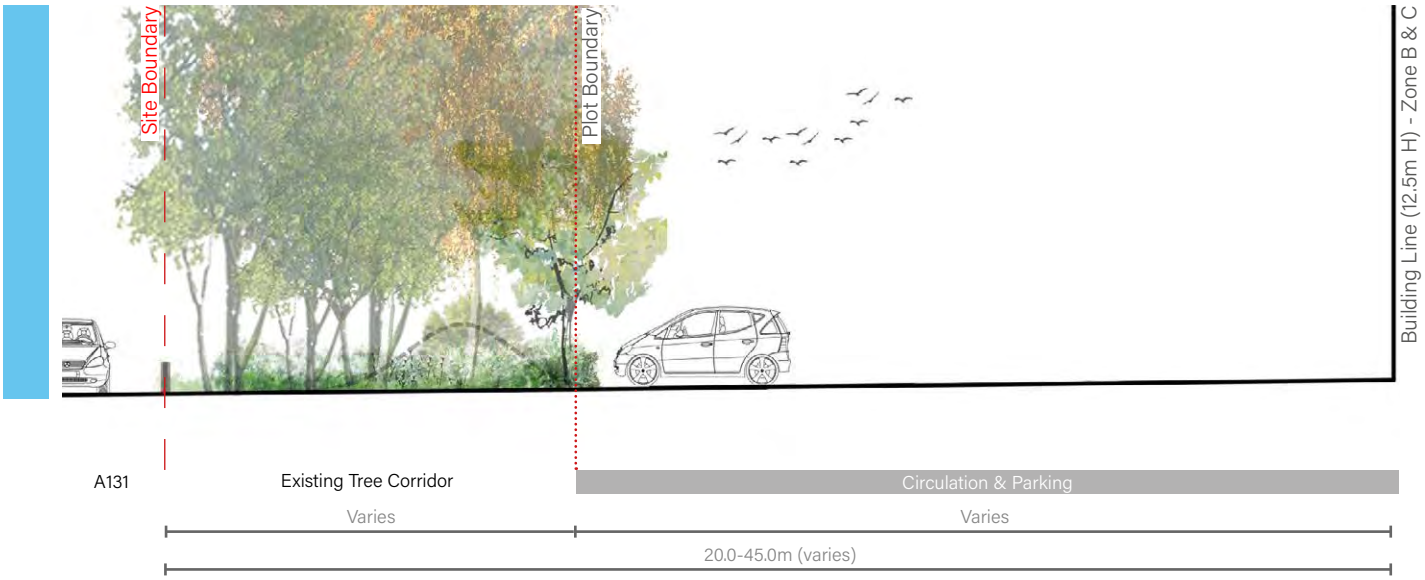
Existing pedestrian paths

New boundary to adjacent farmland

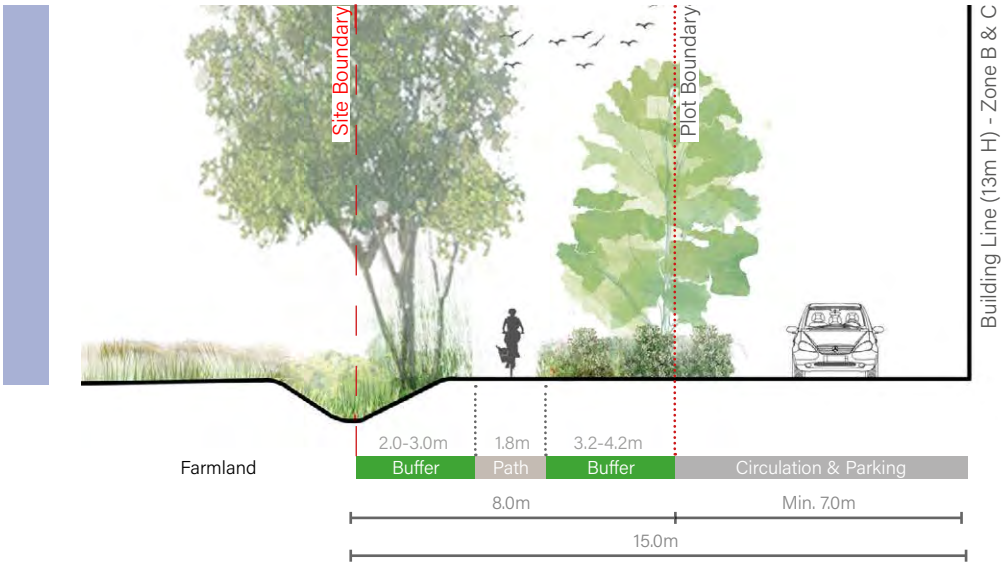
PB1: Perimeter Buffer Country Park



PB2: Perimeter Buffer Road Corridor



PB3: Perimeter Buffer Western Farmland



5.2.6 PB1: Perimeter Buffer Country Park

Green edge between the Country Park and Horizon Hub
Summary of principles to guide proposals below:

- Extend existing buffer to Great Notley Country Park.
- Enrich and add habitats to promote biodiversity and ecology.
- Smaller trees with light canopies shall form part of the buffer to zone boundary and Country Park.

The exact form and dimensions can vary along the boundary, but the principles and the inclusions of the main components above must be followed.

5.2.7 PB2: Perimeter Buffer Road Corridor

Buffer corridor to A131 road. The existing tree corridor must be retained and enriched as per principles below.

- Mounding can form part of the buffer to provide a physical border and to help to act as a noise barrier.
- Any mounding must be placed outside of the RPA's of the existing trees.
- Enrich and add habitats to promote biodiversity and ecology.

The exact form and dimensions can vary along the boundary, but the principles and the inclusions of the main components above must be followed.

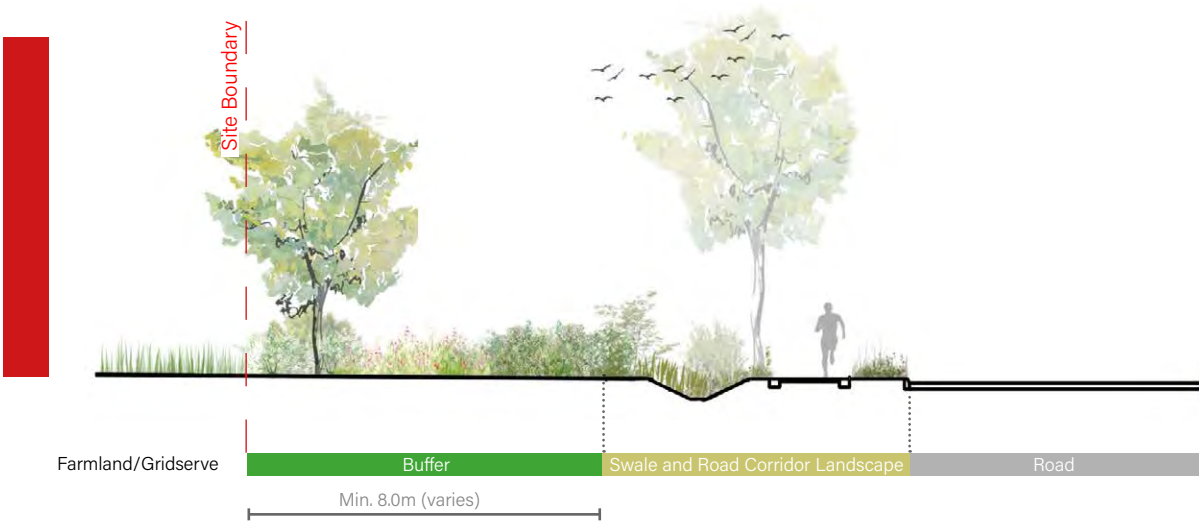
5.2.8 PB3: Perimeter Buffer Western Farmland

Informal perimeter walk with local views to adjacent farmland.
Summary of principles to guide proposals below:

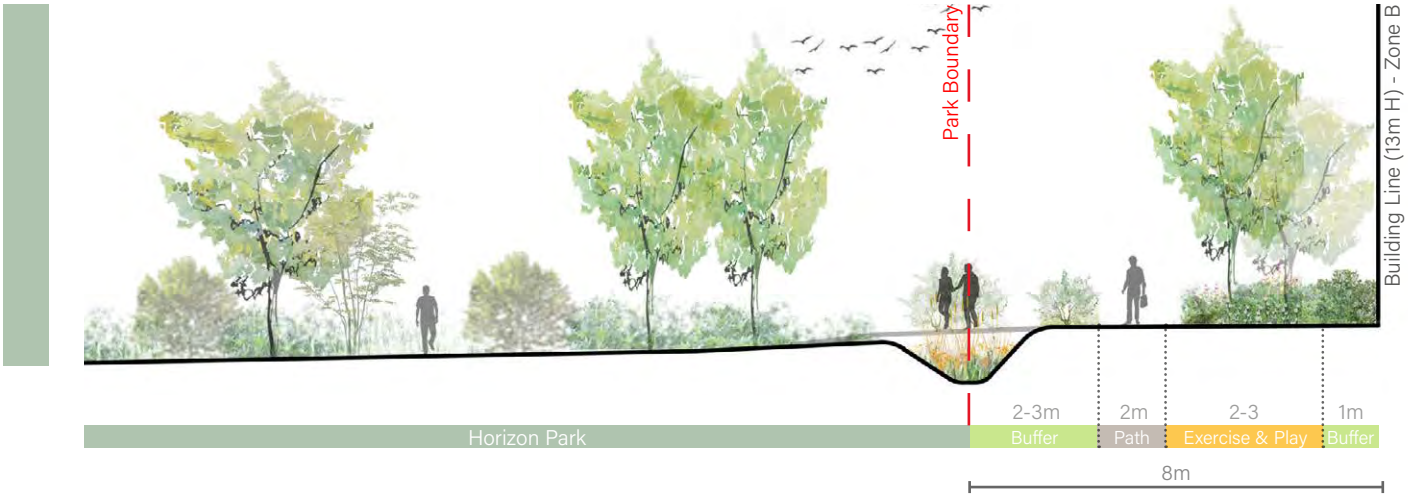
- Extend existing buffer to site boundary.
- Enrich and add habitats to promote biodiversity and ecology.
- Bridle path must be retained as part of proposals.
- Perimeter path for informal walking and running.
- Regular rest stops with seating opportunities.
- Regular interims with informal play and exercise opportunities.
- Smaller trees with light canopies shall form part of the buffer to Zone B.
- Large trees shall form part of the buffer to Zone C.

The exact form and dimensions can vary along the boundary, but the principles and the inclusions of the main components above must be followed.

PB4: Perimeter Buffer Southern Farmland



PB5: Perimeter Buffer Horizon Park



5.2.9 PB4: Perimeter Buffer Southern Farmland

Green edge to the southern boundary of the site. Summary of principles to guide proposals below:

- New buffer to mark site boundary and provide interesting, green views of business park from adjacent existing farm and Gridserve development adjacent.
- Enrich and add habitats to promote biodiversity and ecology.
- A variety of scale of trees to form an interesting boundary.
- Views to the proposed Gridserve development adjacent must be considered and framed.

The exact form and dimensions can vary along the boundary, but the principles and the inclusions of the main components above must be followed.

5.2.10 PB5: Perimeter Buffer Horizon Park

Green and playful edge between the Horizon Park and adjacent development in zone A. Summary of principles to guide proposals below:

- Open buffer between Horizon Park and adjacent development in zone A to promote views and connection between the two character areas.
- Enrich and add habitats to promote biodiversity and ecology.
- Perimeter path for informal walking and running.
- Regular rest stops with seating opportunities.
- Regular interims with exercise opportunities.
- Smaller trees with light canopies shall form part of the buffer to zone boundary and Horizon Park.
- Existing bridle path to be retained and improved.

The exact form and dimensions can vary along the boundary, but the principles and the inclusions of the main components above must be followed.

5.2.11 Planting Standards

The priority of the perimeter boundary is to retain, enrich and add green corridors. A variety of habitats must be created to increase and promote biodiversity and ecology.

Any gaps in the existing boundary must be filled with planting as set out below.

The below planting types and habitats must be included as set out in the sections:

Meadow/Field Layer: Must be included to the edges of shrub and hedge planting.

Shrub & Hedge Planting: Must be included and form the main component of the buffer.

Trees: Trees must be included as set out in the perimeter types. Specimen trees should be placed by rest stops, crossing points and at important way finding locations.

All planting must adhere to standards in section 6.2 ' Soft Landscape.'

5.2.12 Tree Distances and Layout

Tree planting is essential to screen the business park from the surrounding countryside and the Country Park.

Tree requirements are set out below and must be followed:

- Trees must be planted both in groups and as single specimens.
- A variation of sizes and species must be used to create a natural, informal boundary.
- 1 tree/15m is required along any length where there are no trees in the existing boundary.
- Groups must have a minimum of 3 trees and shall be planted 1 group/20m.
- Groups must have a minimum of 2 different species.
- Trees to the proposed buffer (next to the plot boundary) must be staggered with trees in the existing boundary where possible.
- All existing trees must be retained - unless recommended for removal in the Aboricultural Survey.
- All proposals must adhere to information, findings and methods as set out in the Aboricultural Reports refer to section 2.2.4 'Site Qualities - Existing Habitats.'

Requirements set out above apply to all perimeter types with the exception of PB2 - which already has a well established and mature tree cover along the A131. Any gaps in the corridor must be filled in line with the requirements set out above.

Acceptable planting species are set out in section 6.2 ' Soft Landscape' and must be followed.

6. General Standards

6.1 Hard Landscape Standards

6.1.1 Introduction

The hard landscape palette has been developed to emphasise the character areas and ensure good quality materials are used throughout the site.

Palettes are set up to follow the character areas and street hierarchy. For the character areas a set of guidelines and brief for materials will be established, which allows for the developer to specify the details.

For the street hierarchy a selection of materials will be specified to ensure continuity across the site. These will follow standards set out in Essex County Council 'Street Materials Guide - Design and Good Practice (January 2012)'

6.1.2 Main Principles

- Material palettes to reflect character areas.
- A coherent street materials palette to ensure legibility.
- Areas of permeable paving must be followed.
- Main internal road network (Entrance, Secondary and Green Link Roads) must be built to adoptable standards.
- Material substitutions allowed if agreed with Local Authority and Landscape Architect and must follow similar qualities as original specified materials. Details must be submitted as part of the compliance checklist.
- Kerbs and edging to ~~match~~ complement adjacent surface material.
- Tactile paving shall be constructed from the same material as footpaths. Exception is allowed where necessary to adhere to adoptable standards.
- Tree grilles shall align with modular paving layout and be flush with the surrounding paths and pedestrian areas.
- Access chambers, inspection chambers and manholes within the footpaths and roads shall align to modular paving where applicable.
- Inset covers shall be recessed with in-fills of the surrounding paving. Exception infill materials are allowed if agreed with Local Authority and Landscape Architect. Details must be submitted as part of the compliance checklist and evidence must be shown that the relevant service supplier will not accept paving infill. Concrete infill is the preferable material substitute in that case.
- Other covers and gullys must be cast iron.
- Covers within soft landscape areas shall have a dark colour.
- A level of flexibility within character areas is essential to encourage plot individuality.

6.1.3 Material Quality Levels

A quality of material as well as acceptable materials are set out to be followed. These will follow a scale of quality as below:

- **High quality** - Natural stone paving, resin bound gravel and clay brick paving.
- **Medium quality** - Concrete block paving, tar spray & chip asphalt, asphalt with chippings, self binding gravel or grasscrete.
- **Standard quality** - Asphalt.

All levels set are minimum and it is permitted to use a higher quality material if desired.

6.1.4 Design Parameters

Character Areas: Plot Development (Refer to table 2)

Guidelines and quality of materials set out, but individuality within plots encouraged.

- **Horizon Hub**
  High quality materials
- **Horizon Parkview**
  Medium quality materials
- **Horizon Glades**
  Medium and standard quality materials
- **Horizon Paddocks & Fields**
  Standard quality materials

Character Areas: Parks and Nature Areas (Refer to table 3)

The palette for parks and nature areas will be given in further detail than the character areas above and must be followed.

- **H5: Horizon Gateway**
  Medium quality materials
- **H6: Horizon Park & Horizon Walk**
  Medium quality materials

Street Hierarchy (Refer to table 4)

Materials specified in detail - including sizes, laying patterns and quality. The standards must be the same across the length or area of street hierarchy.

Road Surface:

- **Entrance Road**
  Standard quality materials
- **Secondary Road**
  Standard quality materials
- **Green Link**
  Standard quality materials

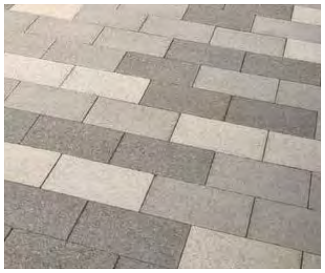
Footpath:

Medium quality material across the whole site.

**Adoptable Roads - All hard materials to comply to standards set out in Essex County Council 'Street Materials Guide - Design and Good Practice (January 2012)' or any updated document or document which supersedes it.*

Table 2: Hard Landscape Requirements - Plot Development Areas

Character Area	Horizon Hub	Horizon Parkview	Horizon Glades	Horizon Paddocks & Fields
Zone	A	B	B	C
Road	▪ To be applied to all roads. ▪ Herringbone bond. ▪ Block paving size. ▪ Example of acceptable materials: Clay brick paving and natural stone paving.	▪ To be applied to all roads. ▪ Herringbone bond. ▪ Block paving size. ▪ Example of acceptable materials: Concrete block paving, tar spray & chip asphalt or asphalt with chippings.	▪ Herringbone bond (if applicable). ▪ Block paving size (if applicable). ▪ Example of acceptable materials: Concrete block paving, tar spray & chip asphalt and asphalt.	
Footpath	▪ Material to match road. ▪ Different bond to road. ▪ Block paving size. ▪ Colour tones - to contrast road. ▪ Example of acceptable materials: Natural stone paving, resin bound gravel and clay brick paving.	▪ Different bond to road. ▪ Block paving size. ▪ Colour tones - to contrast road. ▪ Must be permeable or drain to soft landscape. ▪ Example of acceptable materials: Concrete block paving		▪ Different bond to road. ▪ Colour tones - to contrast road. ▪ Block size paving (if applicable). ▪ Must be permeable or drain to soft landscape. ▪ Example of acceptable materials: Concrete block paving, tar spray & chip asphalt and asphalt.
Entrance & Amenity Areas	▪ A variety of sizes and bond of paving to be used to define hierarchy of spaces. ▪ Colour tones - to contrast road. ▪ Must be permeable or drain to soft landscape. ▪ Example of acceptable materials: Natural stone paving, resin bound gravel and clay brick paving.	▪ Different bond to road . ▪ Setts or block paving size. ▪ Colour tones - to contrast road. ▪ Must be permeable or drain to soft landscape. ▪ Example of acceptable materials: Concrete block paving.		▪ Different bond to road. ▪ Setts or block paving size ▪ Colour tones - to contrast road. ▪ Must be permeable or drain to soft landscape. ▪ Example of acceptable materials: Concrete block paving, tar spray & chip asphalt and asphalt.
Parking	▪ Material to match road. ▪ Colour tones - to contrast road. ▪ Block paving size. ▪ Must be permeable. ▪ Example of acceptable materials: Concrete block paving.	▪ Colour tones - to contrast road. ▪ Block paving size. ▪ Must be permeable ▪ Example of acceptable materials: Concrete block paving and grasscrete.		▪ Block paving size. ▪ Colour tones - to contrast road. ▪ Visitor and employee parking spaces must be permeable. ▪ Example of acceptable materials: Concrete paving, tar spray & chip asphalt, grasscrete and asphalt.



Concrete paving with natural stone aggregate finish

Natural stone setts

Warm tones of block paving

Flag paving

Table 3: Hard Landscape Requirements - Parks & Nature Areas

Character Area	Horizon Gateway	Horizon Park & Walk
Footpath	▪ Warm colour tones. ▪ Must be permeable. ▪ Timber edge. ▪ Example of acceptable materials: Self binding gravel.	▪ Warm colour tones. ▪ Must be permeable. ▪ Timber edge. ▪ Example of acceptable materials: Self binding gravel.
Entrance & Amenity Areas	▪ Must be permeable. ▪ Colour to match footpath. ▪ Timber edge. ▪ Example of acceptable materials: Self binding gravel and back mulch / wood chip.	▪ Must be permeable. ▪ Colour to match footpath. ▪ Timber edge. ▪ Example of acceptable materials: Self binding gravel and back mulch / wood chip.
Trees in Hard	▪ Must be permeable. ▪ Example of acceptable materials: Self binding gravel (suitable for tree pits).	n/a

Self binding gravel paths

Bark mulch path

Self binding gravel to trees

6.1.5 Paving Sizes & Colour

The sizes referred to are set as below:

- Setts:
  80mm x 80mm, 100mm x 100mm, 100mm x 200mm
- Block paving:
  300mm x 200mm, 300mm x 150mm, 300mm x 150mm, 200mm x 100mm, 400mm x 150mm
- Flag paving:
  300mm x 300mm, 450mm x 450mm, 600mm x 600mm, 900mm x 450mm, 900mm x 600mm

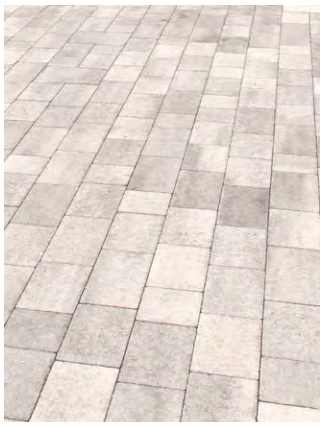
The sizes specified above are example sizes and bespoke sizes within the limit for each category is allowed. Thickness is not specified and must be suitable to loading and to Engineers' specification and details. Where no size is specified - any size is permitted.

A tone or tones of colour is suggested to help secure a range of colours to help with legibility and wayfinding.

Table 4: Hard Landscape Requirements - Street Hierarchy

Character Area		**Entrance Road**	**Secondary Road**	**Green Link**
Road	Material	Asphalt		
	Kerb / Edges	▪ Pre cast concrete. ▪ Constant edge across all road types.		
Foot and Cycle Paths	Material	Concrete block paving.		
	Size	Block paving size.		
	Colour	Grey colour tones - colour to contrast to road.		
	Bond	Stretcher bond.		
	Kerb / Edges	▪ Pre cast concrete to pedestrian crossings. ▪ Pre cast textured concrete to footpaths. ▪ Constant edge across all road types.		

Herringbone concrete block paving



Stretcher bond concrete block footpath

Soft colour to asphalt surface

6.1.6 Summary

The hard landscape standards are important to ensure legibility and way finding across the business park. All build ups and thickness are to follow standards and Engineers' specification.

All main roads (defined as entrance, secondary and green links) must be built to adoptable standards.

**Adoptable Roads - All hard materials to comply to standards set out in Essex County Council 'Street Materials Guide - Design and Good Practice (January 2012)' or any updated document or document which supersedes it.*

6.2 Soft Landscape Standards

6.2.1 Introduction & Aims

Soft landscape standards are set to provide:

- Biodiverse green corridors for wildlife.
- A range of habitats and planting types.
- Enhancement of the surrounding landscape.

Soft landscape standards include a series of principles that must be followed for planting and trees.

These standards should be read in conjunction with section: 4.6 'Plot Landscape Standards', 4.7 'Plot Front Boundary Landscape', 5.1 Road Corridor Landscape and 5.2 'Perimeter Buffer Landscape'.

The planting principles are established to provide a natural and informal feel which will help ground the business park in its natural setting.

6.2.2 Planting Principles

General Principles:

- Planting palettes to reflect and enhance character areas.
- Mix of evergreen and deciduous plants to create seasonal interest.
- Sizes and densities of plants to suit planting area/bed dimensions and layout.
- Densities to ensure a good green coverage within 2 years of establishment.
- Any plants that fail must be replaced.
- All planting must be managed and maintained.
- Hard surfaces to drain to soft landscape where possible.
- Consideration to use a range to shapes, forms and textures.

Soil:

- Topsoil depth and quality to respond to the type of planting it supports.
- Recycled on-site topsoil and subsoil to be used whenever adequate.
- Soil to be tested to BS3882 and certificates to be provided to the local authority for approval.

Species & Mixes:

- A mix of native and non native species must be used.
- Planting mixes to ensure year-round interest and seasonal highlights
- Meadow mixes to include pollinator friendly and native species to enhance biodiversity and add visual interest.
- Hedgerows to be made up from native fruiting shrubs, meadow (field layer) to create green corridors for birds, bats and pollinators.
- Plant species used in swales and attenuation ponds to be non-invasive and known to thrive in both wet and dry soils, with a mixture of species to ensure a good performance throughout the year.
- Species substitutions allowed if agreed with Local Authority and Landscape Architect and must follow similar qualities as set out species. Details must be discussed with the Local Authority before submission as part of the compliance checklist.

6.2.3 Tree Principles

General Principles:

- Utilise trees to define and strengthen the street hierarchy and help way finding.
- Tree stock to be from UK nursery and source.
- Trees species selection to consider and reflect aspect and soil conditions.
- Consider the growing conditions and associated tree pit design.
- Tree pits in hard landscape to have permeable surface material.
- Trees to be placed outside of visibility splays.

Species:

- Maximise the use of native species.
- Minimum 2.5m (H) clear stem to all main roads (refer to section 3.4 Street Hierarchy) to ensure visibility and views.
- Species substitutions allowed if agreed with Local Authority and Landscape Architect and must follow similar qualities as set out species. Details must be discussed with the Local Authority before submission as part of the compliance checklist.

Soil:

- Topsoil depth and quality to respond to the type of planting it supports.
- Recycled on-site topsoil and subsoil to be used whenever adequate.
- Soil to be tested to BS3882 and certificates to be provided to the local authority for approval.

6.2.4 Tree Specification

Character Areas:

- Trees must be included to planted buffers along pedestrian paths on minimum one side of the path.
- Trees must be included to all planted buffers where these are wider than 4.0m.
- Trees are encouraged to amenity areas, entrance areas and courtyards and must be provided as in section 4.7 'Plot Front Boundary Landscape.'
- Trees must be included to break up rows of parking as in section 4.6 'Plot Landscape Standards' and 4.7 'Plot Front Boundary Landscape.'
- 50% Semi mature: 20 - 25cm girth, minimum 5m (H)
- 50% Extra heavy: 14 - 16cm girth, minimum 3.5m (H)
- A mix of multi stem and clear stem trees must be used.

Street Hierarchy:

- Trees are to be as set out in section 5.1 'Road Corridor Landscape.'
- Trees species are to be selected from the palettes overleaf in table 5: Soft Landscape Requirements - Road and follow street hierarchy.
- Clear stem of minimum 2.5m (H).
- Sizes of trees must follow the specification set out in table 5: Soft Landscape Requirements - Road.

Meadow

Climbers

Street trees avenue

Native hedge planting with meadow edge

Planted buffer to plots

Specimen trees to aid way finding

Multi species avenues

Native tree species to perimeter buffer

Table 5: Soft Landscape Requirements - Road

Location	Planting Elements		Entrance Road	Secondary Road	Green Link
Verge - Road	Planting	Specification	▪ Meadow mix. ▪ General purpose mix (80% grasses, 20% wildflowers).	▪ Maximum 0.6m (H). ▪ Bulbs interplanted in natural drifts.	
Planted Buffer - Plot Development	Planting	Species	Osmanthus burkwoodii Escallonia 'Iveyi' Forsythia × intermedia 'Lynwood' Osmanthus burkwoodii	Euonymus europaea Viburnum tinus Rosa canina Prunus spinosa Escallonia 'Iveyi'	Viburnum × bodnantense Corylus avellana Rosa canina Prunus spinosa
		Size & Specification	▪ Height: 40-60cm & 60-90cm ▪ Pot size: 2L & 5L ▪ Where possible bareroot stock to be used.		
		Notes	▪ Bulbs to interplanted in natural drifts to front of buffer.		
Roundabout	Trees	Species	Sorbus torminalis Liquidambar styraciflua Betula pendula		
		Size & Specification	▪ 30% Semi mature: 20 - 25cm (Girth), Minimum 4.5 - 5.5m (H). ▪ 30% Extra heavy: 18 - 20cm (Girth), Minimum 4.0 - 5.0m (H). ▪ 30% Extra heavy: 16 - 18cm (Girth), Minimum 4.0 - 4.5m (H).		
		Notes	▪ Mixed species in informal groups. ▪ Must be located outside of vehicle visibility splays. ▪ Mounding to be used to create interest where possible.		
	Planting		▪ Hedge - 30% coverage. ▪ Meadow - 70% coverage. ▪ Bulbs interplanted in natural drifts.		
Swale	Planting	Species	Rosa arvensis Viburnum opulus	Euonymus europaea Crataegus monogyna	Cornus sanguinea 'Midwinter Fire'
		Size & Specification	▪ Height: Minimum 40-60cm ▪ Pot size: 2L - 5L ▪ Where possible bareroot stock to be used.		
		Notes	▪ Mixed species in informal groups. ▪ Groups to be staggered with adjacent trees. ▪ Refer to section 5.1 'Road Corridor Landscape'. ▪ Shrubs and meadow to swales - 60% shrubs and 40% meadow. ▪ Bulbs interplanted in natural drifts.		
Tree Buffer	Trees	Species	Carpinus betulus	Corylus colurna	Tilia cordata 'Greenspire'
		Size & Specification	▪ Semi mature: 25 - 30cm (Girth), Minimum 5.0 - 6.0m (H). ▪ Minimum 2.5 (H) clear stem.		
		Notes	Single species avenue.		

Table 6: Soft Landscape Requirements - Perimeter Buffer

Location	Planting Elements		Perimeter Buffer
Buffer Planting - Ditch	Trees	Species	Crataegus monogyna Corylus avellana Carpinus betulus Salix caprea Salix viminalis Alnus glutinosa
		Size & Specification	▪ 30% Semi mature: 20 - 25cm (Girth), Minimum 4.5 - 5.5m (H). ▪ 40% Extra heavy: 18 - 20cm (Girth), Minimum 4.0 - 5.0m (H). ▪ 30% Extra heavy: 16 - 18cm (Girth), Minimum 4.0 - 4.5m (H).
		Notes	▪ Informal planted edge to enhance existing. ▪ Mix of multi stem and clear stem. ▪ Refer to section 5.2 'Perimeter Buffer Landscape.'
	Planting		▪ Shrubs & Grasses - 70% coverage. ▪ Meadow - 30% coverage.
Buffer Planting - Plot Boundary	Trees	Species	Pinus sylvestris Sorbus torminalis Sorbus aria Corylus avellana Betula pendula Fagus sylvatica
		Size & Specification	▪ 30% Semi mature: 20 - 25cm (Girth), Minimum 4.5 - 5.5m (H). ▪ 40% Extra heavy: 18 - 20cm (Girth), Minimum 4.0 - 5.0m (H). ▪ 30% Extra heavy: 16 - 18cm (Girth), Minimum 4.0 - 4.5m (H).
		Notes	▪ Informal planted edge to enhance existing. ▪ Mix of multi stem and clear stem. ▪ Refer to section 5.2 'Perimeter Buffer Landscape.'
	Planting		▪ Shrubs & Grasses - 70% ▪ Meadow - 30% ▪ Climbers to fencing or blank facade (if applicable)

Carpinus betulus

Alnus glutinosa

Corylus colurna

Crataegus monogyna

Table 7: Soft Landscape Requirements - Horizon Park & Horizon Gateway

Location	Planting Elements		Horizon Park & Horizon Gateway
Attenuation Ponds	Trees	Species	Alnus glutinosa Betula pendula Salix viminalis Salix caprea Crataegus monogyna Corylus avellana
		Size & Specification	▪ 30% Semi mature: 20 - 25cm (Girth), Minimum 4.5 - 5.5m (H). ▪ 40% Extra heavy: 18 - 20cm (Girth), Minimum 4.0 - 5.0m (H). ▪ 30% Extra heavy: 16 - 18cm (Girth), Minimum 4.0 - 4.5m (H).
		Notes	▪ Mixed species in informal groups. ▪ Mix of multi stem and clear stem.
	Planting		▪ Shrubs & Grasses - 60% ▪ Meadow - 40% ▪ Include species to create habitat for great crested newts.
Reed Bed	Planting		▪ Reeds ▪ Marginal planting
		Notes	▪ Ensure a variation of habitat is included - marginal planting to edge, reeds as well as open water habitat. ▪ Use local or native species where possible. ▪ Avoid invasive species such as Crassula.
General Area - Planting	Trees	Species	Crataegus monogyna Corylus avellana Acer Campestre Fagus sylvatica Quercus palustris Liquidambar styraciflua
		Size & Specification	▪ 30% Semi mature: 20 - 25cm (Girth), Minimum 4.5 - 5.5m (H). ▪ 30% Extra heavy: 18 - 20cm (Girth), Minimum 4.0 - 5.0m (H). ▪ 30% Extra heavy: 16 - 18cm (Girth), Minimum 4.0 - 4.5m (H).
		Notes	▪ Mixed species in informal groups and planted singularly as specimen trees. ▪ Mix of multi stem and clear stem.
	Planting		▪ Shrubs & Grasses - 40% ▪ Meadow - 60%

Betula pendula

Salix caprea

Alnus glutinosa

Fagus sylvatica

Table 8: Soft Landscape Requirements - Green & Brown Roofs

Location	Planting Elements		Green Roofs
Wildflower Roof	Planting	Types	▪ Mix of species. ▪ Inclusion of species native to the area. ▪ Inclusion of grass species as well as wildflowers is essential.
		Notes	
Biodiverse / Brown Roof	Planting	Types	▪ Seeding or plug planting of native species to the area. ▪ Some areas of roof can be left to self colonise. ▪ Pre grown mats are not allowed.
		Notes	Must include other elements to enhance biodiversity such as: ▪ Modulating the substrate surface. ▪ Sand pockets and gravel beds. ▪ Nesting aids. ▪ Log piles and deadwood. ▪ Piles of stone or small boulders.

6.2.5 Topsoil Principles

All topsoil on site to be tested to BS3882 prior to any works starting. Test certificate to be provided to council for approval. Where possible topsoil shall be reused on site for soft landscape both within plot development and across the rest of the Business Park.

If topsoil needs to be taken off site partnerships with Braintree District Council should be sought for re use of soil in the first instance. After this topsoil can be sold for re use elsewhere.

Topsoil Handling

- All handling of topsoil to BS3882.
- Before topsoil stripping clear site of rubbish, debris and vegetation.
- Do not compact topsoil.
- To avoid contamination - Do not mix topsoil with:
  - Subsoil, stone, hardcore, rubbish or other material from demolition work.
  - Other soil or material containing aggressive weeds, sharps, plastics and non soil forming materials and notifiable animal or plant diseases.
  - Oil, fuel, cement or other substances harmful to plant growth.
  - Other classifications of topsoil.
- Multiple handling - Keep to a minimum. Use or stockpile topsoil immediately after stripping.
- Wet conditions: Handle topsoil in the driest condition possible. Do not handle during or after heavy rainfall or when it is wetter than the plastic limit less 3%, to BS1377-2.

Topsoil Storage

- Standard: To BS3882.
- Height (maximum): 1.5m. Width (maximum): 3.0m
- Formation: Loose tip and shape from the side only, without running machinery on the heap at any time.
- Protection:
  - Do not place any other material on top of storage heaps.
  - Do not allow construction plant to pass over storage heaps.
  - Prevent compaction and contamination by fencing and covering as appropriate.

Topsoil Storage Heap Treatment

- Treatment: Apply a suitable herbicide at appropriate times to prevent seeding of weeds.

6.3 Ecology & Biodiversity

6.3.1 Introduction

Horizon 120 will be a green and environmentally conscious business park that protects and enriches biodiversity.

This section will:

- Clarify ecological aims and aspirations for Horizon 120.
- Review existing habitats on site.
- Summarise recommendations from the Ecology Report.
- Outline proposed habitat and ecological interventions.

6.3.2 General Description

These standards have been set in relation to key areas for biodiversity and ecology that are essential to achieve the overall aims and aspirations for Horizon 120. Standards are designed to:

- Protect and diversify existing habitat, flora and fauna.
- Retain and connect existing green corridors.
- Integrate a range of ecological and habitat interventions.
- Foster interest and care in the environment from users and visitors.

6.3.3 Requirements

Strategic Landscape

Must follow the recommendations from the ecology report in section 6.3.5 'Ecology Report Recommendations.' All of the specific habitat interventions in section 6.3.6 must be included as part of the parks landscape apart from Biodiverse green roofs.

Plot Development

Must follow the recommendations from the ecology report in section 6.3.5 'Ecology Report Recommendations' below and must include at least 3 habitat interventions as set out in 6.3.6 'Habitat and Ecology Intervention.'

Bird and bat boxes must form part of the strategic landscape provided as set out in the LDO.

6.3.4 Existing Habitat

The existing site is described in the ecology report as habitat and species poor with exceptions to this occurring along the perimeter boundaries. All existing habitat of ecological importance will be retained:

- Hedgerow
- Dry grass/scrub
- Grass margins

The existing site is predominantly arable land

6.3.5 Ecology Report Recommendations

Newts

- Great crested newt have been identified present in the surroundings but over 200m from the closest point of the development. Mitigation is therefore required and will comprise the creation of higher quality habitat then that currently found on site specifically, the creation of wildflower grassland, hedgerow creation along the western boundary to provide additional habitat linkages, tree planting to create small pockets of cover/shelter within the grassland and log and hibernacula pile creation. Attenuation pond(s) will also help to provide additional habitat for breeding great crested newts.

Birds and Bats

- Retain and where possible enrich and increase the height of existing hedgerow habitat to benefit foraging bats and breeding birds.
- Allow south-west hedgerow to grow taller with less 'neat' management to accommodate bats.
- Where possible retain or recreate habitats of acknowledged value to ground nesting birds such as hedgerows and rough grassland patches especially along south-west and northern boundaries.
  Clear vegetation in which birds may be nesting between September and February (outside of the peak nesting season). When not possible, undertake a targeted watching brief before and during clearance.
- Avoid artificial lighting directed towards the mature trees along all four site boundaries (refer to section 6.9 'Lighting').
- Install range of bird nesting and bat boxes for existing and predicted species.
- Swift boxes are encouraged to be provided in liaison with Essex Swifts.

Amphibians

- Provide an attenuation pond in north-west corner, ideally designed to hold water between March-May.

Badgers

- Buffer planting along the northern edge to protect intermittently used badger sett.

Planting

- Opportunity to provide new species-diverse tussocky. grassland near water bodies such as attenuation pond.
- Wildflower meadow to be incorporated.
- Link habitats with green corridors to enable movement of wildlife within and beyond the site.

6.3.6 Habitat and Ecology Interventions

Through varied habitats and a range of considerate interventions, flora and fauna will be protected and enhanced across the site.

Planting & Trees

Ecological standards for the development will ensure a diverse range of planting that emulates, enriches and adds to the existing habitat. Native and non-native species shall be incorporated for maximum benefit to wildlife. Standards for the treatment of perimeter boundary habitats will encourage and enable nesting, foraging and commuting.

Key planting types across the site shall include:

- Building buffer comprising shrubs, climbers, meadow, hedge, evergreen and perennial plants.
- Perimeter boundary buffer comprising mixed native hedgerow, dry grass and scrub.
- Native and non-native species.

SuDS

The integrated network of Sustainable Drainage Systems (SuDS) add significant ecological value across the site. Section 6.4 'SuDS & Surface Water Drainage' and 6.2 'Soft Landscape Standards' sets standards for:

- Reed Beds
- Swales & French Drains
- Green & Blue Roofs
- Attenuation Ponds
- Existing Field Drainage Ditches

Specific Habitat Interventions

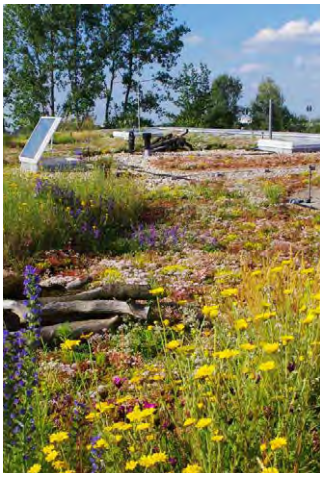
A range of specific habitat interventions will be incorporated in appropriate locations, including:

- Wildflower/tussocky grassland.
- Hedgerow creation along boundaries to provide additional habitat linkages where these might be missing.
- Tree planting to create small pockets of cover/shelter within the soft and hard landscape.
- Log and hibernacula pile creation.
- Habitat walls.
- Biodiverse green roof.
- Bat boxes.

A range of bird-nesting boxes must be installed in suitable locations across the site to accommodate:
a) Swallow, Swift and House Martin
b) Wren, Robin and Pied Wagtail
c) Blue Tit, Great Tit and House Sparrow.

Habitat wall

Log piles



Biodiverse green roof

Habitat wall

Green and ecological landscape

Planted SuDS elements

6.4 SuDS & Surface Water Drainage Strategy

6.4.1 Introduction

An integrated and green approach to dealing with run off surface water drainage is essential and forms part of the overall aims and aspirations for Horizon 120.

The systems will be designed to ensure that surface water discharge rates do not exceed the appropriate greenfield equivalent, to mitigate the impact of development on flood risk beyond the site. The systems will also provide interception and water quality management.

The Sustainable Drainage Systems (SuDS) components will include both soft and hard-engineered features and shall act at various scales. Visual, amenity and biodiversity benefits are to be attained through the provision of SuDS. The character of the development plots will be enhanced through the natural aesthetic and careful design of the SuDS.

These also help to create a green feel, outlook and a pedestrian friendly environment. Planted SuDS features also form an important part of the site's biodiversity and ecology strategy, with vast benefits to wildlife and people.

The below sets out the surface water drainage design considerations for the new development in order to comply with National and Local guidance and policy.

6.4.2 Existing Surface Water Runoff

- The existing site is used as a single arable field.
- There are existing drainage ditches running along eastern and western boundary. The drainage ditch running along eastern boundary, runs across the site from east to west and discharges into the western ditch near the north west corner of the site.
- Site runoff from the existing site discharges into the drainage ditches running around the site boundaries.

6.4.3 Surface Water Outfalls

- The geotechnical properties of the soil beneath the site, including the impermeability of the clay or sandy clay and the London Clay, mean that infiltration drainage is not likely to be viable. However, infiltration test may need to be carried out to assess the infiltration rate at different locations. Therefore, proposed drainage strategy would be to discharge site runoff in the existing drainage ditches around the site at a controlled rate via one or multiple outfalls.

6.4.4 Design Parameters

- All drainage including SuDS to be designed in accordance with standard industry guidance.
- SuDS must be provided within each development plot, where feasible, to initiate the management of surface water as close to source as possible.
- SuDS are to be integrated into infrastructure corridors and strategic landscape designated in the Design Code.
- SuDS are to be designed sensitively to augment the landscape and wherever possible provide biodiversity and amenity benefits.
- SuDS are to be designed to allow for effective maintenance. All components shall be located where they will be accessible to a responsible management body.
- Attenuate surface water flows on site to control discharge rate at the pre-development run-off rates.
- The drainage proposals must be tested against 1 in 2, 30 and 100 year return periods including the climate change factor.
- Design attenuation volume of surface water storage must be for a 1 in 100 year event plus climate change events.
- The drainage design for the main road network shall be to adoptable standard.
- The principles of SuDS as defined in the 'CIRIA SuDS manual' and the 'Sustainable Drainage Systems Design Guide' produced by Essex County Council must be used in the design of the surface water drainage.
- The SuDS surface water drainage is to provide treatment to maintain or improve water quality in the key receptor of surface water flows from the development.

The road design proposal includes swales running parallel to the road, where feasible. There will be a main carrier drain along the spine road, which ultimately will discharge in the attenuation pond proposed in Zone D. The road drainage shall be designed to adoptable standards.

Surface water runoff from each development plot to be discharged into the swales (where possible and applicable), permeable paving (if applicable) and standard drainage network prior to discharge into the main carrier drainage network running along the proposed roads. Swales and any other on plot SuDS elements to provide some attenuation by slowing the discharge rate as well as treatment.

Along the main carrier drainage, a traditional gully drainage system will be provided, connecting into the carrier drain. The carrier drain will be discharging into the proposed attenuation pond in the low lying area of Zone D with a greenfield discharge rate in to the existing drainage ditch located in the north west corner of the site.

Plan 12: SuDS Strategy Plan

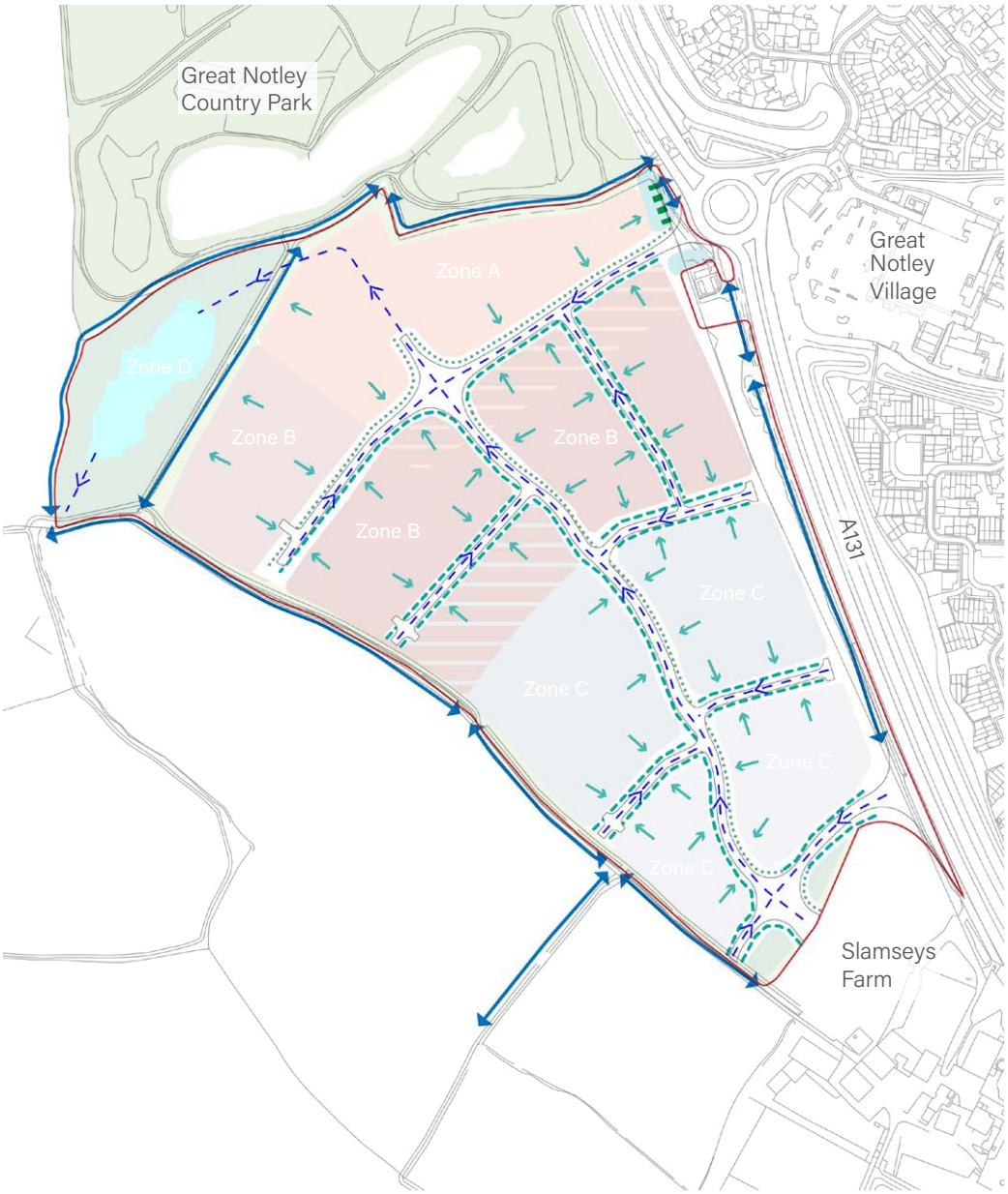
Existing drainage ditch

Rain gardens

Planted swales

Attenuation pond

French drain



6.4.5 Summary

The discharge, attenuation and adoption principle of the proposed surface water drainage network includes:

- Individual plots to include source control measures (where feasible) such as: swales, rain gardens, permeable paving, green/blue roof, water harvesting etc.
- Where required, individual plot drainage to be provided with appropriate treatment measures.
- The roads will be provided with traditional gully drainage and carrier drainage network.
- Individual plots to discharge into the carrier drain running along the roads or into the adjacent ditch, if feasible.
- Attenuation pond with sufficient capacity to be provided at the downstream of the carrier drainage network in Zone D.
- Discharge from the attenuation pond will be made into the adjacent drainage ditch at a controlled greenfield rate.
- All connections will be subject to agreement and approval from the appropriate regulating body.
- Surface water drainage of individual plots will be adopted by the sewer authority or will remain private.

The detailed drainage strategy for the site, including methods of attenuation (SuDS), will be agreed through consultation and approval with the Local Planning Authority (LPA), Lead Local Flood Authority (LLFA) and the Environment Agency (EA).

Suitable SuDS features for the site shall include the following:

- Swales, rain gardens & french drains
- Permeable Paving
- Attenuation Ponds or Basins
- Green & Blue Roofs
- Greywater recycling (if possible)

The SuDS surface water drainage will provide treatment to maintain or improve water quality. Where required by the LLFA and the EA, such areas where surface water run-off may contain oil / hydrocarbons, surface water drainage systems shall pass through an oil separator prior to discharge to key receptors such as ground water, watercourses or main rivers.

6.4.6 Phasing of the Development

It is anticipated that the site will be developed based on individual plots / zones being constructed and occupied in phases. This will require the surface water drainage to be designed so that the run-off from each phase are treated appropriately on site prior to discharge in the site wide network. The discharge from individual phases in to the spine network would be unrestricted. Although the required attenuation will be provided within the site wide drainage strategy; each phase to include some source control and treatment measures i.e. swales, permeable paving, petrol interceptor etc. Swales and permeable paving would provide short term storage with treatment and can also slow down the runoff rate. This is to ensure that the development does not adversely impact on flood risk and water pollution during a phased delivery of the development.

6.4.7 SuDS Types

Principles for the how the drainage works across the site using types of SuDS systems are outlined below:

SD1: Swales, French Drains & Rain Gardens

- Applies to Zones A, B and C.
- Run off water from development plots to drain to french drains, rain gardens and swales (where possible and applicable) and then join the main carrier pipe connecting to the attenuation ponds in Horizon Park.

SD2: Permeable Paving

- Permeable paving is to be used as set out in section 6.1 'Hard Landscape Standards' and 4.7 'Plot Landscape Standards.'
- Pedestrian paths and amenity areas are to either be permeable surface material or drain to soft landscape areas.

SD3: Green & Blue Roofs

- Green and/or blue roofs are to be used on all flat roofs in Zones A and B.
- Where Photovoltaic systems (PVs) are used, these shall be combined with brown roofs where possible.

SD4: Attenuation Ponds (Horizon Park)

- Attenuation ponds and soakaways must form part of the new park landscape to the north adjacent to the Country park.
- Detailed information on the size requirements for these should be requested from the Local Authority and engineers in the development of design proposals for this area.

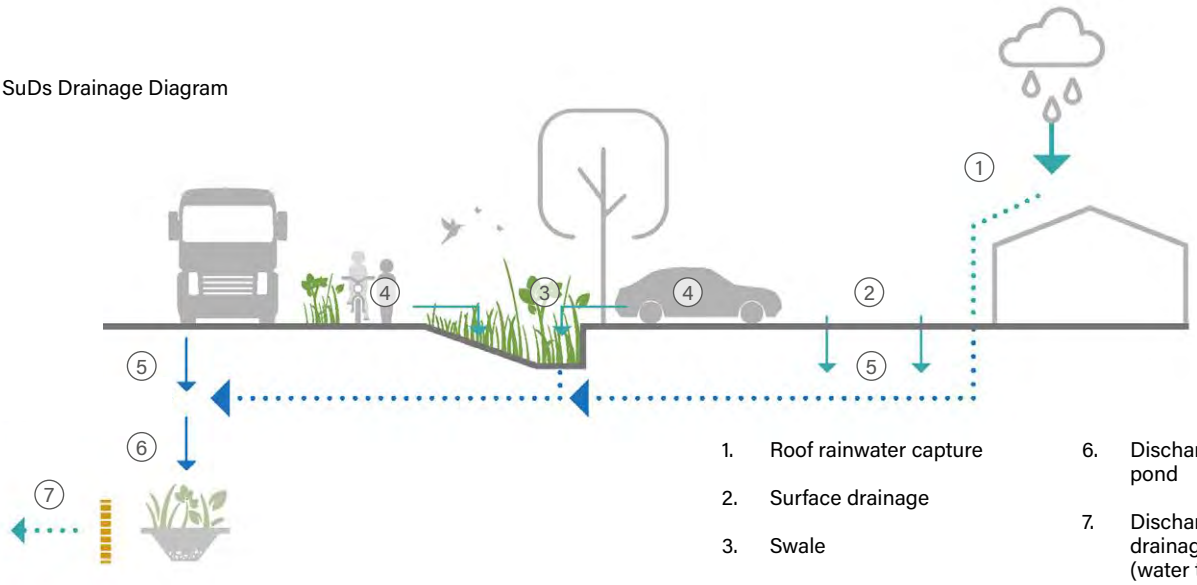
SD5: Existing Field Drainage Ditch

- The attenuation pond must discharge into the existing field drainage ditch.
- No industrial surface water drainage is allowed to enter the existing ditches without going through an oil separator prior to discharge.

SD6: Rainwater Harvesting

- Rainwater to be collected from roofs and surfaces and reused for landscape irrigation and watering where possible.
- Should be applied to all zones where possible, but essential to zone A and B.

SuDs Drainage Diagram



1. Roof rainwater capture
2. Surface drainage
3. Swale
4. Surface runoff
5. Discharge into main carrier drain
6. Discharge into attenuation pond
7. Discharge into existing site drainage ditch (water to pass through an oil separator prior to discharge)

6.4.8 SuDS Soft Landscape Principles

French Drain Principles:

- Central gravel base to create temporary sub surface storage for attenuation and filtration of surface water runoff.
- Planted with meadow.
- Promotion of relaxed cutting regime to promote biodiversity.
- Regular management required to ensure functionality.
- French drains depth to allow piped drainage from development plots where possible.
- To be lined against buildings and trees.

Swale Principles:

- Central gravel base to create temporary sub surface storage for attenuation and filtration of surface water runoff.
- Max 1:2.5 slopes.
- Meadow and shrubs to be planted to slopes.
- Promotion of relaxed cutting regime to promote biodiversity.
- Regular management required to ensure functionality.
- Swale depth to allow piped drainage from development plots where possible.
- To be lined against buildings and trees.

Attenuation Pond Principles:

- To form part of the natural landscape in Horizon Park, to store and retain surface water drainage.
- Details of attenuation ponds to be confirmed through detailed drainage strategy.

- All SuDS elements and systems to be installed and follow best practice and guidelines as set out in 'CIRIA's 2015 SuDS Manual (C753).'

6.5 Boundaries

6.5.1 Introduction

This section is setting standards for the plot boundaries in relation to what is allowed in terms of fences, gates or other means of enclosure. The standards set out apply to both boundaries next to main roads and boundaries to individual sites/developments within plots or character areas.

The aspiration is to create friendly, welcoming and green boundaries in line with the overall vision for Horizon 120.

6.5.2 General Principles

- To achieve a balance between the need for companies to create secure business premises with the need to establish an attractive and high quality business park environment.
- Boundaries such as fencing and gates should not affect the public realm negatively, but instead add to the character of the landscape.
- Planted buffers including trees and climbers are essential to green boundaries where there is a need for a secure boundary.
- Design parameters include heights and types of boundaries.
- Planted buffers and permeability shall form key design considerations.
- Adjacent boundary treatments must be considered and relationship between individual plot boundaries must be established.
- Boundaries must not be overbearing and sensitive to their surroundings.
- All boundaries are to be visually permeable and welcoming.

6.5.3 Design Parameters

Design parameters are set out in the relation to the three zones to suit the land use and need for businesses.

- **Zone A**
  Horizon Hub and Horizon Gateway
- **Zone B**
  Horizon Parkview & Horizon Glades
- **Zone C**
  Horizon Paddocks and Horizon Fields

The standards are set out in the table 9 and must be followed.

6.5.4 Screening of Boundaries

To ensure boundaries to plots are seen as a positive contribution to both public realm and private landscape - screening of boundaries with planting is essential. Principles in table 9 overleaf and 6.5.6 'Screening Principles' must be followed.

6.5.5 Types of Boundaries

A range of boundary types are acceptable as set out in the table 9 overleaf. These range from planted boundaries, biodiverse gabion walls to secure fencing and gates. Planted boundaries must be used to mark out boundaries between individual plots across all zones if a boundary is required.

Secure boundaries are only allowed to Zone B and C. Must follow principles for screening as set out in the table 9 overleaf. Standards and extent of boundaries must adhere to section 4.6 'Plot Landscape Standards.'

Permitted railings/fencing types to Zone B and C are:

- Galvanised or stainless steel square weld mesh fencing.
- Galvanised or stainless steel vertical bar and grate railings

Palisade fencing to Zone B and C:

Palisade fencing is allowed. It must not face an entrance or secondary road as set out at in 4.6.7 PL5: Fencing & Other Boundaries and cannot form part of the plot front boundary landscape. It is only permitted facing green links, between plots (where there is no secondary or entrance road between as per PL5: Fencing & Other Boundaries) or facing the boundaries of the Horizon 120 site.

If railings or fencing are sought facing an entrance or secondary road, this must be permitted as set out at in 4.6.7 PL5: Fencing & Other or must be square weld mesh fencing or vertical bar and grate railings (as set out above). They must be set back beyond the plot front boundary landscaping forming a secure boundary in line with the building footprint. These must be either black or dark grey in colour and have a galvanised powder coated finish.

6.5.6 Screening Principles

General Principles:

Secure Boundaries and Open Storage & Service Bay Yards must be screened by planting where these form part of a boundary facing the main road network, Horizon park, the County park or open views to the countryside along the western boundary of the site.

Open Storage & Service Bay Yards (all zones):

Must be screened as per standards set out above in general principles and as below for planted buffers. Screening must be provided on the outside.

Secure Boundaries to Zone B and C:

Must be screened as per standards set out above in general principles and as below for planted buffers. Screening is also required where the adjacent strategic landscape does not have any trees and shrub planting.

Screening can be provided on either inside of the fence or outside of the fence. If screening is located on the inside - shrubs and climbers must be allowed to grow through the fence to ensure greenness is seen from the outside.

Planted Buffers:

- Hedge or shrub planting minimum 1.5m (W).
- Shrub and hedge planting must be a mix of deciduous and evergreen species to ensure year around interest.
- 2 climbers/m must be included.
- All climbers must be evergreen and have adequate support.
- Principles as per section 6.2 'Soft Landscape Standards.'

Table 9: Boundary Standards

Zone		A	B		C
Character Area		**Horizon Hub**	**Horizon Parkview**	**Horizon Glades**	**Horizon Paddocks & Fields**
Boundary Type	Fencing	▪ Not allowed	▪ Allowed ▪ Space must be allowed for screening as set out in 6.5.6 Screening Principles.		
	Low Gabion Walls	▪ Allowed ▪ No inset from plot boundary required. ▪ No screening required to front of boundary facing public realm. ▪ Planted buffer to be provided at the back of the boundary (within the plot).			▪ Allowed ▪ No inset from plot boundary required. ▪ No screening required to front or back of the boundary.
	Gates	▪ Not allowed	▪ Allowed ▪ Gates at vehicle entrance points shall be set back at least 6m from the plot boundary to allow vehicles to enter sites without causing an obstruction on the road.		
	Screening Boundaries to Open Storage & Service Bay Yards	▪ Boundaries to screen open storage and service yards allowed. ▪ Must follow principles set out in 4.2.4 'Open Storage & Service Bay Yards.'	▪ Boundaries to screen open storage and service yards allowed. ▪ Must follow principles set out in 4.4.2 and 4.5.3 'Open Storage and Service Bay Yards.'		▪ Boundaries to screen open storage and service yards allowed. ▪ Must follow principles set out in 4.4.2 and 4.5.3 'Open Storage and Service Bay Yards.'
Height		▪ Maximum 1.1m (H). ▪ Screen walls are allowed to be maximum 2.0m (H).	▪ Maximum 2.0m (H) to plot front boundary. ▪ Maximum 2.5m (H) to plot back boundary. ▪ Screen walls are allowed to be maximum 2.5m (H).		
Planted Buffer		▪ Shall be provided to both sides of a boundary within character areas between individual plots as set out in section 4.6 'Plot Landscape Standards.' ▪ No planted buffers are necessary when these face adjacent strategic landscape and already have planted buffers.			
Screening (provided by planting)		▪ Required for boundaries to open storage & service bay yards as set out in 6.5.6 Screening Principles.	▪ Required for boundaries to open storage & service bay yards and secure boundaries as set out in 6.5.6 Screening Principles.		

Low hedge boundary

Gabion wall

Planted permeable fencing

Secure boundary with trees and planting to front

Gates set back from road

6.6 Furniture

6.6.1 Introduction

Furniture will be integrated throughout the business park as a way to activate spaces and offer users and visitors the chance to rest, meet and exercise.

The design standards aim to provide a clear and succinct set of principles to support the integration of furniture that is practical, attractive and inclusive.

To ensure a business park which is unique, interesting and personalised, this Design Code will establish four furniture typologies and provide a series of principles for each, as opposed to demanding any exact design, detail or style of furniture.

Examples of the furniture typologies provided overleaf are intended to illustrate these design principles.

6.6.2 General Principles

Furniture shall be located at appropriate points throughout the business park to meet the expected needs of users of each character area. Four furniture typologies are to be provided:

- Rest and Relaxation
  Furniture which allows users to sit, lie down and be still.
- Formal and Informal Meetings
  Furniture which supports groups of users to meet, both formally as part of the working day, and informally to socialise outside of working hours.
- Invitations to Exercise and Play
  Furniture that promotes a healthy lifestyle and offers users the chance to interact with each other through play and exercise.
- Furniture to meet the practical requirements of a business park
  Furniture that provides for the practical, day-to-day needs of business park users and visitors, such as bins and bollards.

Key areas for furniture include:

- Horizon Hub
- Horizon Park & Walk
- Horizon Gateway
- Entrances areas to buildings
- Amenity areas within plots
- Rest stops/meeting points along footpaths

6.6.3 Furniture to Encourage Rest & Relaxation

Seating within plots

- Plot developers must provide users - employees and visitors with regular seating opportunities. These should be functional, comfortable and located close to building entrances, along pedestrian routes and within amenity areas, as per principles set out in section 4.6 'Plot Landscape Standards and 4.7 'Plot Front Boundary Landscape.'

Seating along footpaths

- Regular seating opportunities must be provided along Horizon Walk and other public footpaths as set out in section 3.3 'Amenities - Health & Well-being' and In line with the guidance set out in 5.2 'Perimeter Buffer Landscape.'
- Seating as part of rest/meeting points is encouraged to take a more playful, colourful and creative aesthetic to provide interest and aid wayfinding.

Seating within Public Realm

- Seating must be provided to Horizon Hub and Horizon Park to promote socialising and respite.
- Materials should be selected to compliment the surroundings, with more dynamic and playful seating in the Hub and more natural and informal seating in Horizon Park.

6.6.4 Furniture to Enable Formal & Informal Meetings

- Users of the business park should have the opportunity to hold formal meetings outside.
- Developers must provide tables for groups of people to meet within plots.
- Group seating and tables must also be positioned within the Horizon Hub.

6.6.5 Furniture Inviting Exercise & Play

To achieve the aims set out in 3.3 'Amenities - Health & Well-being', furniture that encourages and invites exercise and play must be incorporated within the public realm.

Exercise

- Informal outdoor gym equipment such as monkey bars and balance beams must be located within the Horizon Park and along Horizon Walk.
- Informal exercise opportunities must also form part of rest/meeting points along the internal road network.
- Water fountain(s) must be provided within Horizon Hub.

Play

- Team recreation opportunities such as table tennis tables to be considered within Horizon Hub and amenity areas within plots.

6.6.6 Furniture to Meet Practical Requirements

Bins

- To keep the business park clean and environmentally aligned, developers and the local authority must provide rubbish bins close to seating and meeting areas.
- Bins must comprise recycling as well as landfill.

Bollards

- Bollards must be kept to a minimum with soft planting used to demarcate areas wherever possible. When necessary, galvanized steel or timber bollards should be selected.

Cycle Parking

- Businesses should provide a mix of short and long-stay cycle parking adjacent to building entrances.
- All cycle parking must comply with guidance set out in 6.10 - 'Parking Standards' - 6.10.7 'Cycle Parking Design Guidance.'

6.6.7 Specification & General Standards

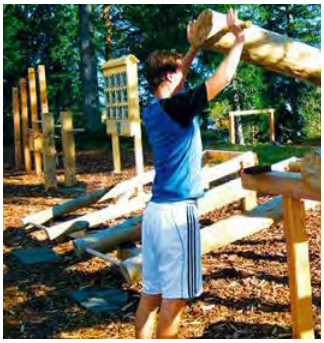
General specification for all furniture:

- Furniture that supports sustainability and has low climate change impact must be selected.
- Seating slats/components the user is in contact must be softwood.
- All softwood selected must be north European or UK sourced.
- Suppliers that are promoting and progressively measuring carbon reduction must be used.
- All furniture must be robust and low maintenance.
- Stone seating may be used in Horizon Park.
- Stone must be quarried in UK.

General Standards:

- A family or range of furniture must be specified across Horizon Park, Gateway, Walk and Hub to ensure continuity.
- Individual plots are allowed to specify their own furniture, but it must meet the general specification above.
- The general specification above must be met and evidence must be submitted as part of the compliance checklist.
- All general principles set out must be followed and furniture included as set out.

Horizon Walk



Invitation to exercise: Natural outdoor gym equipment

Seating within planting

Horizon Park

Informal seating integrated into landscape

Simple, natural and sociable seating

Horizon Hub

Furniture to enable meetings to take place outdoors

Social play: Table tennis tables

Sustainability: Water fountains

Rest Stops/Meeting Points (along the road network)

Dynamic and colourful seating

Practical elements encourage environmentally conscious lifestyle

Amenity Areas (within plots)

Amenity areas and seating set within planting

6.7 Public Art and Sculpture

6.7.1 Introduction

Public Art and Sculpture are effective ways to make Horizon 120 a pleasant, interesting and memorable place that stands out and feels different to standard business parks.

Involving local artists in creating art pieces is also a good way to connect with and support the existing community. Instigating competitions and involving local schools and colleges can work to root the development within its community.

6.7.2 General Principles

The approved 'Horizon 120 Wayfinding Strategy' sets out more detailed principles and guidance for the delivery of public art which must be complied with

Public art and sculpture are great ways to aid wayfinding and to spark discussion and add interest.

Public art or sculpture must be prioritised in the following places:

- Horizon Hub
- Horizon Walk
- Horizon Park

Other locations could include entrances to individual plots.

6.7.3 Public Art and Sculpture Typologies

The public art strategy could typologies for public art and sculpture as per below:

- Site Inspired Public Art and Sculpture
  Art and sculpture that draws on the natural surroundings.
- Interactive Public Art and Sculpture
  Art and sculpture that invites users to play and interaction.
- Educational Art and Sculpture
  Art and sculpture that has educational value.

6.7.4 Site Inspired Public Art and Sculpture

The vision for Horizon 120 is very much inspired by the ecology and landscape within which it sits.

To help embed the values and vision underpinning the development, the Local Authority and Plot Developers are encouraged to commission public art and sculpture which interprets and celebrates the surrounding flora and fauna.

In order to ensure a pleasant environment throughout all phases of construction, developers must select hoarding boards that help to create an attractive backdrop.

6.7.5 Interactive Public Art and Sculpture

Sculptural seating, bespoke and unique play equipment, and large-scale art pieces that can be enjoyed up close by users will contribute towards the aims of creating a green and healthy business park. Principles of these could underpin public art to Horizon Hub.

6.7.6 Educational Art and Sculpture

There is an opportunity for Horizon 120 to promote learning and increase understanding of the different businesses occupying the site.

Horizon Hub offers a flexible space which could host a range of events and exhibitions. These could range from local sharing of projects that Horizon 120 businesses are working on, through to wider global issues.

6.7.7 Delivery & Specification

The approved 'Horizon 120 Wayfinding Strategy' includes a strategy for public art.

Local artists shall be considered as part of the strategy to ensure a site wide strategy for the business park is delivered. Community involvement must form part of the strategy.

Locations for art must be specified in the strategy and these must consider and be sensitive to the open views to the surrounding countryside and views to and from the Country park. Locations must also consider way finding and signage locations and aid to these where possible.

All general principles and typologies for art and sculpture must form part and be adhered to within the strategy.

Use of nature-pattern hoarding creates a pleasant environment

Horizon Hub: Showcasing business - Public Exhibition Boards

Sculptural seating to mark entrances and public space

A carefully chosen sculpture can help create a strong sense of place

Sculptures inspired by the surrounding nature

Playful sculptures invite interaction

6.8 Signage & Wayfinding

6.8.1 Introduction

Way finding and signage form an essential part of the business park to ensure easy navigation for both pedestrians and vehicles.

The design standards are set to provide clear and concise wayfinding and signage principles set to establish contemporary and industrial signage which is legible and inclusive.

Three signage typologies must be used as set out below:

- **Site Wide Wayfinding Signage -** including Horizon 120 entrance signs
- **Individual Building / Company Signage**
- **Interpretative Parks and Nature Signage**

The establishment of character areas and naming across the site will help to organise the site and aid wayfinding.

Other wayfinding principles include the use a clear street hierarchy with associated soft and hard landscape as specified through the Design Code.

Examples of the signage typologies provided overleaf are intended to illustrate these design principles.

6.8.2 General Principles

The approved 'Horizon 120 Wayfinding Strategy' sets out more detailed principles and guidance for the delivery of signage and wayfinding which must be complied with.

The strategy shall follow principles below:

- Signage to be used when necessary and avoid visual clutter.
- Must form part of the process of planning the building and the environment.
- Must be consistent, legible and accessible.
- Must be simple, positive with informative messages and easily maintained.
- Must be predictable and consistent.
- Colours and numbers shall be considered to organise and link the site layout for easy navigation.

Signage and landscape elements (such as feature/specimen trees) shall be placed at decision points and junctions to help wayfinding decisions. Sight lines shall also be used to show what is ahead.

6.8.3 Signage Typologies

The three signage typologies must form part of the signage strategy and fall into the varieties below:

- Naming Signs
  Signs which denote the name of a particular public realm or character area at a point of entry or exit.
- Directional Sign/ Map Sign
  A sign that establishes the readers' position and connects them to other points.
- Interpretative
  Signs that identify a particular educational quality of an area or building.

6.8.4 Site Wide Wayfinding Signage

Distinct Horizon 120 signage must be placed at the two entrances. Site wide wayfinding signage shall follow the principles as set out overleaf.

- Signage to be set in planted areas and follow the overall aims and aspirations for the business park.
- Directional maps must be placed at entry points and key spaces such as the Horizon Hub, Horizon Park and Horizon Gateway.
- Directional signs must help to direct users to different areas.
- Colour and numbering linked to character areas must be explored to aid site wide wayfinding.

6.8.5 Individual Building / Company Signage

Outlined below is a series of standards to be followed:

- The sides of raised letters shall be different colour to the face.
- Halo lighting is encouraged.
- Signs to the main building shall be located in the top right hand corner and at the entrance.
- Maximum number of building signs to be 1 main corporate sign on each elevation.
- No illuminated sign to the buildings facades along the south west /bridle path elevation.
- Maximum of 2 illuminated main corporate signs.
- Ratio of sign sizes to follow 1/6 or as close as possible.
- No box signs will be allowed.
- Signage design and source of illumination to be included within the validation planning elevations.

6.8.6 Interpretative Parks and Nature Signage

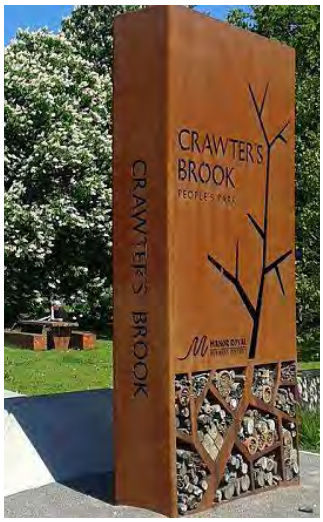
There is an opportunity to explore simple interpretative signage to form part of the Horizon Park & Walk. Outlined below are a set of principles to be followed.

- Signage could include distances, show links to wider surrounding footpath network, information about flora and fauna and links back to the business park.
- The signage and signposts will also act as landmarks in the landscape and could be further highlighted by other landscape elements such as feature trees and planting.

6.8.7 Delivery & Specification

The approved 'Horizon 120 Wayfinding Strategy' includes a strategy for signage and wayfinding. The strategy must include time scales for implementation.

Horizon 120 Business Park Signage



Integrated signage with habitat wall

Inclusive and legible signage

Use of colour and numbering to aid wayfinding per character area

Individual Company Signage

Innovative and creative signage Individual business signage

Contemporary and industrial signage

Lighting embedded within signage

6.9 Lighting

6.9.1 Introduction

The external lighting strategy aims to create a clutter free, safe and legible landscape which is also sensitive and protective towards the needs of the local wildlife. A layered approach to lighting is important for safety and creates a comforting atmosphere.

The strategy will seek to minimise the number of luminaries used and provide only the lighting levels required for safe access to and the use of the site for normal operation.

Feature lighting shall be considered to aid way finding and to add atmosphere to key areas such as Horizon Hub and square area.

The lighting across the business park shall comply with 'Dark Sky' principles to protect wildlife and promote the site to be used as a green corridor.

All lighting to follow Essex County Council and Braintree District Council's guides and specifications.

6.9.2 General Description

In considering the external lighting strategy - lighting levels required for safe access to and use of the site for normal operation shall be considered.

The proposed lighting scheme shall incorporate column-type fittings to provide illumination to the access roads and footpaths along the main road network. Wall mounted fittings shall be incorporated around the perimeter of buildings to allow safe illuminated access around the circumference.

The lighting to the main road network, access roads and car parks shall be designed to BS EN 13201-2 in accordance with the guidelines given in BS5489-9.

Exterior areas around the individual buildings shall be provided with high quality lighting which is both is highly functional and visually appealing.

The lighting design shall incorporate the recommendations of the Chartered Institute of Building Services Engineers guidance as published in documents LG1 and LG6, which ensures the scheme provides the appropriate lighting levels and colour renditions for defined activity spaces.

In using the guidance issues of safe movement of people and vehicles around buildings by providing sufficient illumination whilst avoiding overlighting and effects of this on the surrounding areas will be addressed.

Lighting must not cause any nuisance to nearby residential occupiers

6.9.3 Key Principles

The lighting strategy to be based on the following key principles:

- Lighting fitting and location to create welcoming, attractive and safe places.
- Establish a clear hierarchy in fittings responding to their location to accentuate its character and type of space and required lux levels.
- Softer lighting shall be used in areas for seating, socialising and in green spaces and brighter light on roads and larger areas.
- All lighting must be robust and low maintenance.

6.9.4 Lighting Specification

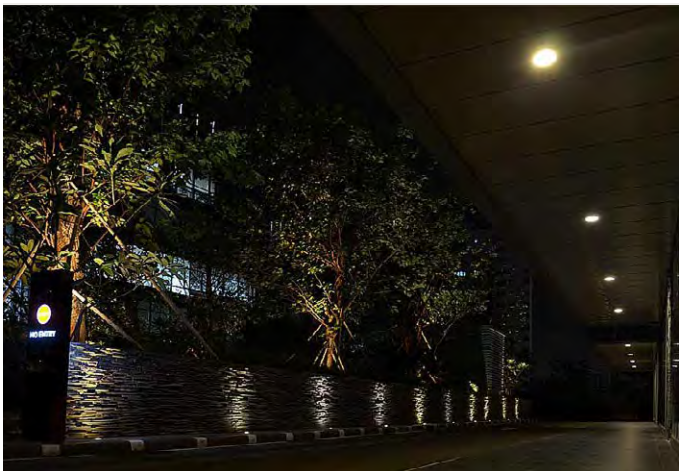
Outlined below are a set of standards to be followed.

- LED light sources shall be used for all the columns and wall mounted fittings throughout to provide an energy efficient solution.
- Maximum height of lighting columns is 6m.
- All the lanterns within access road and car parks shall be mounted at a zero/five degree inclination and incorporate a flat glass protector, to result in no upward light spill.
- Lighting standards to provide a scheme compliant with the International Dark Sky Associations and The Institution of Lighting Professionals (ILP) Requirements for a 'dark sky' design.
- Any luminaries used to incorporate integral reflectors to control the light distribution – the effect of these can be effectively modelled to ensure the layout has been designed with the minimal possible throw of nuisance light on neighbouring properties, roadways and surrounding countryside.
- All external site lighting shall be controlled by a photocell and time clock arrangement to ensure that the luminaries are only in operation when required and that their hours of operation can be controlled and seasonally adjusted.

All lighting to the main road network and footpath needs to meet the standards as set out in the 'Essex Highways Street Lighting Development Specification' to meet adoptable standards.

Lighting to main road network

Low level bollard lighting set in the landscape



Lighting as part of the buildings

6.9.5 Types of Lighting

The lighting across the site shall include both functional lighting and feature lighting and follow principles below:

- Functional Lighting
  Functional lighting in form of lighting columns, bollard lighting and wall mounted lighting to buildings shall be included to main roads, access roads, car parking, service areas as well as entrance areas.
- Feature Lighting:
  Feature lighting shall be considered to the entrance area and Horizon 120 signage, site wide wayfinding signage and hard and soft elements part of Horizon Hub Square. These could include up-lighting to trees and planting, lighting to street furniture and art/sculptures.

Feature lighting to square

Atmospheric lighting to hub area

6.9.6 Dark Sky Principles

Lighting within Horizon Walk and Horizon Park shall utilise dark sky principles, reducing illumination by:

- Installing fewer light sources.
- Using timers to reduce duration.
- Favouring the warm end of the spectrum.
- Lux levels lower than 0.5 lux.
- No upward light spill.

6.9.10 Continuity of Lighting

Continuity of lighting to all strategic landscape elements - Horizon Hub, Horizon Gateway, Horizon Park and Horizon Walk - must be established. A family or range of lighting must be specified across all character areas above.

All roads must also have consistent lighting and the same lighting column must specified across all roads. The lighting column must be modern, simple and dark grey or black in appearance.

Low level lighting to perimeter walk

6.10 Parking Standards

6.10.1 Introduction

This chapter sets out the parking standards for the new development both in terms of provision and design. Essex County Council key policy documentation in relation to parking provision and design are:

- 'Parking Standards – Design and Good Practice' (September 2009).

Essex County Council set out parking standards for new developments within their 'Parking Standards – Design and Good Practice' (September 2009), which Braintree Council has adopted. The parking standards relevant to the development site are set out in table 10 'Parking Standards Table and have been updated to reflect the current Use Classes.

6.10.2 Calculating Parking Requirements

All parking requirements are worked out by the gross floor area of a building. The gross floor area of a building refers to the total covered floor area inside the building envelope, including the external walls of the building.

Where buildings comprise a number of floors, the total gross floor area is multiplied by the number of floors, minus any void areas to take account of inconsistencies in the gross floor area of different floors.

Where industrial buildings comprise an ancillary office, parking requirements are calculated by reference to the total amount of gross floor area in B2 (industrial) or E(g) (office and light industrial) use.

Given the nature and size of the Sui Generis Bus Depot, parking standards are not set out. Adequate parking, including cycle parking, must be provided and should be proportionate to the number of employees.

6.10.3 Car Parking Design

Location of Parking Spaces

As the site is adjacent to a number of residential and commercial areas, inadequate provision of onsite parking within the site could potentially lead to an overflow of parking into the adjacent residential areas. For this reason, it is considered to be essential that adequate parking provision is provided for the development.

Visitor car parking to the front of plots facing the public realm is acceptable. All other parking including employee car parking should be located to the rear of plots. All servicing and delivery should also be carried out from the rear of the plots.

Alternative sustainable travel modes, as identified within the 'Travel Consideration' section, are to be promoted to reduce the need for use of the private car.

Parking Bays

The Essex Design Guide states that a parking space should measure at 5.5 metres by 2.9 metres.
Parking spaces between structures may require an increased area for pedestrian movements around the vehicle. In the case of layby parking on a highway, spaces should be 6 metres by 2 metres where adjoining a footway or 6 metres by 2.4 metres where no footway is provided.

6.10.4 Blue Badge Parking Design

Spaces for people with disabilities should be located adjacent to entrances, where possible, should be convenient to use and the dimension conform to the relevant regulations.

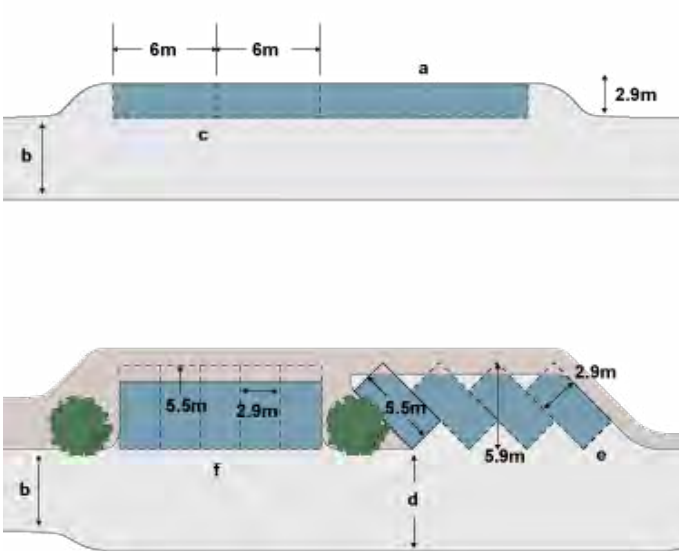
According to the 2018 Essex Design Guide parking spaces capable of use by disabled people must be widened to 3.6 metres or adjacent to an area on the same level, such as a lowered footway, containing at least a 1.2 metre wide space for getting in and out of vehicles.
However, the 'Parking Standards – Design and Good Practice' document suggests that blue badge parking bays should be at least 5.5 metres long by 2.9 metres wide with additional space as follows:

- Where bays are parallel to the access aisle and access is available from the side, an extra length of at least 1 metre and an extra 1 metre wide (minimum) safety zone to the side, or;
- Where bays are marked perpendicularly to the access aisle, an additional width of at least 1 metre along each side. Where bays are adjacent, space can be saved by using the 1 metre 'side' area to serve the space either side. A buffer of at least 1 metre should be provided between the parking space and the roadway to allow safe access to the boot of the vehicle.

Table 10: Parking Standards Relevant to the Development Site

Use	Vehicle Maximum	Cycle Minimum	Powered Two-Wheeler Minimum	Disabled Minimum
B2 General Industrial	1 space per 50sqm	1 space per 250sqm for staff plus 1 space per 500sqm for visitors	1 space, + 1 space per 20 car spaces (for first 100 spaces), then 1 space per 30 car spaces (over 100 car spaces)	200 bays or less = 2 bays or 5% of total capacity, whichever is greater. Over 200 bays = 6 bays plus 2% of total capacity
B8 Storage or Distribution	1 space per 150sqm	1 space per 500sqm for staff plus 1 space per 1000sqm for visitors	1 space, + 1 space per 20 car spaces (for first 100 spaces), then 1 space per 30 car spaces (over 100 car spaces)	200 bays or less = 2 bays or 5% of total capacity, whichever is greater. Over 200 bays = 6 bays plus 2% of total capacity
C1 Hotel	1 space per bedroom	1 space plus 5 staff plus 1 space per 10 bedroom	1 space, + 1 space per 20 car spaces (for first 100 spaces), then 1 space per 30 car spaces (over 100 car spaces)	200 bays or less = 3 bays or 6% of total capacity, whichever is greater. Over 200 bays = 4 bays plus 4% of total capacity
E(a) Shop	1 space per 20sqm	1 space per 400sqm for staff plus 1 space per 400sqm for visitors	1 space, + 1 space per 20 car spaces (for first 100 spaces), then 1 space per 30 car spaces (over 100 car spaces)	200 bays or less = 3 bays or 6% of total capacity, whichever is greater. Over 200 bays = 4 bays plus 4% of total capacity
E(b) Restaurant or Café	1 space per 5sqm	1 space per 100sqm for staff plus 1 space per 100sqm for visitors	1 space, + 1 space per 20 car spaces (for first 100 spaces), then 1 space per 30 car spaces (over 100 car spaces)	200 bays or less = 3 bays or 6% of total capacity, whichever is greater. Over 200 bays = 4 bays plus 4% of total capacity
E(d) Indoor sport, recreation or fitness	1 space per 10 sqm of public area	10 spaces plus 1 space per 10 vehicle spaces	1 space, + 1 space per 20 car spaces (for first 100 spaces), then 1 space per 30 car spaces (over 100 car spaces)	200 bays or less = 3 bays or 6% of total capacity, whichever is greater. Over 200 bays = 4 bays plus 4% of total capacity
E(e) Medical or health services	1 space per full time equivalent staff + 3 per consulting room	1 space per 4 staff + 1 space per consulting room	1 space, + 1 space per 20 car spaces (for first 100 spaces), then 1 space per 30 car spaces (over 100 car spaces)	Dependent on individual merit but higher than business or recreational development requirements
E(f) Early Years Childcare, Day Nursery or Preschool	1 space per full time equivalent staff + drop off/ pick up facilities	1 space per 4 staff + 1 space per 10 child places	1 space, + 1 space per 20 car spaces (for first 100 spaces), then 1 space per 30 car spaces (over 100 car spaces)	1 bay or 5% of total capacity, whichever is greater
E(g)(i) Office, E(g)(ii) Research and Development, E(g)(iii) Industrial Process	1 space per 30sqm	1 space per 100 sqm for staff plus 1 space per 200sqm for visitors	1 space + 1 per 20 car spaces (for 1st 100 car spaces) then 1 space per 30 car spaces (over 100 car spaces)	200 vehicle bays or less = 2 bays or 5% of total capacity, whichever is greater. Over 200 vehicle bays = 6 bays plus 2% of capacity

Car Parking Layout Examples and Standards

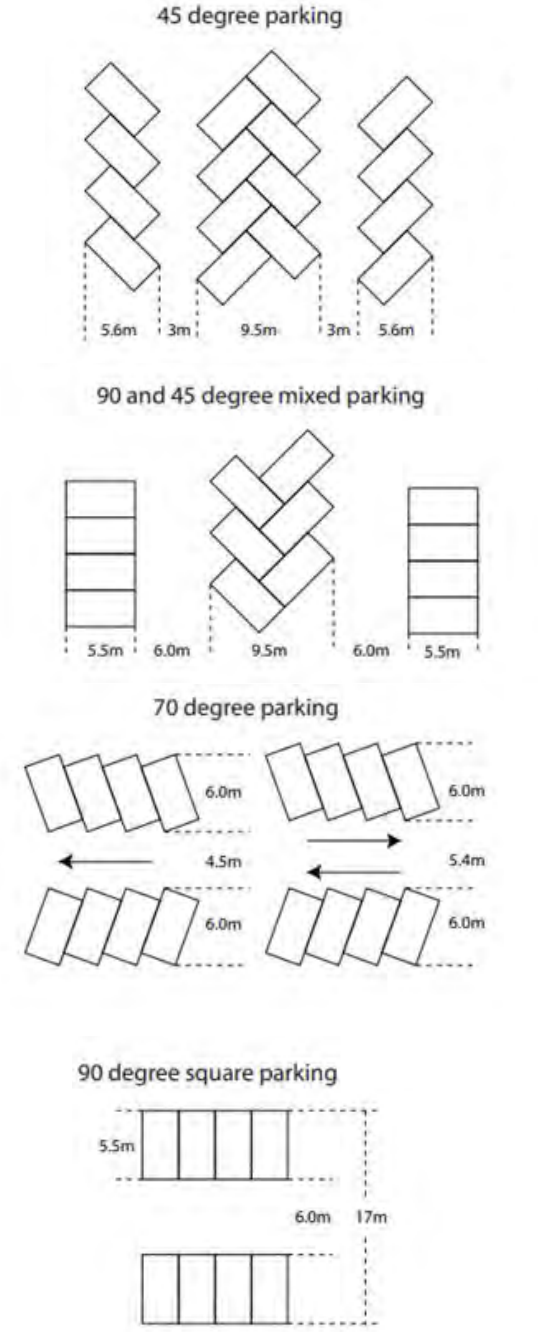


a. Limited number
b. Normal road width
c. Cars parked parallel to road
d. Road widens to allow turning
e. Cars parked at angle (echelon)
f. Cars parked at right-angle

In exceptional circumstances parking bays can be 2.5 x 5m

(Source: 'The Essex Design Guide', 2018)

Car Parking Layout Examples and Standards



(Source: 'Parking Standards – Design and Good Practice', 2009)

6.10.5 Layout of Parking Areas

There are a variety of parking styles including:

- Square parking.
- Angled parking.
- Parallel or 'End to End' parking.

Where spaces are at an angle to the kerb the footway should be widened by 0.8 metres to accommodate vehicle overhang.

Larger parking areas with rows of parking should allow an isle width of 6 metres to allow an appropriate area for manoeuvring into and out of spaces. At least 5% of spaces (with an absolute minimum of one space) in each parking area should be suitable for use by disabled people.

Parking areas that have end bays adjacent to solid structures (e.g. fence or wall) should increase the width of these bays by 1m to allow for improved manoeuvrability and entry/exit of people to/ from the vehicle.

6.10.6 Access to Parking Areas

Entrance ways to parking areas should adhere to the following criteria set out by Essex County Council:

- Up to 8 parking spaces – as for shared private drives.
- Nine parking spaces and over – access to be 4.1 metres in width, centreline bend radius 6 metres minimum, sight-lines as private drives, headroom 2.5 metres.
- Appropriate access for fire tenders where necessary.

6.10.7 Cycle Parking Design

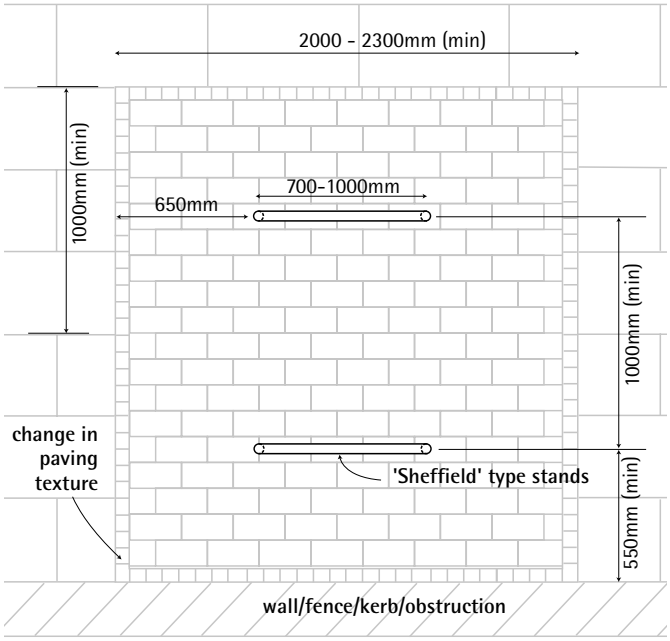
Providing well-located, safe and secure cycle parking is key factor in encouraging people to cycle as an alternative to using the private car.

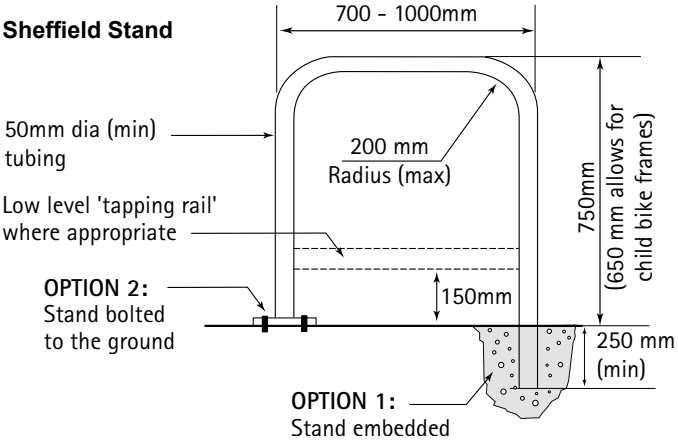
Businesses should provide a mix of short and long-stay depending on the nature of a business. All cycle parking must:

- Be secure and covered.
- Be conveniently located adjacent to entrances to buildings.
- Be easily accessible from roads and/or cycle routes.
- Be located so it does not obstruct pedestrian and cycle routes.

Sheffield stands should be provided, placed 1 metre apart and 0.5 metre from the wall, allowing the accommodation of two cycles. Cycle parking stands must be designed to ensure that both the front and back wheels of a bicycle can be locked to the stand. Stands that grip only one wheel do not provide adequate support or security. To ensure this is possible cycle stands must be 700mm long from bar to bar. Stands should be either bolted to or embedded in the ground.

Cycle Parking Stand 'Footprint'





(Source: Sustrans 2004, Information Sheet FF37 – Cycle Parking)

Long-stay cycle parking

Short-stay cycle parking

6.11 Energy & Sustainability

6.11.1 Introduction

The design and construction of the new Horizon 120 site is intended to reflect Braintree District Council's vision for a new facility that should aspire to a high standard of sustainable design and operation.

To meet this criteria the following key requirements have been identified:

- The environmental performance of the new building, particularly with regard to CO2 emissions, will aspire to exceed the national standards set by the current Building Regulations. The building will achieve a carbon emission reduction improvement over and above the Building Regulations Approved Document L2A requirements.
- A minimum of 30% of the projected energy requirements of a plot, including the building, must be provided through renewable energy technology, as required by Condition P12 in the Horizon 120 LDO. Details of options for achieving this are set out below but other renewable energy options can be utilised. Details of how a minimum of 30% of the energy will be provided through renewable energy technology must be submitted as part of the Compliance Checklist.

6.11.2 Key Aspects

The key aspects of the proposed environmental strategy for the buildings is summarised by the following points:

- Optimise the passive design of the building to enable generous daylight (without glare and overheating), natural or high performance energy efficient ventilation and a high efficiency thermal fabric. The thermal fabric parameters adopted should be substantially better than the limiting u-values set out in the current Building Regulations as outlined below;
- 100% low energy lighting throughout the development and this should incorporate LED lighting with intelligent daylight and occupancy regulated control where appropriate to internal spaces;
- Inclusion of large arrays of roof mounted Photovoltaic panels to all suitable roofs in order to contribute to the buildings CO2 emissions reductions and to also generate clean onsite renewable power to not only meet the Part L2A requirements but to also provide energy feedback to local infrastructure and support high power systems such as vehicle battery facilities.
- A Building Management Control systems shall be employed to ensure optimal and efficient operation of plant and the monitoring of energy consumption and the introduction of systems to maintain occupant comfort. These approaches should include:
    - Limiting overheating with solar control glass.
    - Minimise water usage with appropriate selection of sanitary ware and water flow restrictor devices to BREEAM standards.
    - Highly efficient building services;
    - Selection of sustainable materials;
    - Heat and energy monitoring by BMS or similar
    - Natural ventilation or mechanical ventilation monitoring.

6.11.3 Co2 Emissions

The CO2 emissions reduction target should be achieved based on a staged approach as follows:

Stage 1 Passive Design Measures and Features - 'Be Lean'

The new building design philosophy will be to adopt a 'Fabric First' approach and as such will benefit from - low U-values, high standards of air tightness, beneficial use of daylighting and high levels of insulation to initially reduce the energy demands and associated CO2 emissions of the building.

Current building regulations Part L2A 2013 limiting fabric parameters are as follows:

- External walls 0.35W/m2 k
- Ground floor 0.25W/m2 k
- Roof 0.25W/m2 k
- Glazing 2.2 W/m2 k + 'g' value 0.40
- Air Permeability 10m3/m2 hr

In order to provide buildings with the relevant improvements over the above we would expect the following minimum fabric parameters to be considered for 'Be Lean' construction and offer a minimum 20% saving in U-Value:

- External walls 0.28W/m2 k
- Ground floor 0.2W/m2 k
- Roof 0.2W/m2 k
- Glazing 1.76 W/m2 k + 'g' value 0.40
- Air Permeability 5m3/m2 hr

Stage 2 Passive and Active Energy Efficient Building Services - 'Be Clean'

In addition to passive measures, the building should include highly energy efficient building engineering services. These measures to include the following: high efficiency lighting design with associated controls, fan with low specific power motors, variable temperature and volume control of the heating systems employed.

Where possible consideration should be given to providing natural ventilation where this will be meet minimum building regulations and CIBSE requirements for fresh air and overheating. Where natural ventilation is not feasible a heat recovery based mechanical system should be installed and this can be integrated into an refrigerant based system to provide cooling if required.

Stage 3 LZC/Renewable Energy Provision - 'Be Green'

Over and above passive and active measures to achieve further overall reduction in CO2 emissions. Air source heat pumps and photovoltaic panelling should be provided as the primary energy saving equipment. A heat pump based system will provide a highly efficient method of supplying both heat and hot water to each building.

In addition studies should carried out into the viability of using ground source heat pump systems in lieu of air source, viability of this will be dependent on building usage and scale.
The photovoltaic array should be configured with battery storage facilities in order to harvest the energy obtained for use later in the day where battery charging system and the like may have a peak demand. The photovoltaic panel arrangements shall be installed south or south west in order to maximize the kWp output from each system.

Each commercial unit shall be provided with 1x passive ECV connection to allow for future connection by the occupier.

Various other efficient energy options may present themselves during the design process and all would investigated as part of considered energy strategies prospered by the design team.

CO2 reduction emission targets staged approach

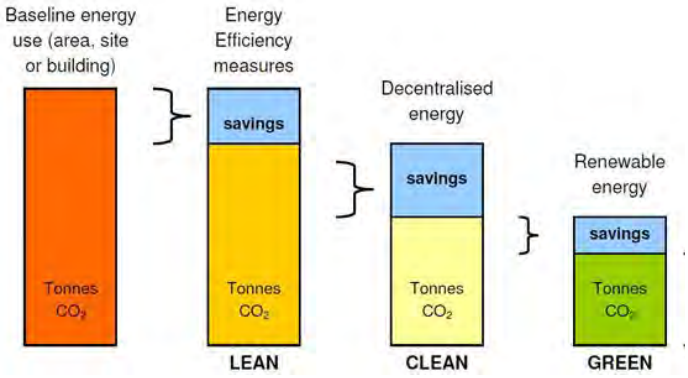


Table 11: Efficient energy options types available

Solar	▪ Solar Thermal ▪ Solar Photovoltaics
Wind	▪ Wind Turbines
Biomass	▪ Biomass single room heaters / stoves ▪ Biomass boilers. ▪ Biomass community heating schemes
Combined heat & power (CHP)	▪ Natural gas ▪ Sewerage gas and other biogases
Heat Pumps	▪ Ground source heat pumps ▪ Water source heat pumps ▪ Air source heat pumps ▪ Geothermal heating systems
Water	▪ Small scale hydro power. ▪ Tidal power ▪ Wave power
Fuel Cells	Fuel cells using hydrogen generated from any of the above "renewable" sources

6.11.4 Daylight Modelling and Avoidance of Overheating

Thermal modelling will be carried out for each property based on which daylight and overheating studies will be provided to assess the effects of building fabric on the internal space in order to maximise daylight whilst minimise overheating.
Daylight to areas such as offices, meeting rooms and the like will be optimised whilst meeting the overheating criteria set out in current building regulations Part L2A and CIBSE TM57.
The use of blinds to windows, solar control glazing should be incorporated where required to reduce the effects of thermal gain through glazed areas. Where this is insufficient forms of external shading would be investigated, this may be provided in the form of brise soleil or similar.

6.11.5 Design Concept Criteria for Building Services

The design criteria for the building services will be established on a building per building basis due to the potential variety of building uses

A considered approach should be employed to enable the future building energy model to be constructed to prove that the design principles work and meet the Building Regulations Part L2A requirements with regards to energy performance.

Although it is recognised that a number of differing building uses will provided, it is also important that base design criteria is used throughout, in order to provide a considered design approach, these would generally be as follows:

External Design Criteria
The following external design temperatures should be used:

- Summer 28°C db 20°C wb
- Winter - 4°C db Saturated

Internal Design Criteria Casual Heat Gains
Occupancy density and casual heat gains assumed should be in accordance with CIBSE Guide A Environmental Design for buildings.

6.11.6 Infiltration

The assumed infiltration rate is 0.5ac/h which is a recognised allowance and correlates to the allowable infiltration rates set out in Part L2A for a building of this shape and location, in all but extreme cold and windy conditions. This means that the ability of the heating system to meet the peak loads relies strongly on whether the Part L2A requirements for air tightness are achieved.

Internal Environmental Conditions Temperature
The following temperatures should be achieved within the buildings during the heating season:

Room Type	Min Winter Temperature
Offices /Staff Rooms	21°C
Meeting Rooms	21°C
Toilets	19°C
General Circulation	19°C
Stores	15°C
Plant room	15°C
Hotel Bedrooms	21°C
Restaurant	21°C
Staircases	19°C

6.11.7 Internal Lighting

The illuminance levels in the below table are in accordance with the CIBSE Code for Lighting 2009.

The use of daylight within each space should be used to create a well- lit and stimulating environments, as well as providing the opportunity for daylight dimming control and reduction in energy consumption.

Table 12: The illuminance levels in accordance with the CIBSE Code for Lighting 2009

Room Type	Illuminance (lux)	Switching	Daylight Dimming
Office Accommodation	500	Auto on/absence detection off	Yes
Reception	200	Manual on/ absence detection off	Yes
General Circulation	100	Timed on/off with absence detection	No
Staircase	200	Timed on/off with absence detection	No
Store/Cleaners Cupboards	100	Manual on/off	No
WC's	150	Auto on/absence detection off	No

6.11.8 Design Standards

The buildings and their services will comply with, but not limited to, all relevant and applicable regulations, codes of practice and guidelines as outlined below:

Generally

- British Standards or European Equivalents
- The Building Regulations
- Acts of Parliament
- Local Authority Regulations and By-Laws
- The specific requirements of Service Providers

Particularly

- Non-Domestic Building Services Compliance Guide 2010
- BS: 7671 Requirements for Electrical Installations, including all amendments
- Guidance notes to BS: 7671, together with all published supplements
- British Standard Codes of Practice for Building Services Systems
- Institute of Plumbing, Plumbing Services Design Guide
- The Factories, Shops and Offices Act 1990
- The Environmental Protection Act
- The Electricity At Work Regulations 1989
- The Electricity Supply Regulations 1988
- The Gas Safety Regulations 1990
- The Health and Safety at Work Act
- The Construction (Design and Management) Regulations 2015
- Control of Substance Hazardous to Health Regulations 1992
- The Workplace (Health, Safety and Welfare) Regulations 1992
- The EMC Directive 89/336/EEC
- CENELEC Low Voltage Harmonisation HD 472 S1
- ANSI EIA/TIA 568b Data cabling requirements
- British Telecom and Mercury Communications Installation Guides
- REC requirements (including guidance notes for PME installations)
- Water Regulations 1999
- CIBSE TM52 Limits of Thermal Comfort
- CIBSE Guide A - Environmental Design
- CIBSE Guide B - Heating, Ventilation, Air Conditioning and Refrigeration
- CIBSE Guide F – Energy Efficiency in Buildings
- CIBSE Guide G – Public Health and Plumbing Engineering

6.12 Travel Considerations

6.12.1 Introduction

This chapter sets out the travel consideration for the new development both within the masterplan and the wider community.

Within new developments pedestrian and cycle movements should be coherent, direct, safe, comfortable and attractive. The internal walk and cycle networks should connect well with the existing network outside of the development and be supported by high-quality signage with distances and times indicated.

6.12.2 Footways

Footways should be a minimum of 2 metres wide, it may be appropriate to widen footways in response to high footfalls, to create a sense of space, encourage pedestrian activities or key desire lines.

Footpaths should be designed to provide direct access for pedestrians to each buildings entrance and towards bus stops and Great Notley/Braintree centres.

At present a toucan crossing is provided at the A131 and Cuckoo Way roundabout, a shared footway/cycle link should be provided from the site to this crossing point. This will allow a safe and direct route towards Great Notley and Braintree railway station. This will promote more sustainable modes of travel to and from the site.

The above link would also allow access to amenities in the vicinity of the site, including a Tesco supermarket, doctor's surgery, nursery, and primary school.

6.12.3 Pedestrian and Cycle Routes

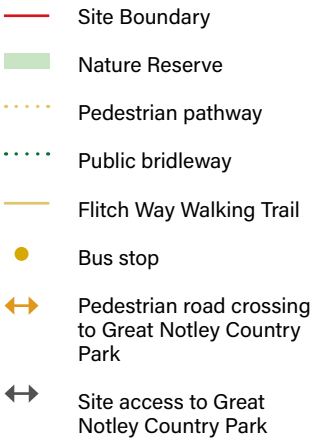
Shared pedestrian and cycle links should be a minimum of 3 metres wide if the route is shared or 3.5 metres wide if pedestrians and cyclists are separated. Where a link is bounded by a building, wall or fence, it should be widened on that side by 0.5 metres.

Appropriate visibility should be provided along cycle routes and at junctions and access points. Where a cycle crosses a street, a formal or informal crossing should be provided as appropriate.

6.12.4 Bus Stops and Bus Routes

Providing good bus services, particularly in urban areas, is fundamental to achieving more sustainable patterns of movement that reduce people's reliance on the car. The need for bus services to route through the site and the provision of a bus stop within the site, will be discussed with Essex County Council as part of formal discussions.

To future proof the site in the event that a bus route is deemed as necessary, internal carriageways should not be less than 6.75 metres wide. It should be noted a full-size bus requires a turning circle of 26 metres in diameter.



Plan 11: Context & Connections

HORIZON

BUSINESS & INNOVATION PARK

Braintree District Council