THE LONDON RESORT

The London Resort Development Consent Order

BC080001

Environmental Statement
Volume 2: Appendices

Appendix 11.7 Landscape Strategy

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Revision: 00

December 2020

Planning Act 2008
The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009
Regulation 5(2)(a)
The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017
Regulation 12(1)

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THE LONDON RESORT

Landscape Strategy

DECEMBER 2020

edp

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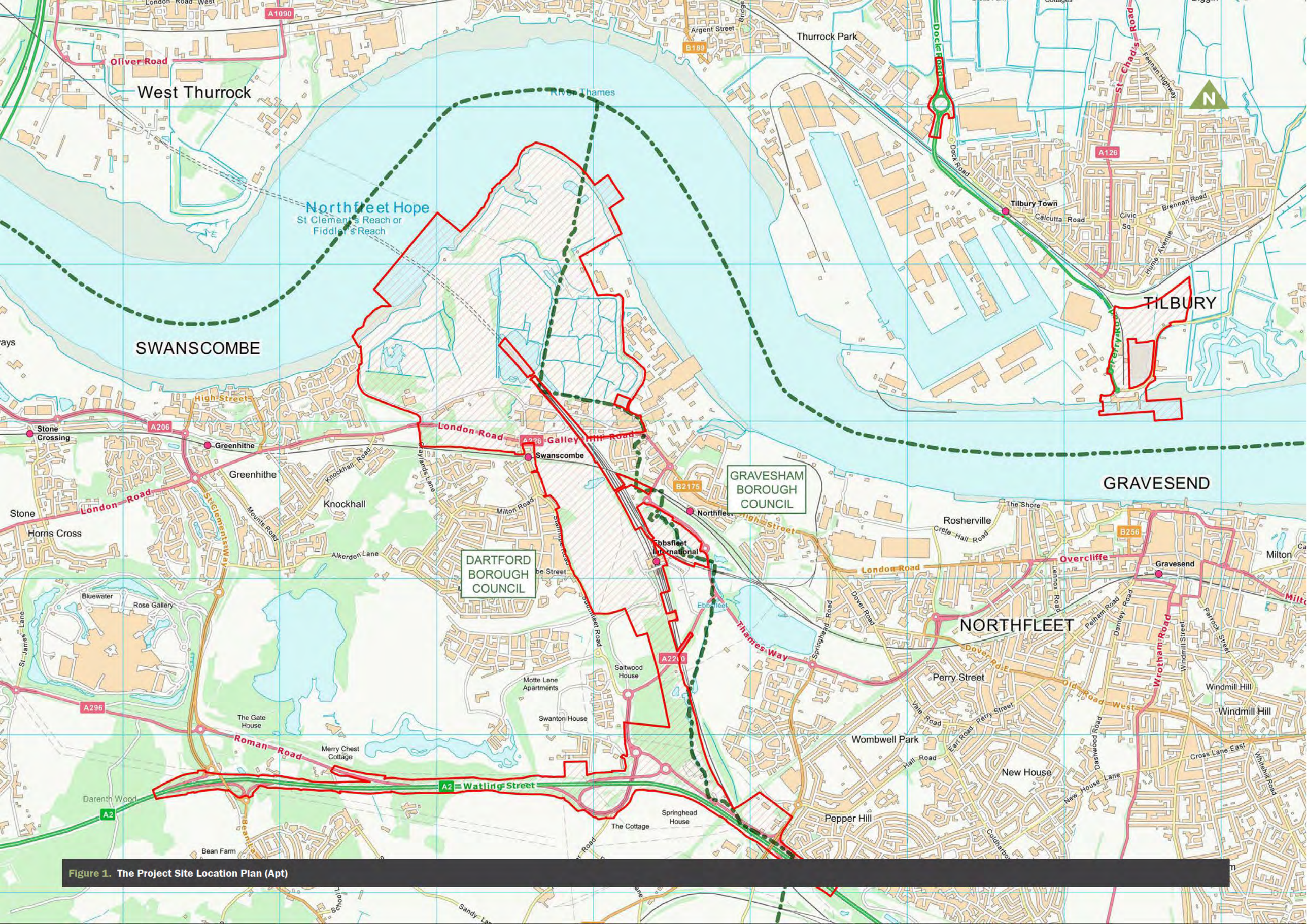


Figure 1. **The Project Site Location Plan (Apt)**

1. INTRODUCTION

1.1 Document Purpose and Structure

1.1.1 This Landscape Strategy has been prepared to set out the landscape vision and green infrastructure strategies for the London Resort.

1.1.2

SECTION 1: INTRODUCTION

1.2.8 This section sets out a brief description of the resort and its background. It summarises the purpose of the green infrastructure strategy in relation to the DCO submission.

SECTION 2: SITE EVALUATION

1.2.9 This section presents the Project Site as it exists currently, setting out the relevant planning context, describing the site's topographic characteristics and mapping the existing elements of it's green and blue infrastructure. It goes on to examine site character and evaluate the constraints and opportunities that will inform the design proposals.

SECTION 3: LANDSCAPE VISION

1.2.10 This section sets out a compelling vision for the London Resort landscape. It establishes the green infrastructure objectives and presents a design narrative that is highly responsive to the site and its unique conditions and character.

SECTION 4: LANDSCAPE STRATEGY

1.2.11 This section presents the landscape masterplan and green infrastructure strategies that underpin it. It illustrates the landscape concept and design principles for each of the key areas within the masterplan.

1.2 The Project Site

1.2.1 The Project Site lies approximately 30 km east-south-east of central London on the south and north banks of the River Thames, in the ceremonial counties of Kent and Essex. For clarity, the section of the Project Site to the south of the River Thames is referred to as the 'Kent Project Site' and that to the north of the river is identified as the 'Essex Project Site'. The term 'Project Site' refers to both the Kent and Essex Project Sites collectively. The 'Order Limits' within which the proposed DCO would apply are shown on the Location Plan (document reference 2.1).

1.2.2 The Kent Project Site occupies much of the Swanscombe Peninsula, formed by a meander in the River Thames, and includes a corridor for transport connections extending generally southwards to the A2(T). It also includes a section of the A2(T) corridor approximately 3.5 km in length between the existing Bean junction to the west (A2(T) / B255) and Pepper Hill (A2(T) / B262) to the east. The Kent Project Site occupies 387.53ha of land in a complex shape.

1.2.3 The Kent Project Site includes land falling within the jurisdiction of Dartford Borough Council (DBC) to the west and Gravesham Borough Council (GBC) to the east. The majority of the Kent Project Site also falls within the Ebbsfleet Garden City, established in April 2015, for which Ebbsfleet Development Corporation (EDC) is the Local Planning Authority.

1.2.4 The High Speed 1 (HS1) line crosses the Kent Project Site along an approximate north-west to south-east axis. The urban areas of Stone, Greenhithe, Ingress Park and Swanscombe lie to the west and south. These are largely residential in character, with commercial uses concentrated on Stone's river frontage. Beyond Greenhithe to the south-west of the Kent Project Site lies Bluewater shopping centre, a significant regional retail destination. To the east of the Kent Project Site lies Northfleet, a neighbourhood of mixed residential and commercial uses.

1.2.5 Across the southern and south-eastern parts of the Swanscombe Peninsula is an extensive industrial area concentrated around Manor Way, Galley Hill and London Road. To the south of the A2(T) the land is more open and rural in character, with small settlements amid farmland and woodland blocks. Most of this area lies in the Metropolitan Green Belt.

1.2.6 The Essex Project Site includes areas of land east of the A1089 Ferry Road and the Tilbury Ferry Terminal, incorporating the London International Cruise Terminal and non-contiguous the Asda roundabout at the junction of the A1089 St Andrews Road / Dock Road, Windrush Road and Thurrock Park Way. The Essex Project Site is 25.54 hectares in area.

1.2.7 The Essex Project Site falls within the jurisdiction of Thurrock Council, a unitary authority. The Essex Project Site lies immediately to the east of the existing port of Tilbury and to the west of Tilbury2, a new port currently under construction. At the south-east corner of the Port lies the Tilbury Ferry Terminal incorporating the London International Cruise Terminal (a grade II* listed building featuring a floating landing stage and series of bridge structures). The Asda roundabout is located to the north of the port of Tilbury and incorporates highway land.

1.3 Project Description

1.3.1 The Resort will be a nationally significant visitor attraction and leisure resort, built largely on brownfield land at Swanscombe Peninsula in Kent on the south bank of the River Thames and with supporting transport and visitor reception facilities on the northern side of the river in Essex.

1.3.2 A detailed description of the Proposed Development is provided in chapter three of the Project Environmental Statement (document reference: 6.0). The focus of the Resort will be a 'Leisure Core' containing a range of events spaces, themed rides and attractions, entertainment venues, theatres and cinemas, developed in landscaped settings in two phases known as Gate One and Gate Two ('the Gates'). Outside the Gates will be a range of ancillary retail, dining and entertainment facilities in an area known as the Market.

1.3.3 The Resort will also include hotels, a water park connected to one of the hotels, a conference and convention centre known as a 'conferention centre', a Coliseum (capable of hosting e-Sports events), creative spaces, a transport interchange including car parking, 'back of house' service buildings, an energy centre, a wastewater treatment works and utilities required to operate the Resort. Related housing is also proposed to accommodate some of the Resort's employees.

1.3.4 Substantial improvements are proposed to transport infrastructure. This will include a new direct road connection from the A2(T) and a dedicated transport link between Ebbsfleet International Station, the Resort and a passenger ferry terminal beyond. The ferry terminal would serve visitors arriving by ferry on the River Thames from central London and Tilbury. A coach station is also proposed. On the northern side of the Thames to the east of the Port of Tilbury, additional coach and car parking and a passenger ferry terminal are proposed to serve the Resort.

1.3.5 The Proposed Development would involve an extensive restoration of land used in the past for mineral extraction, waste disposal and industrial activities including cement and paper production, with a comprehensive landscape strategy proposed incorporating the retention and enhancement of wildlife habitats.

Figure 2. **Illustrative Graphic (Apt)**

Figure 3. **Illustrative Masterplan (cropped to peninsula area - source: Apt)**

2. SITE EVALUATION

2.1 Ebbsfleet Garden City Context

2.1.1 This section covers the key design policy related to the surrounding context to the development, Ebbsfleet Garden City. Further planning policy context in relation to landscape matters is contained in Environmental Statement: Landscape and visual effects of the Environmental Statement (document reference 6.1, Chapter 11).

Ebbsfleet Garden City

2.1.2 The London Resort falls within the wider masterplan area of Ebbsfleet Garden City. Ebbsfleet Development Corporation (EDC) was established by government in 2015 to assist in the delivery of 15,000 homes and community infrastructure as part of the garden city vision.

The Ebbsfleet Implementation Framework

2.1.3 The Ebbsfleet Implementation Framework (2017) (EIF) provides a structure to integrate the existing masterplans for the areas into a coherent vision which is positioned as a statement of ambition rather than a statutory plan – the formal plan-making responsibility resting with Dartford Borough and Gravesham Borough Councils.

The Garden Grid

2.1.4 The Concept of a 'Garden Grid' is a key principle of the EIF, intended to bring the city's parks and neighbourhoods together and build a strong ecological network. This is very relevant to the London Resort Green Infrastructure proposals which will be based on the robust north-south connectivity but will also seek to maintain a network of linking habitats between east and west.

2.1.5 The EIF identifies the marsh landscape surrounding the resort as Swanscombe Peninsula Park which should retain its open and expansive character. Guidelines are provided on its design, which should have a natural and ecological focus with key functions including: habitat protection, education, walking/jogging, bird watching, long distance river viewing, water/flood management and sustainable urban drainage systems.

Ebbsfleet Public Realm Strategy

2.1.6 A public realm strategy was developed in 2019 for the Ebbsfleet Garden City area that provides guidance on general approach to public realm and open space, and detailed hard and soft landscaping guidelines. These guidelines have been considered and made reference to in the hard and soft landscape approach for the marsh and parkland areas at the end of this document.

Figure 4. **Vision for Ebbsfleet Central [Source: Ebbsfleet Implementation Framework (2017)]**

Figure 5. Garden Grid Concept [Source: Ebbsfleet Implementation Framework (2017)]

2.2 Historic and Cultural Associations of the Landscape

A Marsh Landscape

2.2.1 Until the early 20th century marshes were found extensively throughout the Thames Estuary and extended up-river towards London. A rare habitat now, salt marshes were common across a far wider area than the remnants left today, and acted as a natural flood plain for the brackish waters.

2.2.2 The vivid character described in Charles Dickens' Great Expectations conjures up an atmospheric and memorable impression that is important in understanding the unique sense of place:

2.2.3 *'... The dark flat wilderness beyond the churchyard, intersected with dykes and mounds and gates, with scattered cattle feeding on it, was the marshes; and that the low leaden line beyond was the river; and that the distant savage lair from which the wind was rushing, was the sea...'* **Quote from Charles Dickens' Great Expectations**

2.2.4 Historically there were few defined routes across these marshes, with the exception of the 'Manorways'. The Pilgrim's Way public footpath across the Swanscombe Peninsula was one of these paths, used from medieval times as a pilgrim's route from the Thames ferry crossing to Swanscombe Church and the shrine of St Hildefirth. The ferry ceased operation in the mid-19th century but the footpath remains.

2.2.5 The Essex Project site is similar to Swanscombe Peninsular in that it was historically a large area of marshland. A similar connection existed between Tilbury ferry and the village of West Tilbury although this has largely been lost as a route due to the urban expansion of Tilbury and diversion of the footpath to Tilbury Fort.

Industrialisation

2.2.6 Throughout the 19th and 20th centuries, many of the marshes were drained, built on and reclaimed from the river. Industrial activity has transformed the topography of the Swanscombe Peninsula, with quarrying, landfill, and construction of flood defences re-modelling the terrain into an artificially mounded landscape with an altered character.

2.2.7 Similarly, industrialisation has transformed the landscape to the south of the peninsula, the majority of the corridor towards the A2 and around Swanscombe being excavated for gravel and lime in the 19th and 20th centuries. Famously, these excavations uncovered rich archaeological finds in the area including three separate pieces of the same 300,000 year old skull known as 'Swanscombe Man', which are some of the oldest remains found in Europe, as well as numerous prehistoric flint tools and animal bones. Whilst most of these excavations have now been filled and restored, some of the pits remain and have started to naturally recolonise with succession planting

Re-wilding

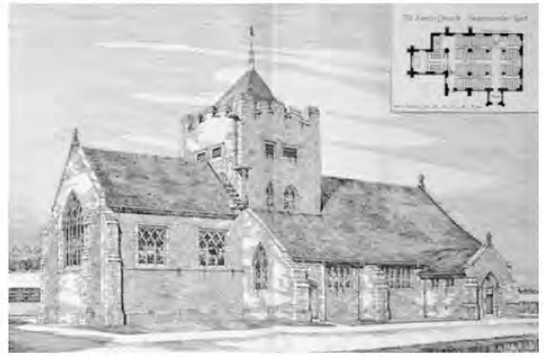
2.2.8 Since the dereliction of much of the early industrial uses on the Project Site, many parts of the brownfield post-industrial landscape have been re-colonised by nature, albeit a different ecosystem from the original.

2.2.9 Whilst Black Duck Marsh appears to be an original remnant of the marsh landscape, it is in fact a case of nature reclaiming what was previously a sports field for workers of the former cement works.

2.2.10 Similarly, the new scrub habitats that have populated the landfill at Broadness Marsh support a range of flora and fauna that would previously not have been present in an inundated marsh.

The 1807 Mudge Map reveals the extensive pattern of marshes across the Thames Estuary area. This landscape forms one of the key remnants of the natural environment of this area and the strong historic associations of marshland that was once much more common (source: Ebbsfleet Garden City)

A still image taken from David Lean's film version of Great Expectations from 1946 - the powerful atmospheric associations of the marsh landscape that remains in the popular imagination (source: Ebbsfleet Garden City)



All Saints Church is a local landmark on the junction of Galley Hill and London Road. It designed by Richard Norman Shaw in 1894. Built from knapped flint, typical of the area, it was intended for the workers of the cement industry. It is now residential accommodation. (source: architecture.com)

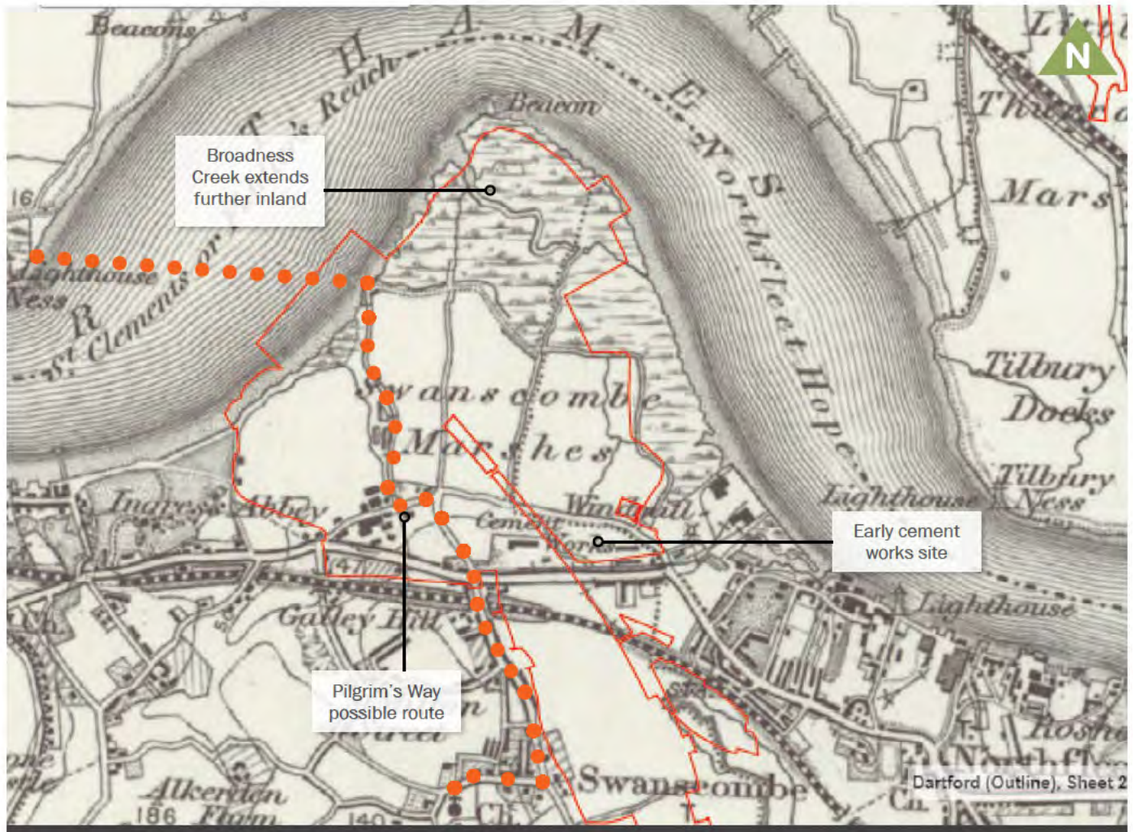


Figure 6. **Historic OS Map from 1880s**

- The current ditch pattern is evident, marking out the areas of Botany Marsh and the interface with Broadness Marsh.
- Broadness Creek extends further inland and the marshes wrap around to the east of the peninsula - the site of Brittania Metals and the Cemex plant.
- The east/west rail line towards London is already well established.
- Cement works are present in the area north of Galley Hill Road.
- Northfleet area is already becoming industrialised.
- Small hamlet development within the site adjacent to Ingress Abbey.

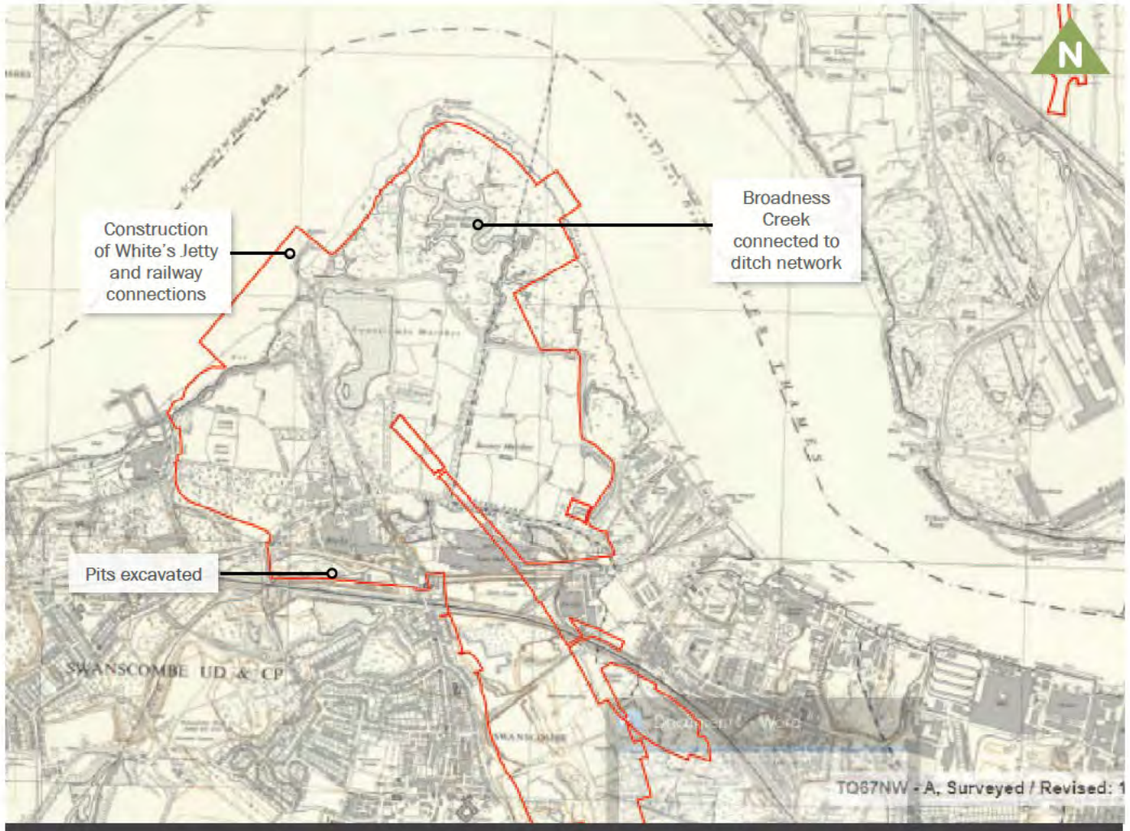


Figure 7. **Historic OS Map from 1940s**

- The extent of industrial activity has increased with the New Northfleet Paper Mills, British Vegetable Parchment Mills and Kent Kraft Paper Sack Mills as well as the Portland Cement Works all being present within the southern part of the peninsula as well as quarrying and a sewerage treatment works more centrally.
- Large pits and drainage ponds have developed on the peninsula and works are taking place in the chalk pits to the south.
- White's Jetty and Bell Wharf are connected to the Portland Cement Works and chalk pits by freight rail and an overhead cable system.
- Broadness Saltmarsh and Botany Marshes appear intact whilst part of Black Duck Marsh is being used as a sports ground and cricket pitch with pavilion.
- The residential areas in Swanscombe are now well-established and the Ingress Estate has developed with the addition of Ingress Abbey Wharf and the Empress Paper Mills on the western edge of the peninsula.

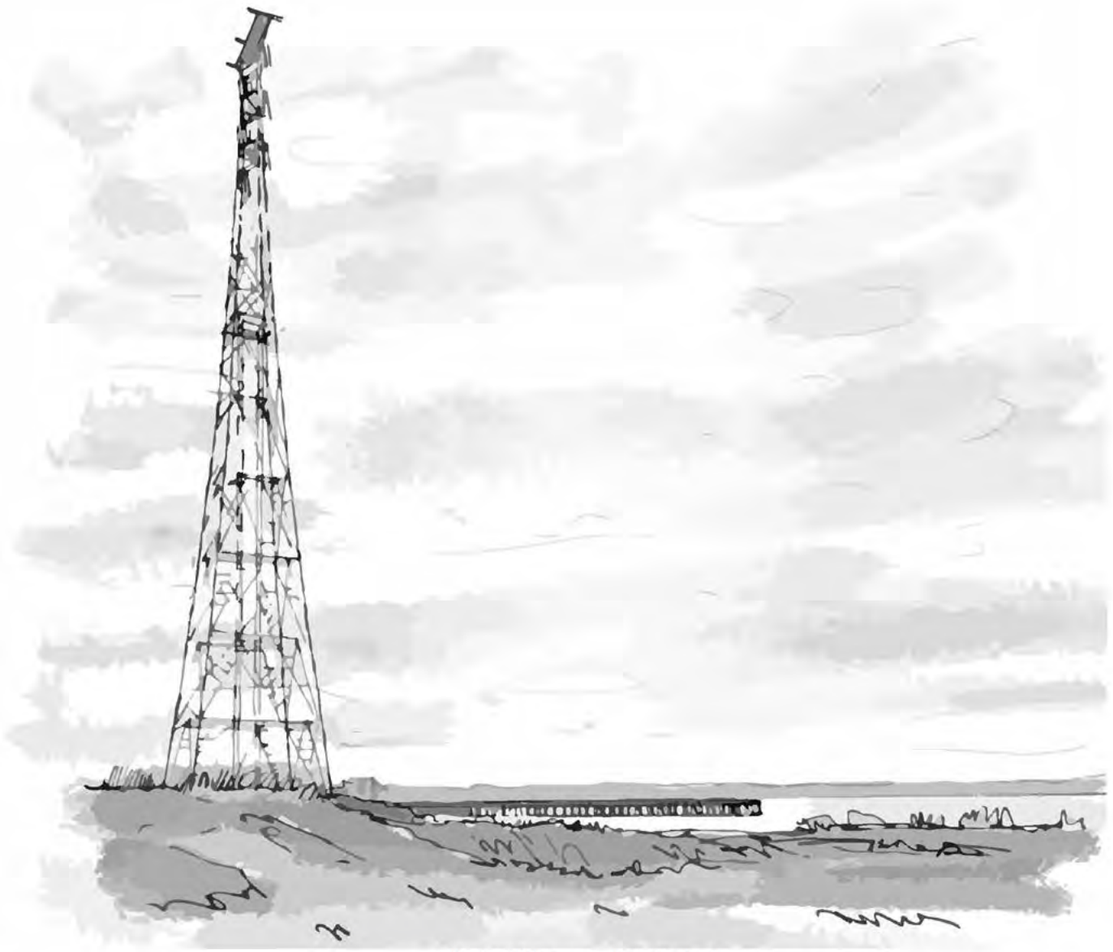
2.3 Landscape Character

2.3.1 The character of the Project Site and the local landscape has been studied through a detailed review of published national and county level landscape character assessments, site visits and desk study exercises. The Project Site and its immediate context have been divided into 32 landscape character areas, illustrated on Figure 8, which help to identify the variations in character across the local area as well as the similarities and connections. These character areas are described in more detail in Environmental Statement: Landscape and Visual Effects (document reference 6.1 Chapter 11).

2.3.2 To gain a better understanding of the existing Project Site character, studies of historic aerial photography have provided windows into the past. Some of these images show the extent of former industrial development and the activities associated with it including the much more active riverscape and the factory smoke.

2.3.3 The open expanse of the marsh is striking in these images, very different from the varied terrain of today, as is the prevalence of sports and cricket pitches, these facilities being present within Black Duck Marsh, the Sports Ground Pit and in Ingress Park. Similarly, the marsh context of the early docks at Tilbury gives an understanding of how the Essex Project Site developed over time.

2.3.4 The following sections provide a detailed description of each of the areas of the Project Site using annotated 3-D drone survey imagery to provide an overview of the existing character, topography and features present.



The Kent Pylon - a marker in the landscape

Historic aerial images below copyright of Historic England

The British Vegetable Parchment Mills and New Northfleet Paper Mills, Swanscombe, 1933

Tilbury Riverside Railway Station and Environs, 1933

Wharf and Jetty at Ingress Park, playing fields in the current location of Black Duck Marsh, 1930

Tilbury Fort and Tilbury Docks, 1930

Order Limits

London Resort Landscape Character Areas

1. Marshland
2. Chalk Pits
3. International
4. Northfleet
5. Northfleet Industrial
6. Northfeet Suburbs
7. Swanscombe
8. Swanscombe Heritage Park
9. Ingress Park
10. Greenhithe Village
11. Knockhall
12. Stone Town
13. Stone Marshes Riverside and Crossways Business Park
14. Gravesend Town Centre and Riverside
15. Gravesend Victorian/Edwardian Suburbs
16. Gravesend Inter/Post War Suburbs
17. Gravesend Modern Suburbs
18. Gravesend Southern Fringe
19. Springhead
20. Wombwell Park
21. Southfleet and Istead Arable Lands
22. Darenth Downs
23. Ebbsfleet
24. Bluewater
25. Long Reach and Fiddler's Reach
26. Northfleet Hope
27. Gravesend Reach
28. Tilbury Marshes
29. Tilbury Urban Area
30 Tilbury Docks
31. Grays/Chadwell St Mary Urban Area
32. West Thurrock

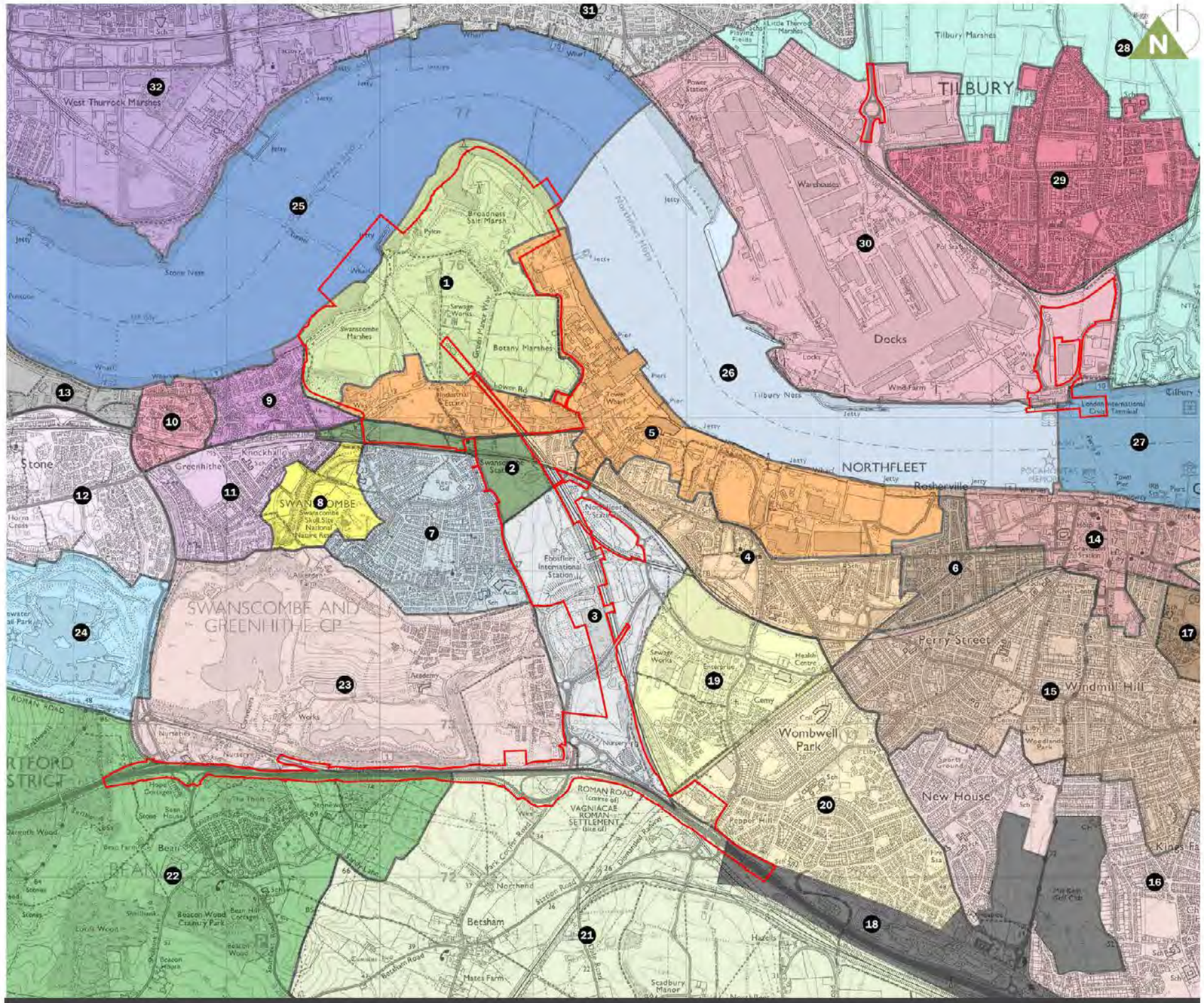
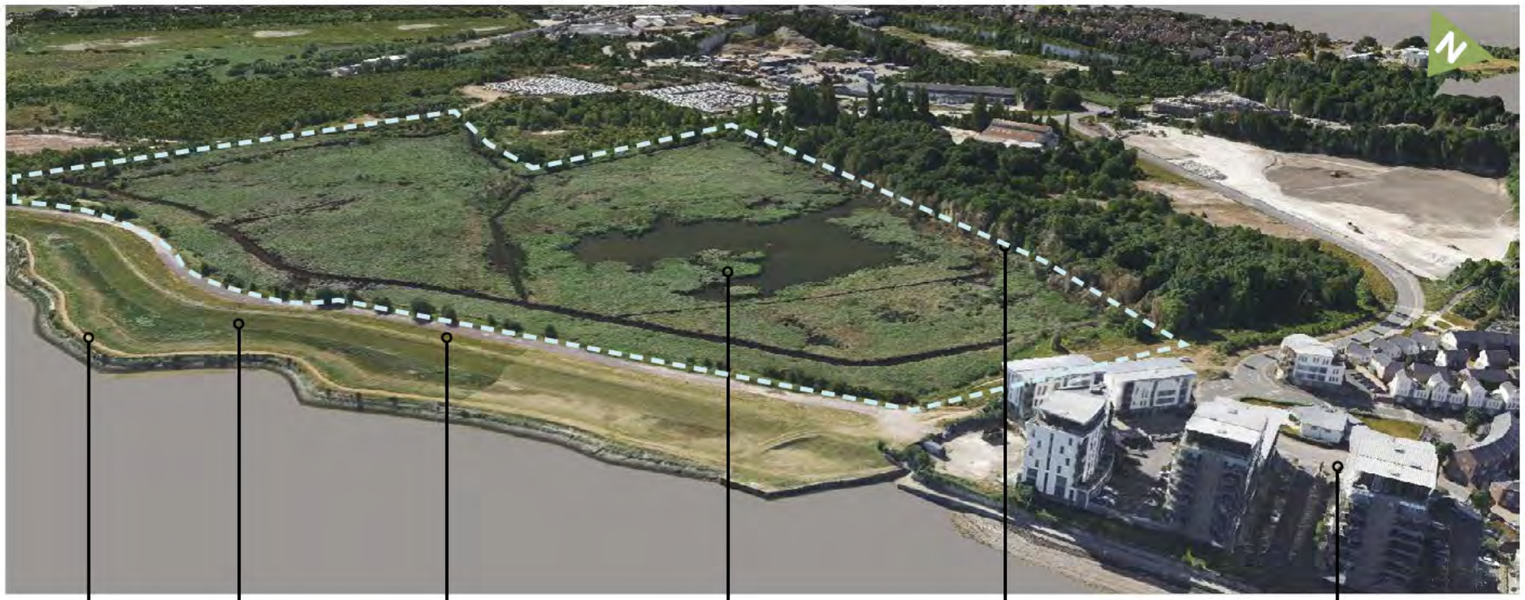


Figure 8. Landscape Character Assessment

2.4 Existing Landscape Character Areas

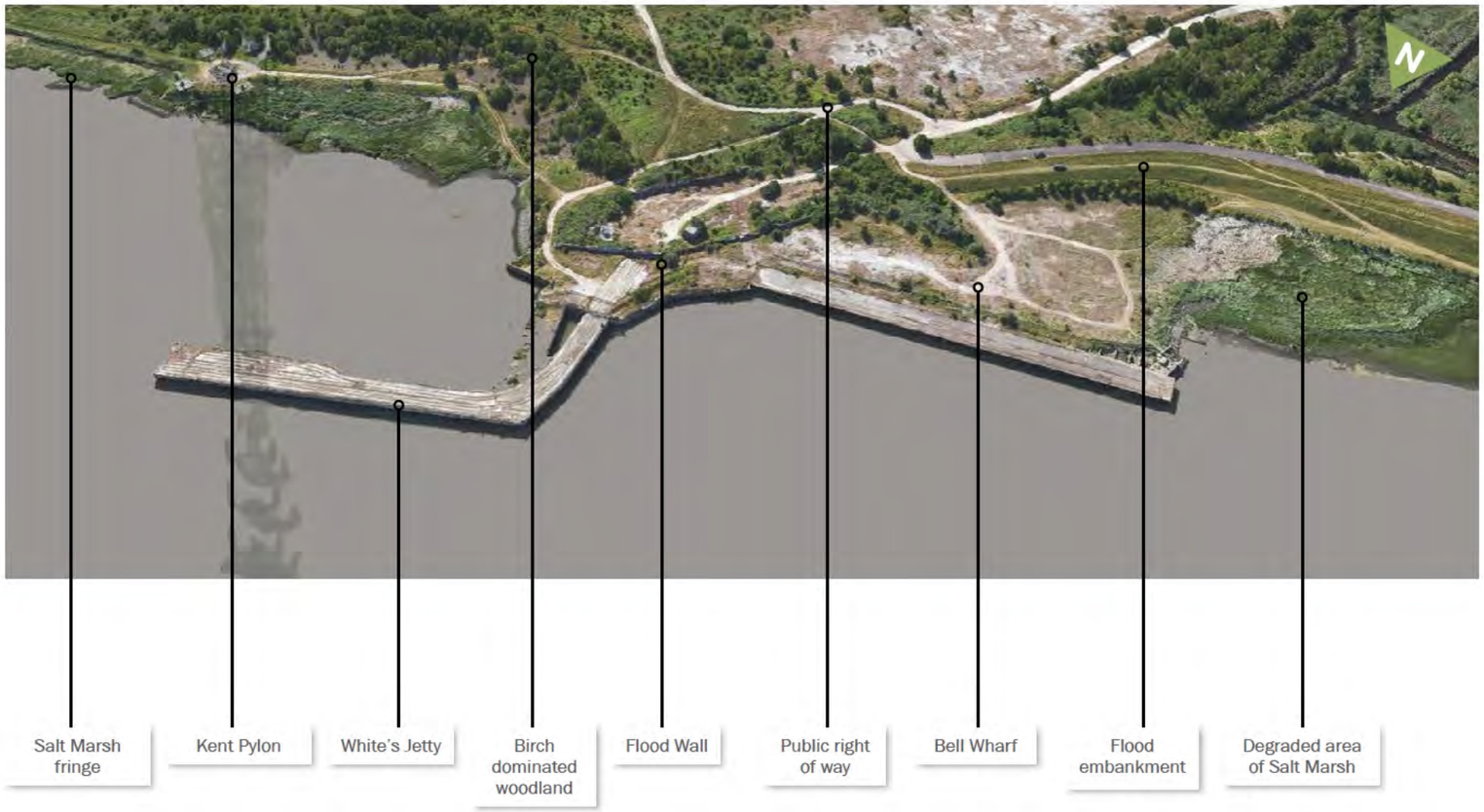
Black Duck Marsh

- Black Duck Marsh was formerly a grazing marsh but it has also been used as a sports ground and cricket pitch. The marsh has subsequently been flooded and remains permanently wet throughout much of the year.
- Marsh habitats at Black Duck have high ecological value, with many bird species supported. It is however degraded in parts, primarily due to leachate contamination, and does not support a high diversity of aquatic species.
- Ditches mark the perimeter of the marsh, located approximately 15m inside with an open area of water in the south-western part and reedbeds covering the remainder.
- The marsh is approximately 600mm in depth and this is found to be uniform across the area.
- Woodland and scrub mark the southern and eastern boundaries.
- To the west is Ingress Park, a residential estate with access via two public rights of way. A number of footpaths follow the northern edge of the marsh, with a public right of way alongside the River Thames, a further route along the top of the flood embankment and a track at the southern edge of the embankment. These public access 'promenades' allow for greater recreational access in this part of the site.



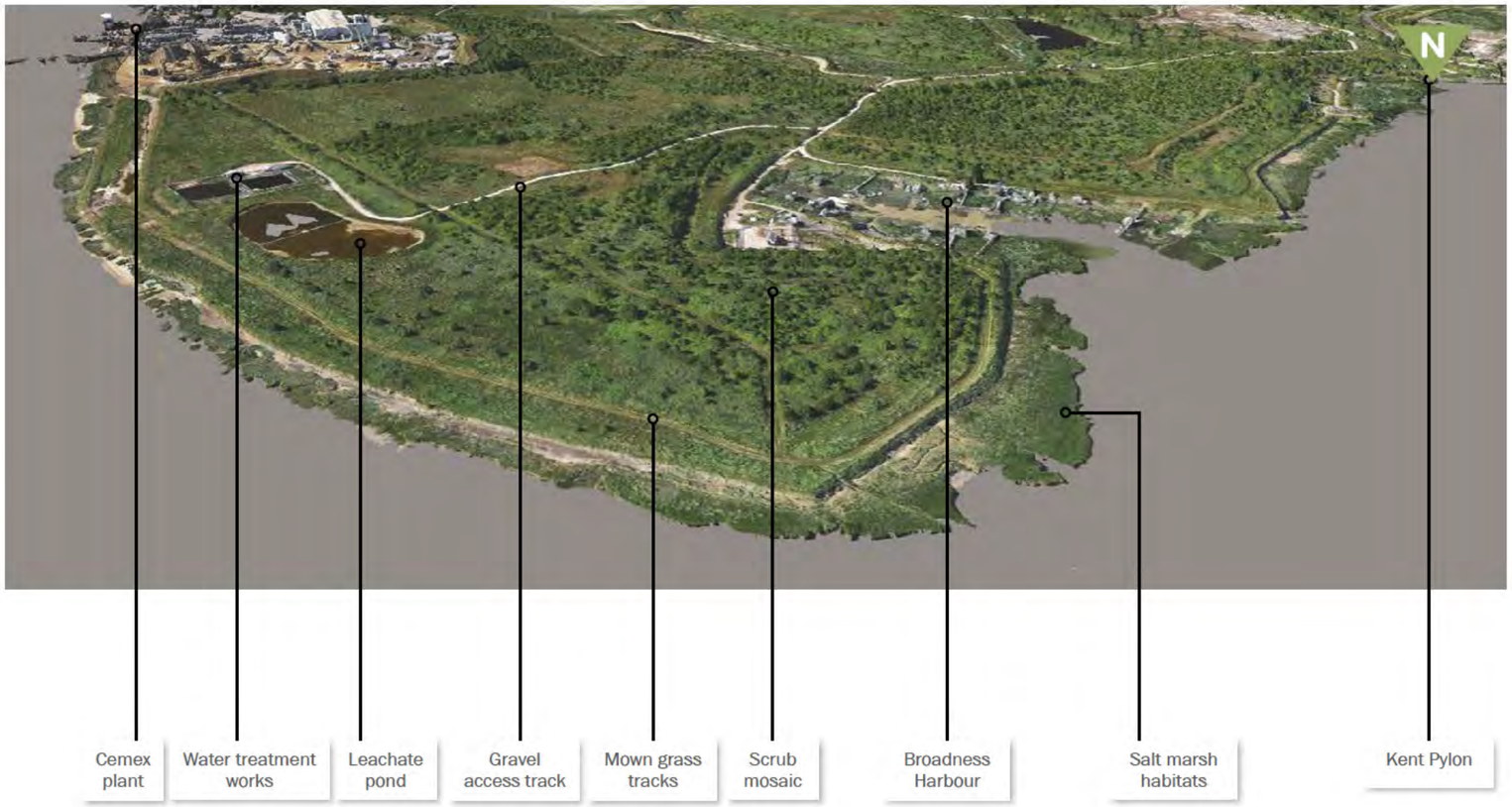
Bell Wharf and White's Jetty

- Bell Wharf was formerly used by the cement works and is now derelict.
- A flood wall surrounds the area.
- White's Jetty was the terminus of the tramway which connected to the pits to the south, which quarried gravel and lime for the cement industry.
- The Kent Pylon is located to the north of the wharf area. One of a pair, built in 1965 to create a 400kV Thames Crossing, the pylons are the tallest in the UK at 190m high and form very distinctive features in the landscape.
- Areas of salt marsh have established on either side of the wharf, with some higher quality habitat to the north, and degraded areas to the south with drift wood and debris having washed up over the inter-tidal zone.



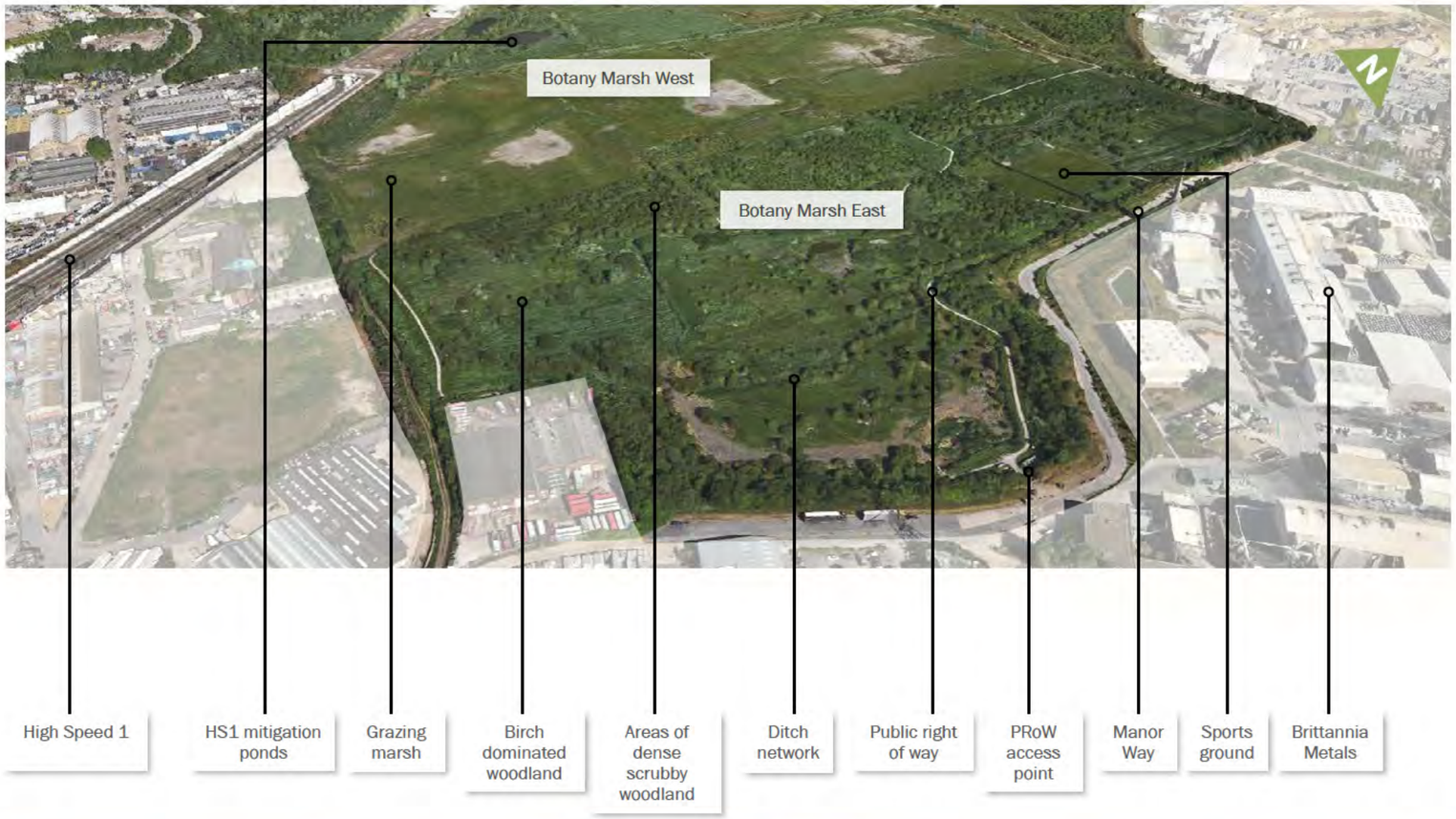
Broadness Marsh

- Broadness Marsh forms the northern triangular shaped tip of the peninsula between the Kent Pylon and the Cemex works.
- It is no longer a marsh as the majority of the area was used as a cement kiln dust (CKD) landfill site formed of three terraces, reaching a height of around 18m.
- A water treatment plant and leachate pond are located on the north-eastern edge and a further leachate pond is situated within the southern area. The leachate ponds collect water leaching through the landfill via a system of ditches and pump it back to the treatment plant.
- The majority of the landscape is a mixture of dense and scattered scrub dominated by hawthorn, blackthorn, sea buckthorn and dogwood. Parts of the habitat mix include bare earth, gravel and grassland that provides a mosaic of conditions for a variety of species.
- The river edge is fringed with salt marsh habitat within the inter-tidal zone and at low tide the mud flats, shingle beaches and areas of rock are exposed.
- Broadness Harbour is located on the western side of the area and is used for permanent mooring by house boats and sailing vessels. This is all that remains of Broadness Creek, the natural inlet that formed part of the original saltmarsh.
- Mown pathways form a network of routes across Broadness Marsh which is currently only accessible to private users. A track provides access to the harbour and water treatment plant.



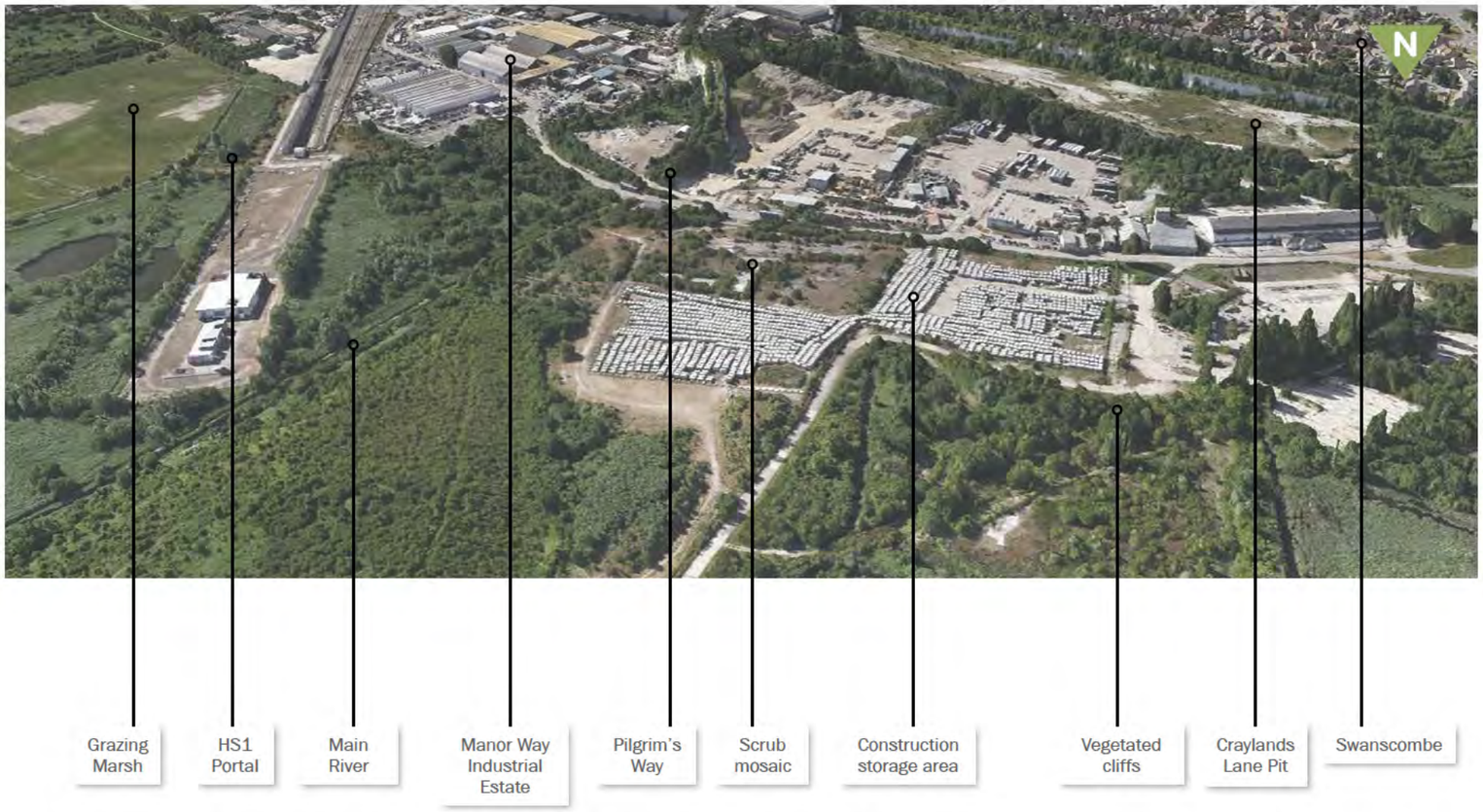
Botany Marsh

- Botany Marsh is now divided into two land ownerships and as a result of different land management regimes has developed into two very separate areas.
- Botany Marsh (east) is a Local Wildlife Site and nature reserve. It comprises areas of scrub, open grassland, ditches, reedbeds and denser woodland edges.
- A public right of way routes around the perimeter of the marsh, connecting to Manor Way, and north to Broadness Marsh. A secondary network of surfaced pathways access the interior of the space, although the majority of the area is inaccessible to the public and blocked from access due to dense vegetation alongside the paths.
- A sports ground is located within the northern part of the marsh, with a mown grass space available to staff in the adjacent industrial area.
- A number of hibernacula have been formed for various species to take refuge in. These are formed of piles of cut material from the grasslands and scrub, as well as more formal stuctures built of sawn logs.
- Many of the ditches are overgrown and whilst the marsh is seasonally inundated in parts.
- Botany Marsh (west) is still in use as a grazing marsh with cattle present throughout the summer. It is drained by a series of drainage ditches and is seasonally inundated in the winter months.



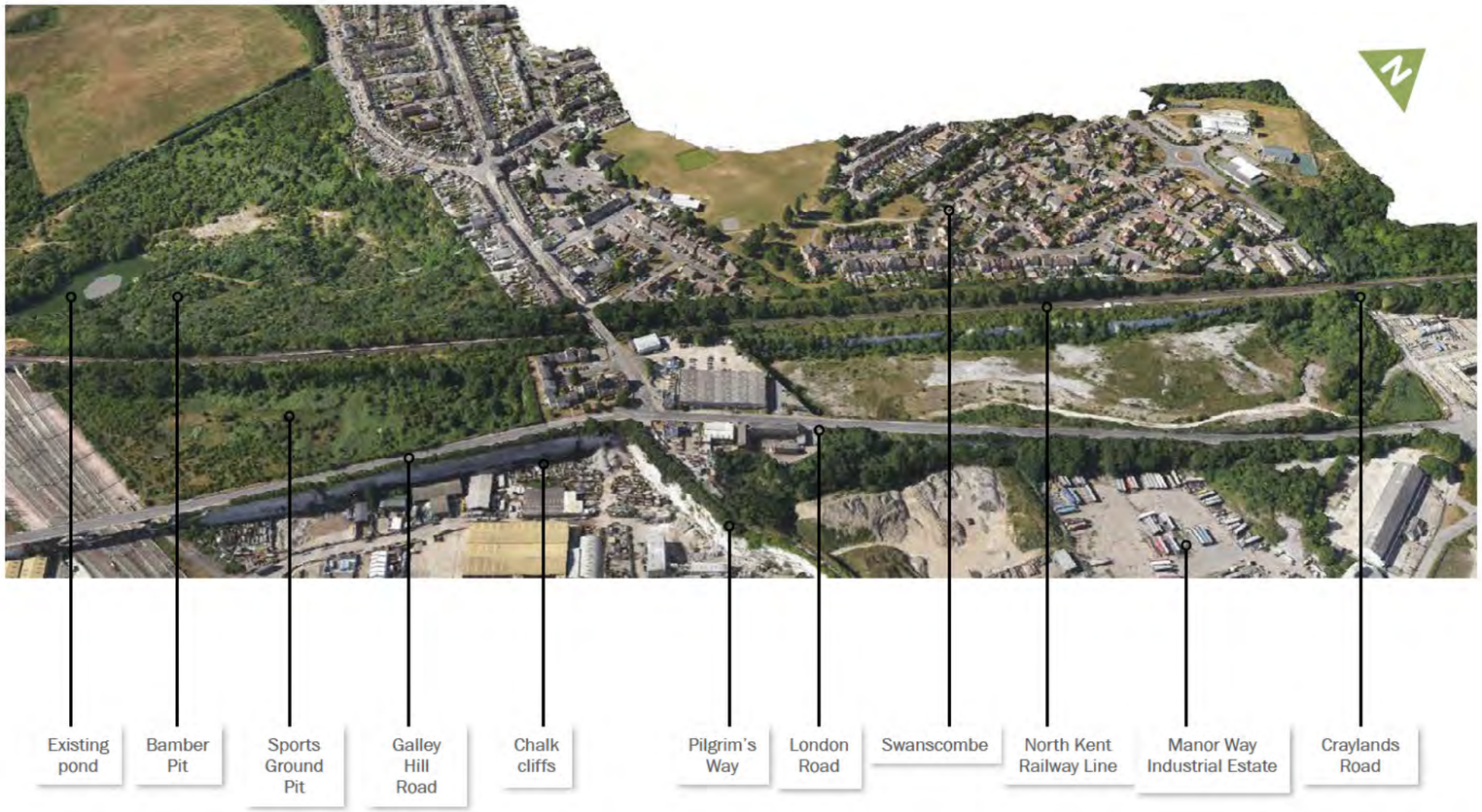
Central Peninsula

- This area is currently largely in industrial use, with the Manor Way industrial estate and business park covering the eastern and central sections of the southern area adjacent to the chalk spine and London Road, which defines the southern boundary.
- In the west, to the south of Black Duck Marsh, derelict industrial units remain as well as areas of hardstanding where demolition is complete and the land is now used for construction storage purposes.
- The High Speed 1 (HS1) portal and rail cutting form a dividing line from north to south through the southern part of this area.
- Beyond the industrial estates, to the north there is a mixture of dense scrub, water bodies, wetland and open brownfield land. The sewage treatment works is a key feature in this area as is the mounded topography, created as a result of landfill operations.
- The 'main river' (as classified by the Environment Agency), also known as The Swanscombe Channel, passes through from south to north, before entering a culvert and being split into two pipes discharged into the Thames near the Kent Pylon. The main river is approximately 5m in width and runs adjacent to the Pilgrim's Way route.
- Pilgrim's Way descends from the higher level at London Road down a chalk ramp in the central area. It is narrow, steep and overgrown and also degraded in character with litter and dead elm lining its route.



Chalk Pits

- The chalk pits were excavated in the late 19th century for gravel and lime for use in the cement industry. Bamber Pit, the 'Sports Ground' Pit and Craylands Lane Pit each have their own distinctive features and form part of the post-industrial landscape that characterises this part of the Kent Project Site.
- The pits largely have a chalk substrate, although some parts have been filled with deposits from construction projects elsewhere.
- The depth of the pits from the base level to the tops of the cliffs varies from 10m to 25m.
- Bamber Pit and the Sports Ground Pit have a very green character having recolonised with trees and scrub, and in the case of Bamber Pit a large pond.
- A small island of development remains at the higher level between The Sports Ground Pit and Craylands Lane Pit, where the junction of Pilgrim's Way, London Road, Galley Hill Road meet. All Saints Church, now a residential property, a pub and some warehousing are located in this space.
- Bamber Pit includes a pond to the south east, inert material to the south and to the north is a permitted landfill, now in the aftercare period with an active landfill gas extraction system in place. Bamber Pit received mixed wastes, predominantly associated with the adjacent paper industries until the mid-1980s.



Ebbsfleet Central Area

- The Ebbsfleet Central Area is bound by the HS1 railway cutting to the east, the pits to the north, Swanscombe to the west, and the A2(T) junctions to the south.
- Ebbsfleet International station is located centrally in this area. The modern glass fronted station and bespoke car parks and access roads create a distinctively different character to the 19th and 20th century development which is prevalent in the wider Swanscombe and Northfleet areas.
- International Way provides access to the station via the A2(T) roundabouts to the south.
- The topography of this area is marked by the landfill activities that have taken place on the western side, which rises to over 25m higher than the station. In time, the landfill area will be transformed into a modern, high density residential and mixed-use centre for Ebbsfleet Garden City.
- Areas of woodland and scrub line the boundaries of this area creating north/south habitat connectivity with Swanscombe Peninsula and the A2 corridor to the south.
- The River Ebbsfleet is a key feature in the south-east of this area, presenting an opportunity for river corridor enhancement.
- To the south of Bamber Pit (and the public footpath) is Northfleet Landfill, a permitted landfill in the aftercare period, operated by Lafarge.

A2(T) Corridor

- Part of the A2 (Watling Street) falls within the Order Limit for the purpose of potential strategic or lower key highways improvements such as signage that may be required to deliver the London Resort.
- The stretch of the A2 extends from the west as far as the Bean Lane/ Clements Way Junction (A296/B255) and the A2260 slip roads at the eastern end.
- Two roundabouts located on the A2260 (Southfleet Way) at the A2 junction currently provide a gateway to Ebbsfleet Garden City from the strategic highways network. The junction has been designed as a feature landscape comprised of linear hedges and trees and incorporating the Ebbsfleet 'E' logo in a polished stainless steel sculpture.
- The junction slip roads are formed further to the south of this. They are generally wooded on the adjacent embankments, with the exception of the southern slip road which is grassed.

A2 woodland verges

Ebbsfleet Garden City residential areas under construction

Existing landscape scheme and Ebbsfleet branding on junction island

Tilbury Ferry Terminal

- Tilbury Docks is located to the north side of the River Thames in Thurrock. It is one of the largest freight shipping docks in the south-east, and London's main port. It has capability to dock deep-sea and shallow hull vessels as well as operating as a cruise liner terminal.
- The Essex Project Site includes the Tilbury ferry and International Cruise Terminal on the eastern jetty that will be upgraded to allow for river connections to the resort. The proposals include the renovation of the Grade II* listed former Tilbury Riverside railway station building, a relic of the former rail connection to the ferry port.
- The dock and ferry terminal is accessed via the A1089 (Dock Road) from the west and Fort Road from the east.
- A large warehouse with freight handling is located to the north of the dock. North of that is a large surface car park used for storing imported vehicles. This area will be adapted to include car parking for resort visitors arriving at the ferry terminal by car.
- Tilbury Fort Scheduled Monument is located immediately adjacent to the docks, with a public right of way connection to it.

Landscape Character Summary

2.4.1 The Kent Project Site has a strong sense of character and identity centred around the rich natural and industrial history of the Swanscombe Peninsula.

2.4.2 The Swanscombe Peninsula has a generally open, low-lying and windswept character, retaining extensive areas of marshland including Black Duck Marsh, Botany Marsh and Broadness Marsh. Broadness Marsh, at the northern tip of the Peninsula, was historically a saltmarsh, but now has a raised terrain as a result of CKD tipping and the deposition of river dredgings. A number of other landscape features that are remnants of the Kent Project Site's industrial past are also present including tramlines, filtration systems, aeration lagoons and leachate settlement ponds as well as more obvious landmarks such as derelict industrial buildings and the disused Bells wharf and White's Jetty.

2.4.3 The landscape fabric across the Swanscombe Peninsula is extremely varied and includes extensive areas of marsh and grassland, semi-mature woodland and scrub, grassed embankments which act as flood defences, and some industrial premises, with public access limited to a small number of public footpaths including Saxon Way. Much of the peninsula has re-vegetated naturally over former industrial areas and spoil heaps, but areas of bare ground remain.

2.4.4 The chalk cliffs on the southern edge of the peninsula are a distinctive landmark feature in themselves as well as providing a dramatic backdrop to the marshes and a barrier to the landscape beyond.

2.4.5 Having been characterised by heavy industrial use in the past, activities at the Kent Project Site are now largely limited to Northfleet and Manor Way Industrial Estates and Manor Way Business Park. However, the Cemex Concrete Plant and Britannia Metals Factory on the eastern boundary still have an influence on the character of the peninsula, as do the various infrastructure features such as the electricity pylons including Kent Pylon, transmission tower, HS1 tunnel and the sewage treatment works in the centre of the Kent Project Site.

2.4.6 The central area around the Ebbsfleet International station and between the A2(T) junctions and the chalk cliffs, has a distinctly different character from the peninsula. The surrounding context is markedly different, being largely residential with the infrastructure in place for future phases of the Garden City. A mixture of landfill and pits create a more enclosed landscape with poor connectivity and sense of place.

2.4.7 The Ferry Terminal on the Essex Project Site is closely associated with Tilbury Docks and is very much influenced by the character of the docks. This is a large-scale landscape with supersized features including the docks and associated lifting gear, the ships and containers, warehousing and car storage parks. The former Tilbury Riverside Station building is a more modest feature and one of the few remaining smaller, more detailed features from the past.

Figure 9. **A unique blend of natural marsh-scapes, scrubby woodlands and re-colonised brownfield within a setting of major infrastructure elements**

2.5 Geology and Soils

2.5.1 The Project Site has a highly complex and unique topography. Industrial development, quarrying and other human influences have transformed the environment into a highly complex artificial terrain.

Geology

2.5.2 The bedrock geology of much of the southern part of the site is very evident in the landscape, given the chalk cliffs, chalk spine and chalk pits that form a part of the area. Similarly, given the extent of sand and gravel workings in the Ebbsfleet Valley and the presence of the River Thames, the geology is composed in the upper layers of sands and gravels overlaying the chalk in many locations locally and alluvial deposits covering the Swanscombe Peninsula and Tilbury Docks.

Chalk Landscape

2.5.3 The chalk cliffs that mark the southern edge of the peninsula form a distinctive backdrop to the Kent Project Site and create a unique sense of place with the gleaming white wall of rock. Behind this, Craylands Lane Pit, the Sports Ground Pit and Bamber Pit are remnants of the chalk quarrying industry - self-contained spaces enclosed by the high chalk walls. London Road and Galley Hill Road sit atop a narrow chalk spine along this edge, roughly 20m higher than the lower ground on either side.

Bakers Hole

2.5.4 The Bakers Hole Site of Special Scientific Interest (SSSI) is located within the Ebbsfleet Central Area north of Ebbsfleet International station and consists of a backfilled quarry which contained a considerable number of prehistoric flint finds of archaeological interest and has thus been designated for its geological importance.

Dramatic chalk cliffs at Craylands Lane Pit

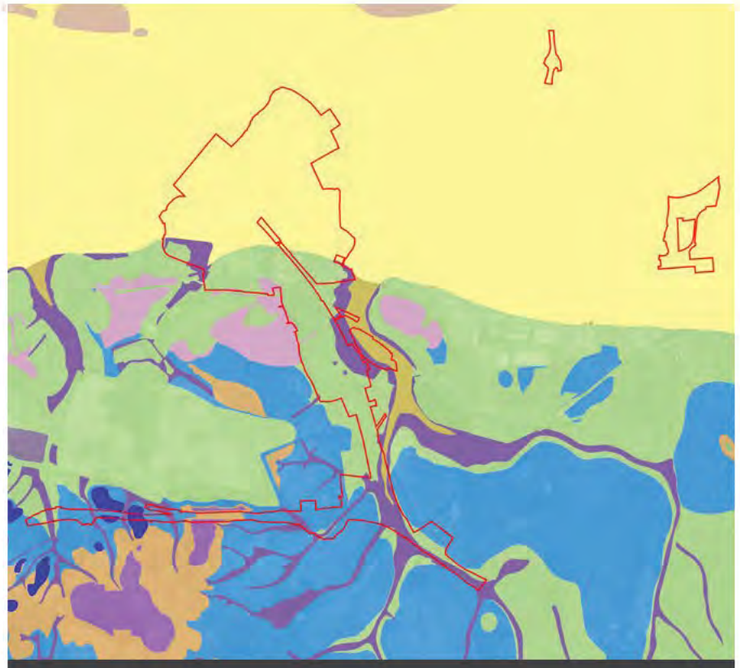


Figure 10. Geology

Soils

2.5.5 According to Cranfield University's Soilscape maps, the Swanscombe Peninsula and Tilbury Docks lie within Soilscape 21, a loamy and clayey soil of coastal flats with a naturally high groundwater. However, as much of the Swanscombe Peninsula has been quarried and subject to landfill and the soil has been largely extracted or covered, the base soil type is of limited relevance to future planting on the site.

2.5.6 Similarly the Ebbsfleet Central Area has also been subject to such significant landform changes that although it officially lies within Soilscape 7 (a freely draining slightly acid but base-rich soil) that soil type will also be of relatively limited relevance given the excavations and restorations in the valley.

Contamination

2.5.7 CKD wastes and dredged materials are the main sources of potential soil and groundwater contamination within the Kent Project Site and present a moderate level of risk to controlled water receptors including the River Thames and local groundwater resources. Under the current land uses, risks to human health are considered to be low or moderate to low.

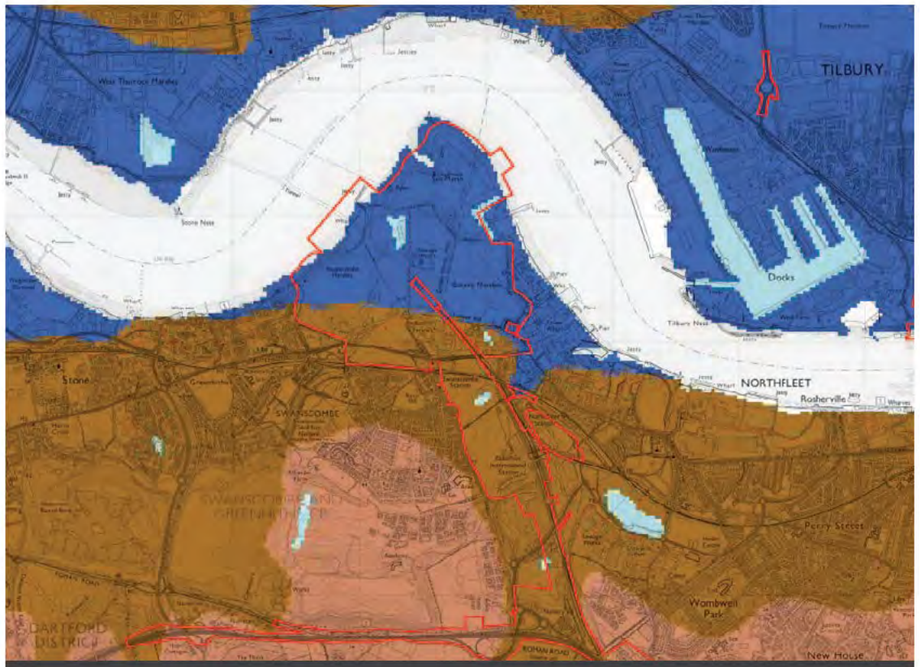


Figure 11. **Soils**

Soilscape 21:
Loamy and clayey soils of coastal flats with naturally high groundwater

Soilscape 7:
Freely draining slightly acid but base-rich soils

Soilscape 6:
Freely draining slightly acid loamy soils

2.6 Topography, Landfill and Flood Defences

A Marshland Topography

2.6.1 Historically, this low-lying land was uniformly marshland at around 1-2m AOD. This level, which sits just higher than the Thames River allowed brackish water to enter deeper inland via creeks which permeated the peninsula. The marshes formed part of the inter-tidal flood-zone, creating the natural conditions for salt-marsh and reedbed habitats.

Reclamation and Landfill

2.6.2 The use of the site for disposal of landfill materials including industrial waste products such as CKD and arisings from construction projects such as HS1 has created localised raised points across the peninsula, but particularly around the northern tip at Broadness Marsh. The levels have been raised in this area with a formation of three terraced steps reaching approximately 15m AOD at the uppermost plateau.

2.6.3 The CKD wastes and dredged materials represent the main sources of potential soil and groundwater contamination within the zone and are considered to present a moderate level of risk to controlled waters receptors including the River Thames and local groundwater resources. Under the current land uses, risks to human health are considered to be low or moderate to low.

Flood Defences

2.6.4 The Kent Project Site is located across all three of the Environment Agency's Flood Zones. The northern part of the Swanscombe Peninsula is located within Flood Zone 2 with a large band across the centre of the peninsula, located within Flood Zone 3. The Central Ebbsfleet Area is located almost entirely within Flood Zone 1. The Swanscombe Peninsula has existing flood defences which range in crest level from 6.2m AOD along the western shore of the peninsula to 8.8m AOD along the northern shore. These flood defences generally comprise earth berms constructed largely around the perimeter of the peninsula, with CKD cores. At Whites jetty, the flood defences are concrete flood walls with flood gates for access.

2.6.5 The Essex Project Site is located entirely within Flood Zone 3 and benefits from flood defences. The Essex Project Site has existing flood defences which range in crest level from 6.5m AOD to 6.7m AOD. The defences in this location are predominantly flood walls with flood gates for access. The existing flood defences are tied into the terminal buildings at the Jetty.

View from landfill at higher level down to grazing marsh adjacent to Botany Marsh

Large earthwork bunds screen Cemex plant

Flood defences north of Black Duck Marsh

Pond in Bamber Pit, with steep sloped landfill areas surrounding

DCO Order Limits

Elevation (m AOD)

-10

0

10

20

30

40

50

60

70

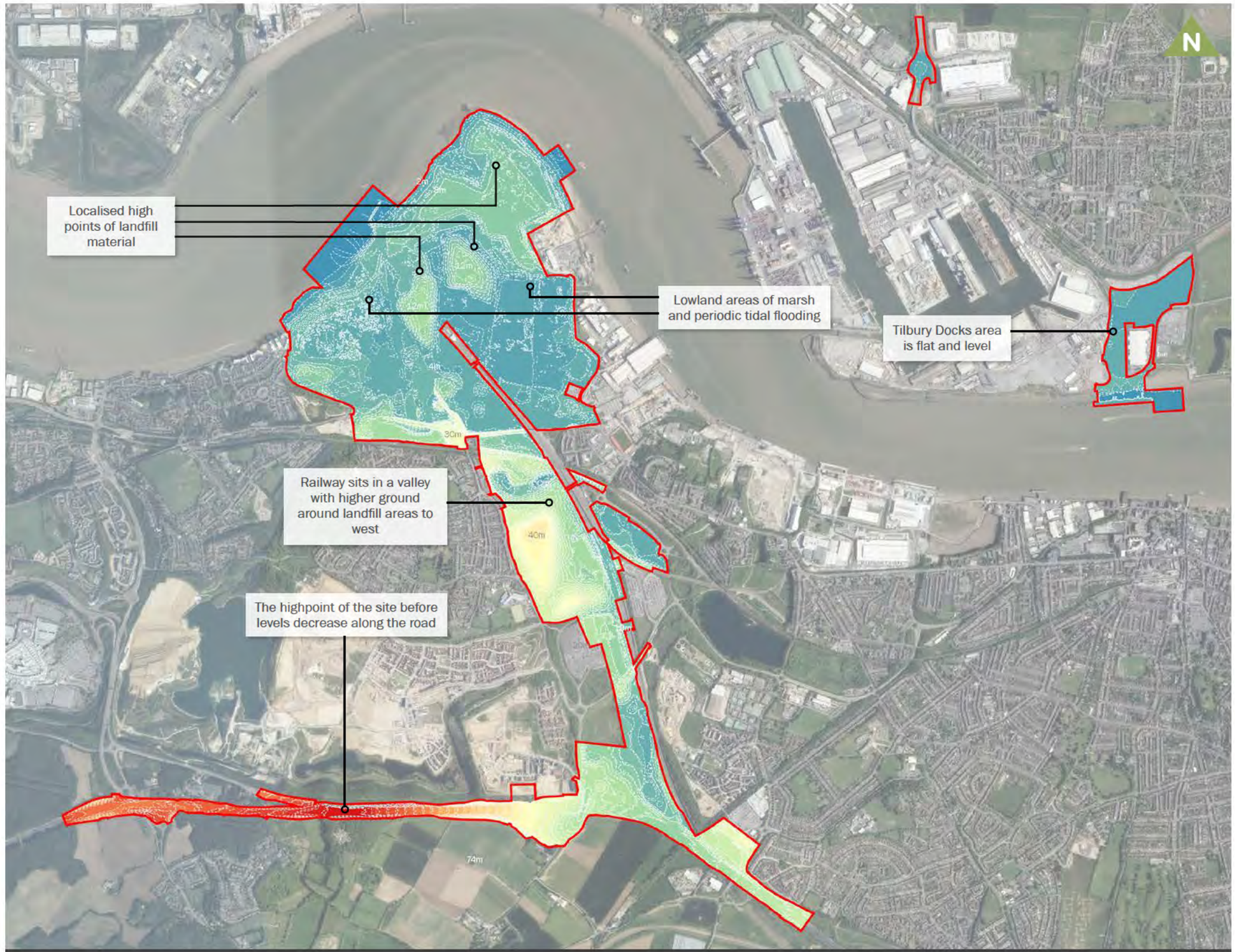


Figure 12. **Topography**

Overgrown ditches in Botany Marsh

The Swanscombe Channel (EA Main River) adjacent to PRoW DS2

Large ditch running alongside PRoW in Botany Marsh

Reedbeds and salt marsh at Bell Wharf

The River Ebbsfleet

Riverside view at Tilbury Docks, showing sea wall

Black Duck Marsh reedbeds

2.7 Blue Infrastructure and Hydrology

River Thames

2.7.1 The River Thames is of course the most significant blue infrastructure feature, lending a sense of openness to the Project Site, and a strong sense of connection between land and water. Views across the river and long vistas to the east and west are possible from the peninsula and the Tilbury ferry terminal facilitated by the wide meander of the Thames.

River Ebbsfleet

2.7.2 The River Ebbsfleet flows within the Ebbsfleet Central Area in the Kent Project Site, west of the HS1 railway line where it has a well vegetated character, before entering a culverted section through Northfleet and finally emerging at Robins Creek where it meets the River Thames. As with many urban rivers, the Ebbsfleet River has not been recognised for its value as a green corridor, but opportunity exists to recognise the benefits along the stretch that will run broadly parallel to the Resort Access Road.

Swanscombe Channel

2.7.3 The Swanscombe Channel runs north/south through the peninsula and is classified as a main river by the Environment Agency. This watercourse carries surface water run-off from the residential areas to the south and within the peninsula itself, discharging into the River Thames near the Kent Pylon.

Drainage and Water Bodies

2.7.4 The Kent Project Site contains a number of standing water bodies including open water in Black Duck Marsh, a surface drainage pond in the northern part of Swanscombe Marshes, a series of ponds east of HS1 tunnel entrance, a pond in Bamber Pit and attenuation ponds south of the A2260 Ebbsfleet Gateway, west of HS1. As well as their water holding function, these ponds add to the habitat diversity of the site. There are no ponds or surface water drainage features associated with the Essex Project Site.

2.7.5 Swanscombe Peninsula is drained by a network of ditches and watercourses that permeate the area. Predominantly, these features are focussed within Botany Marsh and Black Duck Marsh where they perform a strong biodiversity and a drainage function.

Flooding

2.7.6 Areas of the peninsula are seasonally inundated, specifically within Botany Marsh and alongside the main river and public right of way (DS2 and DS12).

Leachate Collection

2.7.7 Contaminants contained within the landfill areas leach out of the higher ground and are collected by a network of drainage ditches and leachate ponds. This polluted water is then pumped up to the water treatment works at the top of Broadness Marsh where it is cleaned and released.

DCO Order Limits

Standing Water

Seasonal Pool

Leachate Lagoon

Wet Reedbed

Seasonally Inundated Reedbed

Dry Reedbed (Infrequently Inundated)

Main River

Wet Ditch

Dry Ditch

River Thames

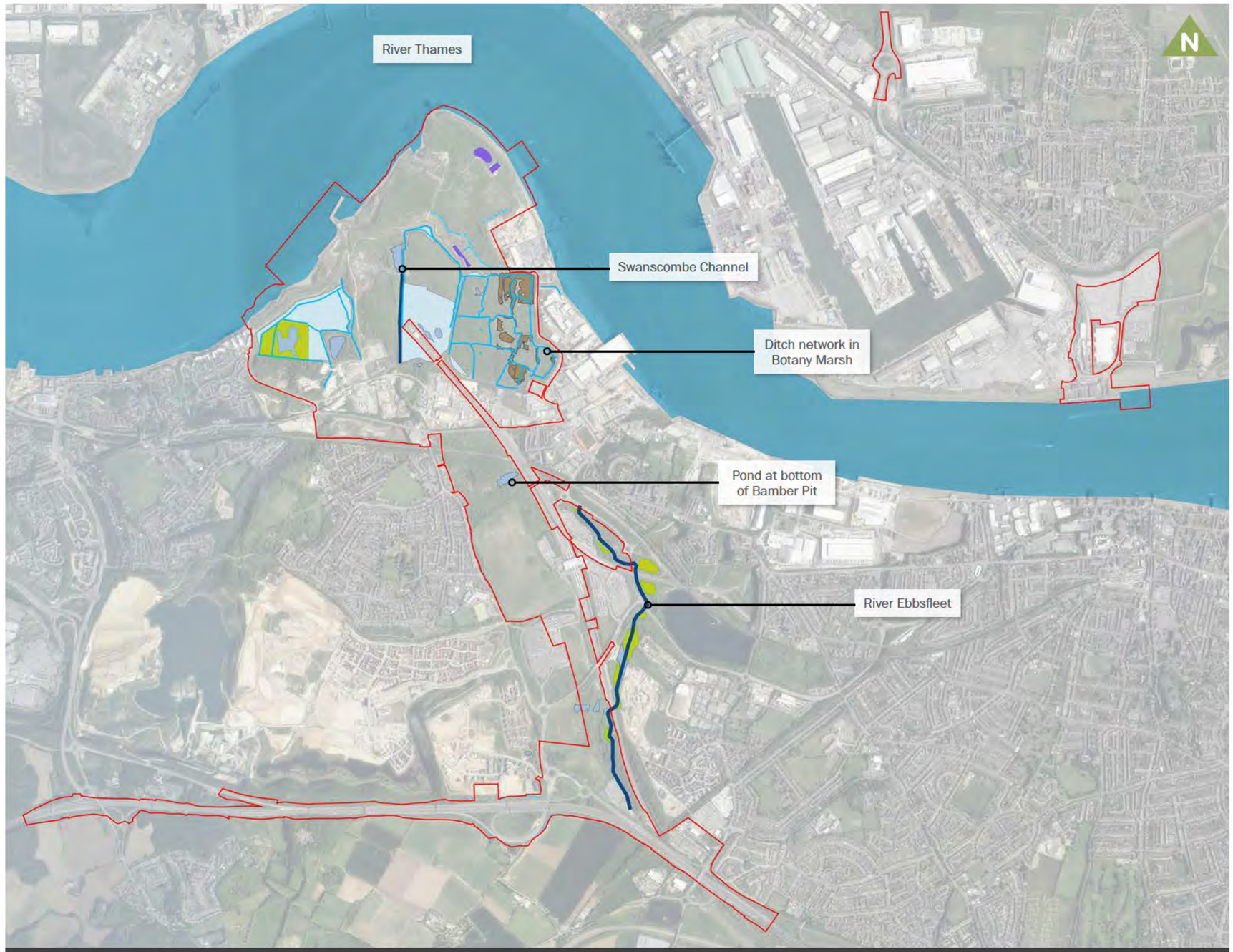


Figure 13. **Existing Hydrology**

2.8 Habitats and Biodiversity

2.8.1 This Landscape Strategy document has been prepared in close collaboration with the ecology work to ensure that an appropriate response to the site is achieved, and that the mitigation proposals are embedded into the design. Further detail is contained in the Environmental Statement: Terrestrial and Freshwater Ecology and biodiversity (Document Reference 6.1, Chapter 12). A full scale version of Figure 14 is also contained in the above report.

2.8.2 The Kent Project Site and in particular the Swanscombe Peninsula supports a number of acquatic and terrestrial habitats, including brownfield habitat important for invertebrates, grazing marsh, reedbeds and saltmarsh as well as inter-tidal mud.

2.8.3 Whilst the habitats have value as a whole, most are impacted in some way by contamination from the site's former industrial uses, the greatest impact being leachate seepage at various locations on the Kent Project Site. Several protected and notable species are however supported by these brownfield habitats, including much of the terrestrial Open Mosaic Habitat. A number of nationally scarce plants are found within grassland, marshland and ditches across the peninsula, including yellow and hairy vetchling, man orchid, divided sedge and round-leaved wintergreen, amongst others.

2.8.4 Also present is a nationally significant invertebrate population, part of an internationally significant winter bird population associated with European Sites in the Thames Estuary, a diverse breeding bird population, breeding dormouse, otter and water vole, and a large population of reptiles. Bats also use the Kent Project Site to forage and roost.

2.8.5 The Ebbsfleet Valley and A2 corridor support fewer sensitive habitats and species, although a diverse breeding bird assemblage, many invertebrate species, reptiles and a strong breeding dormouse population are present. A small amount of ancient woodland is present along the southern edge of the A2 and small areas of marshy grassland and reedbed flank the River Ebbsfleet along its length.

2.8.6 At the Essex Project Site, habitats are principally limited to hard-standing and buildings with limited ecological value and vegetated road verges.

Scrub and trees along Black Duck Marsh

Botany Marsh grassland, scrub and scattered trees

Ditches overgrown with reeds in Botany Marsh

Open meadow areas at Botany Marsh

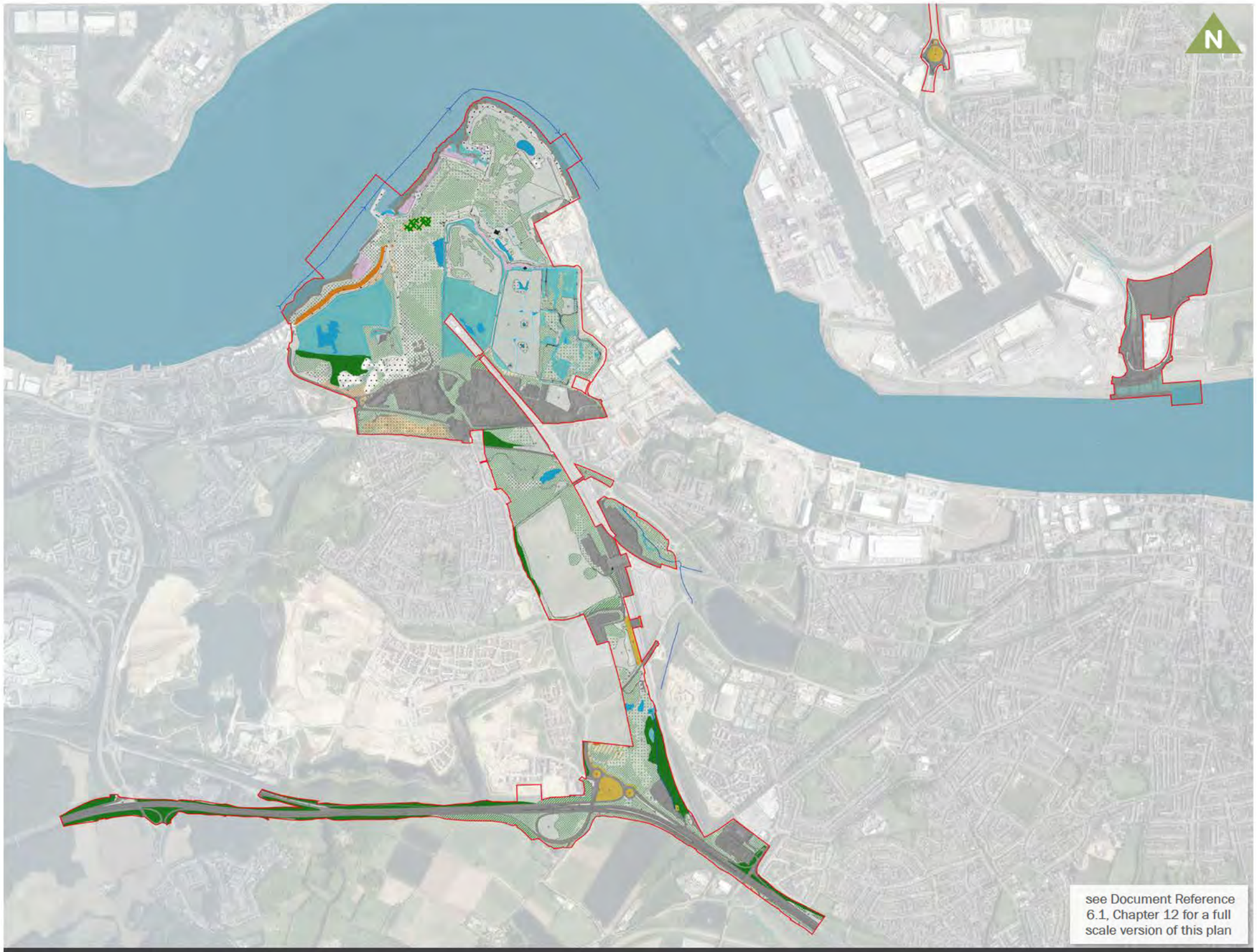
A hibernaculum at Botany Marsh

Scrubby woodland on east side of Black Duck Marsh

Diverse aquatic habitats at Black Duck Marsh

Open mosaic around pylons in Broadness Marsh area

Coastal reedbeds



- Order Limits
- Broadleaved Semi-natural Woodland
- Broadleaved Plantation Woodland
- Dense Continuous Scrub
- Scattered Scrub
- Tall Ruderal
- Arable
- Improved Grassland
- Poor Semi-improved Grassland
- Semi-improved Neutral Grassland
- Semi-improved Calcareous Grassland
- Matrix of Poor Semi-Improved Grassland and Scattered Scrub
- Matrix of Poor Semi-Improved Grassland and Tall Ruderal
- Matrix of Semi-improved Calcareous Grassland and Scattered Scrub
- Open Mosaic Habitats on Previously Developed Land
- Amenity Grassland
- Amenity Shrub Planting
- Ephemeral/Short Perennial
- Marshy Grassland
- Saltmarsh
- Scattered Saltmarsh Vegetation
- Seaweed on Artificial Rocks
- Standing Water
- Moving Water (Tidal)
- Swamp
- Mud
- Marginal Vegetation
- Bare Ground
- Hardstanding
- Running Water (River Thames)
- River Ebbsfleet
- Ditch

Figure 14. **Existing Habitats - Phase 1 Habitat Survey**

Flooded footpath adjacent to Swanscombe Channel (DS1)

Gravel path around south of Botany Marsh (permissible path)

PRoW on top of bund alongside Manor Way (NU1)

Track connecting Botany Marsh to Broadness Marsh at high level (no official status)

Wider pathway alongside pylons (DS1)

PRoW through embankment tunnel near Ebbsfleet International (DS17)

Pilgrim's Way overgrown with vegetation (DS1)

Poor quality path connects Ingress Park (DS1)

2.9 Public Rights of Way and Accessibility

Public Rights of Way

2.9.1 A network of public rights of way (PROWs) cross the Swanscombe Peninsula with the primary routes being DS1, which follows the river edge, DS2 and DS12, which head north through the centre of the Kent Project Site, and NU1 around Botany Marsh. The quality of these routes varies, with DS12 and DS2 being overgrown and flooded for parts of the year.

2.9.2 The other notable PRoW crossing the Kent Project Site is DS17 which connects Swanscombe and Northfleet via a bridge over the HS1 line. This is a direct but enclosed route with fencing on both sides separating the path from the steep drop into Bamber Pit to the north and the former landfill site to the south.

2.9.3 There are no PRoW crossing the Essex Project Site, although two (144 and 193) pass close to the site boundary.

Pilgrim's Way

2.9.4 Pilgrim's Way connects from London Road down a steep chalk ramp to the centre of the peninsula. This is a historic route that once took pilgrims from Swanscombe Church to a ferry connecting to Grays, Essex.

The England Coast Path

2.9.5 The England Coast Path will be the longest National Trail in the UK and the world, being the first to follow the entire coastline of the country at 4,500km in length. The proposed route passes around the peninsula following existing Public Right of Way DS1 from Ingress Park to Bell Wharf and on to connect with path NU1 around Botany Marsh.

Other Routes

2.9.6 Other maintenance roads, tracks and informal mown grass routes exist and are marked on Figure 15. Some of these are not officially accessible to the public but are used frequently. These include the routes north of Black Duck Marsh, with a route along the top of the flood embankment and a track along the southern edge of approximately 10m in width.

2.9.7 Other routes are signed to inform people that the routes are private and not accessible. These include paths to the Kent Pylon and around the Broadness Marsh area.

Cycle Routes

2.9.8 The Ebbsfleet Implementation Framework (2017) proposes an off road 'cycle superhighway' or 'Priority Greenroute' through the Kent Project Site, following the England Coast Path. No other official cycle routes pass through the peninsula, but many cyclists share the routes with pedestrians. It should be noted that motorcycle barriers at entrance points can obstruct cyclists from accessing the site currently.

DCO Order Limits

Public Right of Way

Bridleway

National Cycle Route

Figure 15. **Existing Public Rights of Way**

The Kent Pylon forms a local landmark but also presents safety and security issues

Surface water flooding issues in the marshes make some PRoWs inaccessible

Chalk terrain habitats in Sports Ground Pit

Salt marsh area near Bell Wharf is degraded with drift wood and rubble deposited across the area

The Grade II Listed former Tilbury Riverside railway station building at the Essex Site*

2.10 Designations and Built Features

Utilities Infrastructure

2.10.1 The Kent Pylon is a key landmark in the landscape and visible across most of the site. High voltage transmission cables are routed across the edge of Broadness Marsh and Botany Marsh, with a number of towers located within the Kent Project Site (six in total). There will be a clearance zone of approximately 20m beneath the electric cables to avoid conflict with the 'sag and swing' of these cables. A telecommunications radar is located north of Broadness Marsh which will be retained.

Topographical Constraints

2.10.2 The chalk cliffs to the south of the peninsula form an impressive backdrop and sense of identity to the Kent Project Site. Provision of safe and secure routes through the cliffs will need consideration, as will the shadow cast by these 20m high north facing cliffs, particularly in winter.

Contamination

2.10.3 The landfill areas will require a new leachate collection system and water treatment plant to be integrated within the landscape design. Any excavation for new sustainable drainage or ecological features must be lined to prevent contamination.

Ecology

2.10.4 A number of protected and valuable habitat areas exist across the Kent Project Site, including coastal salt marsh, reedbeds, scrub, woodland and open mosaic, that should be conserved and enhanced where possible.

Heritage

2.10.5 The rich archaeological history within the Project Site as well as the local industrial heritage provides an opportunity for interpretation and celebration through public art and landscape features. Whilst the scheduled monuments within the DCO Order Limit pose some level of constraint, the Neolithic, Paleolithic and Roman interest in the area also present an opportunity to connect with the past.

2.10.6 There are also three listed features within the site, the Grade II* listed former Tilbury Riverside railway station building, including floating landing stage at Tilbury, the Grade II listed Swanscombe Cutting Footbridge Crossing of A2(T) east of A296 Junction and a Grade II listed Boundary Stone at Ingress Park, all of which have been given due consideration as part of the evolution of the masterplan, in particular the Riverside Station which is to be renovated as a passenger terminal. Again, whilst posing some degree of constraint, these features are regarded as assets to be celebrated within the local landscape. Further detail is contained in the Environmental Statement: Cultural Heritage and Archaeology (Document Reference 6.1, Chapter 14)

Flooding and Drainage

2.10.7 A detailed assessment of flooding has been undertaken (document reference: ES Chapter 17) to understand the fluvial and surface water flood risks to both inform flood bank design as well as an effective sustainable drainage strategy. The marshes present a great opportunity for controlled areas of inundation as part of a connected sustainable drainage scheme.

DCO Order Limits

5m Contours

Designations

SSSI

Local Wildlife Sites

Scheduled Monuments

Listed Buildings

I

II*

II

Infrastructure

Existing Telecommunication Pylons

Electricity Pylons

Electricity Lines

HS1 Infrastructure

Habitat Areas

Coastal Saltmarsh

Reedbeds

Waterbodies/Watercourses

Woodland

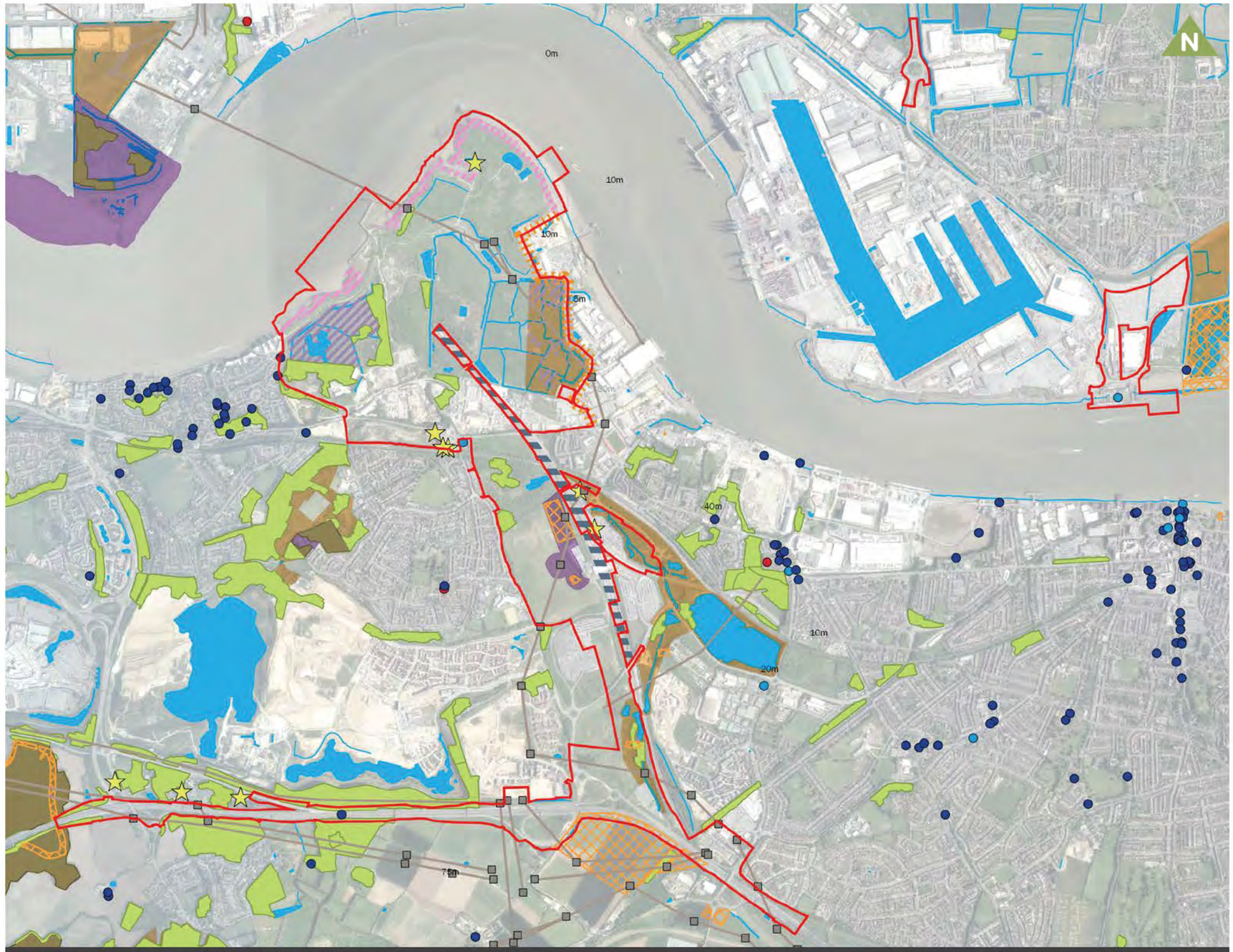


Figure 16. **Landscape and Ecology Constraints and Opportunities**

3. LANDSCAPE VISION

3.1 Design Statement

To achieve the sustainability objectives of the London Resort, a strong focus is placed on biodiversity, conservation, habitat creation and resilience to climate change.

The Resort landscape will be sensitively integrated into the existing marshland landscape. Inspired by the unique marshland and estuarine qualities of the Project Site it will embody the unique sense of place.

The Resort will complement and harmonise with its environment, mimicking the natural processes, wetland habitats and planting typologies to create a truly 21st century sustainable destination.

3.2 Design Objectives

A Destination Landscape

- **Create a world-class, exciting Resort landscape with a bold and innovative concept based around riverine and estuarine principles;**
- **Bring the principle of the marsh landscape into the Resort with rain gardens, swales and natural planting to manage surface water drainage, create a strong structure to the landscape and respond to the local site conditions;**
- **Planting to be based on native species and local habitats, designed to have seasonal impact and create positive micro-climates; and**
- **Hard and soft landscape design detailing to be climate and micro-climate resilient.**

A Biodiverse Landscape

- Existing and retained habitats to be managed to check the natural ecological succession which is currently taking place and maintain open ground and grassland habitats as well as woodland and scrub;
- Where existing habitats will be lost, translocation of some areas to new locations on site to preserve and enhance biodiversity;
- Enhancements within existing habitats to improve biodiversity including variation in water levels in Black Duck Marsh and increasing wet habitat in Botany Marsh; and
- Ecological and water quality monitoring to be included as part of a management plan for the Project Site to ensure the rich diversity of plant and animal life is maintained.

A Resilient Landscape

- Integrate marsh landscape into the Resort with rain gardens, swales and naturalistic planting to manage surface water drainage and create a strong landscape structure;
- Planting to be based on native species and local habitats, designed to have seasonal impact as well as providing shade, natural cooling and wind protection;
- Habitat creation to be multi-functional, improving biodiversity, creating natural security, managing water resource and providing natural beauty;
- Raised and new flood banks to manage increased risk of flooding as a result of climate change; and
- Landscape to be climate and micro-climate resilient with reduced reliance on irrigation and chemical controls and use of sustainable materials wherever feasible.

A Historic Landscape

- Use the Pilgrim's Way historic route as principal pedestrian access from London Road to the Resort, Marshes and London Resort Ferry Terminal with a grand sense of arrival;
- Retain and integrate industrial heritage features on the peninsula (such as tram lines or remnant structures) where possible within the public realm design;
- Celebrate local heritage through engagement with key landscape features such as the chalk cliffs and Kent Pylon and public art installations; and
- Enhanced marshlands, recreated creek connection to Broadness Harbour and salt marsh areas will more closely echo the historic marshland character.

An Accessible Landscape

- Footpath and cycle routes to improve connectivity from Ingress Park, London Road, Galley Hill Road and Manor Way;
- Development of a way-finding strategy to provide clear directional guidance and orientation information for all users;
- Creation of active landscape spaces within the resort where visitors can interact with water, plants, geology, history and natural sounds;
- Creation of tranquil amenity spaces for picnics, resting points and appreciation of nature both within the resort and the surrounding marsh landscape; and
- Access to the marshes and River Thames frontage to be improved and enhanced through use of board-walks, bird hides and clear signage information to limit disturbances to wildlife.

Taking inspiration from the unique marshland and estuarine qualities of the site, the design concept is derived from the powerful fluvial forms of the river and marsh formations.

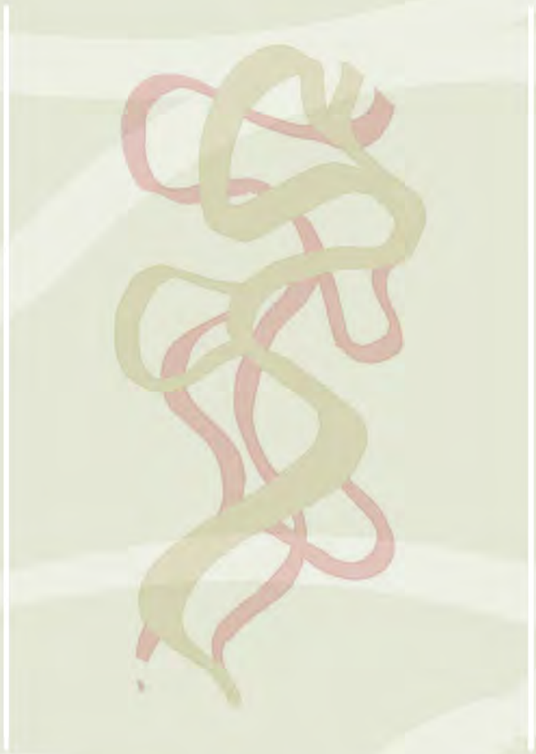
Distinctive Thames estuary hydrological character

A topography shaped by the flow of water

Abstraction of fluvial patterns

Indigenous colour palette

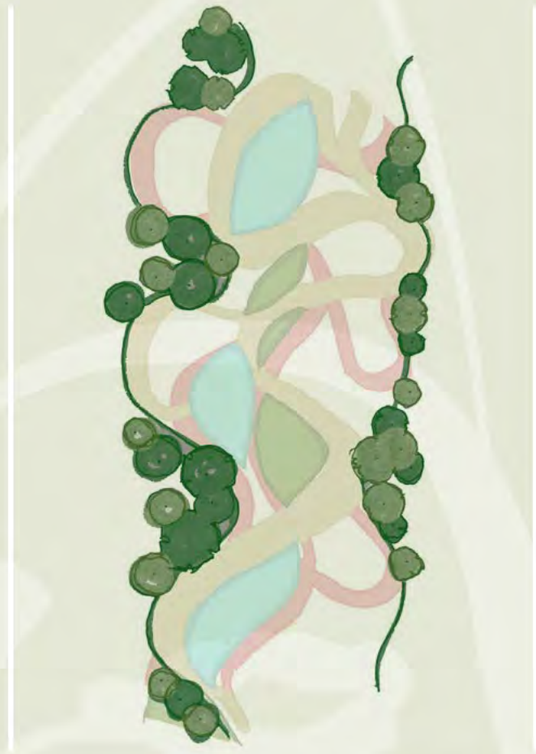
Flowing forms translated to the public realm



Islets of planting formed within flowing spaces

Structural tree planting to define edges

Composite concept



4. LANDSCAPE STRATEGY

4.1 Illustrative Landscape Masterplan

4.1.1 This section develops the vision set out previously, and presents the landscape proposals for the Project Site.

4.1.2 The Landscape Masterplan maps out the range of landscape typologies proposed across the Project Site. These range from habitat enhancements and ecologically focused proposals around the marsh areas to the landscape intent around the resort areas where a different character is necessary. The overarching vision remains the same for all areas - to create a landscape that responds to the site context and sense of place.

4.1.3 The following sections present each area of the masterplan in more detail with illustrations, sections and sketches. These areas have been split into three main zones, which are summarised below:

Marsh Landscapes

4.1.4 The marsh landscapes comprise the natural landscapes at Black Duck Marsh, Broadness Marsh and Botany Marsh. The landscape of the Swanscombe Peninsula will be enhanced through water quality and habitat enhancements as well as improved public access, connectivity and facilities. An Ecological Mitigation and Management Framework (EMMF) (document reference: ES Appendix 12.3) aims to interrupt the current ecological succession to maintain open mosaic habitat on the peninsula as well as grassland and scrub. Water quality and wet habitat will also be improved with an upgraded leachate treatment system, a new system of reedbeds and ditches, ponds and scrapes as well as an extension to the salt marsh habitat around the edge of the peninsula. Public footpath and cycle connections will be enhanced and improved including the routing of the England Coast Path, as well as public access facilities comprising board walks, bird hides and seating areas.

Resort Landscapes

4.1.5 The Resort landscapes are made up of the sequence of arrival spaces to the resort, outside the payline. These include the terminals at Tilbury and the London Resort Ferry Terminal at the Thames, Ebbsfleet International Station and the interchange terminal and parking areas. It includes the Resort Road within the peninsula and the hotels and attractions along it, conceived as a 'string of pearls'. A number of public plazas and landscaped spaces provide the exciting visitor experience upon entering the resort, with new tree and shrub planting, water features, canopy structures and paved areas.

Infrastructure and Back of House

4.1.6 The landscape masterplan includes designs for the highways leading up to the Resort from the A2 junction. Back-of-house areas to the west and east to support the Gates 1 and 2, staff accommodation in the Craylands Pit and other utilities and services in the Sports Ground Pit and Bamber Pit.

Figure 17. Illustrative Landscape Masterplan

- DCO Order Limits
- Proposed Building
- Proposed Building with Green Roof
- Proposed Building with Brown Roof
- Double Native Hedgerow with Internal Security Fence to Resort Boundary
- Woodland/Dense Scrub
- Scattered Scrub and Rank Grassland
- Open Grassland and Sparse Vegetation
- Bare/Disturbed Substrate
- Salt Marsh
- Reedbed/Marsh
- Permanent, Semi-permanent and Ephemeral Water Bodies
- Existing Watercourse/Wet Ditch
- Proposed Wet Ditch
- Tarmacadam Road
- Gravel Access Track
- Hoggin Shared Path/Cycleway
- Mown Grass Path
- Boardwalk (Width Varies)
- Bird Hide/Tower

Figure 18. **Illustrative Landscape Masterplan - Peninsula Overview**

4.2 Habitat Strategy

DESIGN PRINCIPLES

- Marsh habitats at Black Duck and Botany Marsh (east) have high ecological value overall but are degraded in parts. They will be enhanced through a targeted management regime.
- A constructed reedbed will be created to form the new northern buffer to Gate 1 of the Resort, filtering grey water and stormwater run-off.
- Extended salt marsh habitats will be formed along the edge of the River Thames through the re-profiling of banks and retired flood defences.
- Scrub mosaic of buckthorn, blackthorn and grassland on Broadness Marsh will be retained and enhanced through a new management regime to encourage an open mosaic habitat, suppressing ecological succession in parts to maintain maximum diversity.
- Connecting woodland, meadow and wetland habitat will be created within Gate 1 and Gate 2 to allow wildlife corridors through the Resort, using natural habitat features to form ecological stepping stones enhancing the biodiversity and amenity value of the Resort.
- Roofscapes will also be used for habitat creation, green and brown roofs adding to the diversity of habitat within the Resort, particularly for invertebrates.
- Craylands Lane Pit will also be enhanced with an appropriate management regime to maintain the grassland species particular to the limestone habitat present at the Kent Project Site while targeted management of Sports Ground Pit and Bamber Pit will aim to maintain increased diversity in these areas.

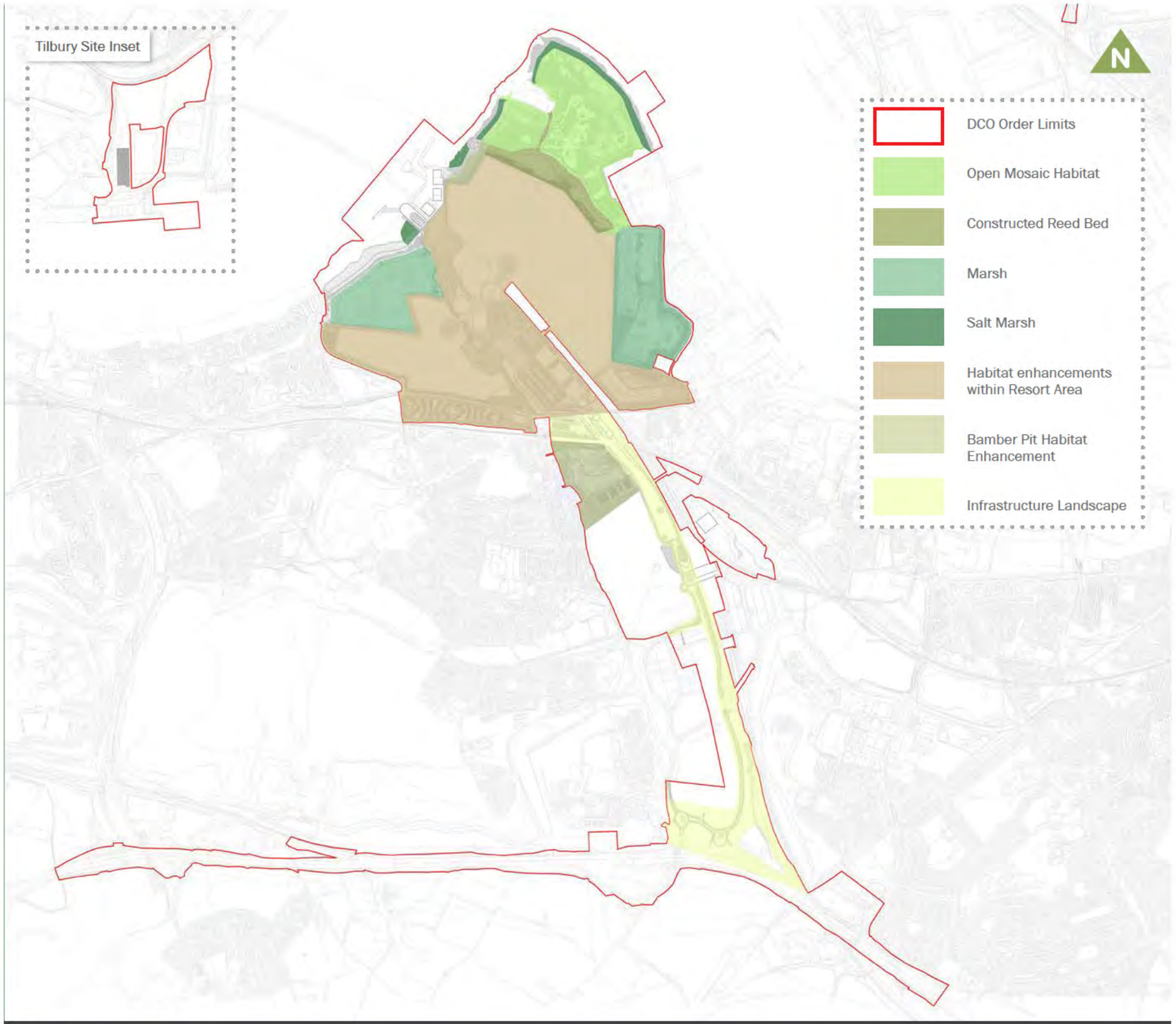


Figure 19. Habitat Strategy

4.3 Blue Infrastructure Strategy

DESIGN PRINCIPLES

- A network of drainage ditches cross the peninsula to form distinct edge conditions along marshland areas. These will be retained wherever possible.
- A new 'Reedbed Channel' will be created along the northern and eastern boundary of Gate 1 of the Resort, draining surface water run-off and forming a connected hydrology with Broadness harbour and Botany Marsh (east).
- Reedbeds provide a variety of ecosystem services, providing an ideal environment for treating wastewater, reducing contamination, raising water quality and enhancing biodiversity through the formation of connected habitats.
- Rain gardens will soften the plaza and interchange areas within the Resort arrival space, and create space for tree planting. They will also form part of the connective natural green infrastructure within Gates 1 and 2.
- Swales within the Gates will manage the flow of surface water, provide wet habitat and natural security to the perimeter.
- The Swanscombe Channel will be diverted alongside the Resort Road through the development and discharge into Black Duck Marsh.

Figure 20. **Blue Infrastructure Strategy**

4.4 Accessibility Strategy

DESIGN PRINCIPLES

- Sustainable modes of transport and local community connectivity are central to the access strategy with pedestrian and cycle access forming a key part of the access plan.
- The Pilgrim's Way forms the primary pedestrian/cycle route connecting Swanscombe to the Resort and Swanscombe ferry terminal, providing local access and a grand sense of arrival with panoramic viewpoints along the route.
- A network of way-marked routes will provide pedestrian and cycle access around the natural areas of the peninsula (comprising existing and diverted PRoW's along new route alignments) and including the England Coastal Path.
- Informal 'Nature Trails' will be created in the northern-most part of Broadness Salt Marsh where access will be limited to reduce disturbance to wildlife.
- New board-walks and bird hides will provide safe access within the marsh areas and along the Thames riverside with clear 'wildlife only' areas maintained.
- Throughout the whole of the Resort, at both ferry terminals and Ebbsfleet International Station, a way-finding strategy will be developed to provide clear directional guidance and orientation information for all. This will be developed with all users in mind: sound, touch and smell playing a role as well as visual cues.

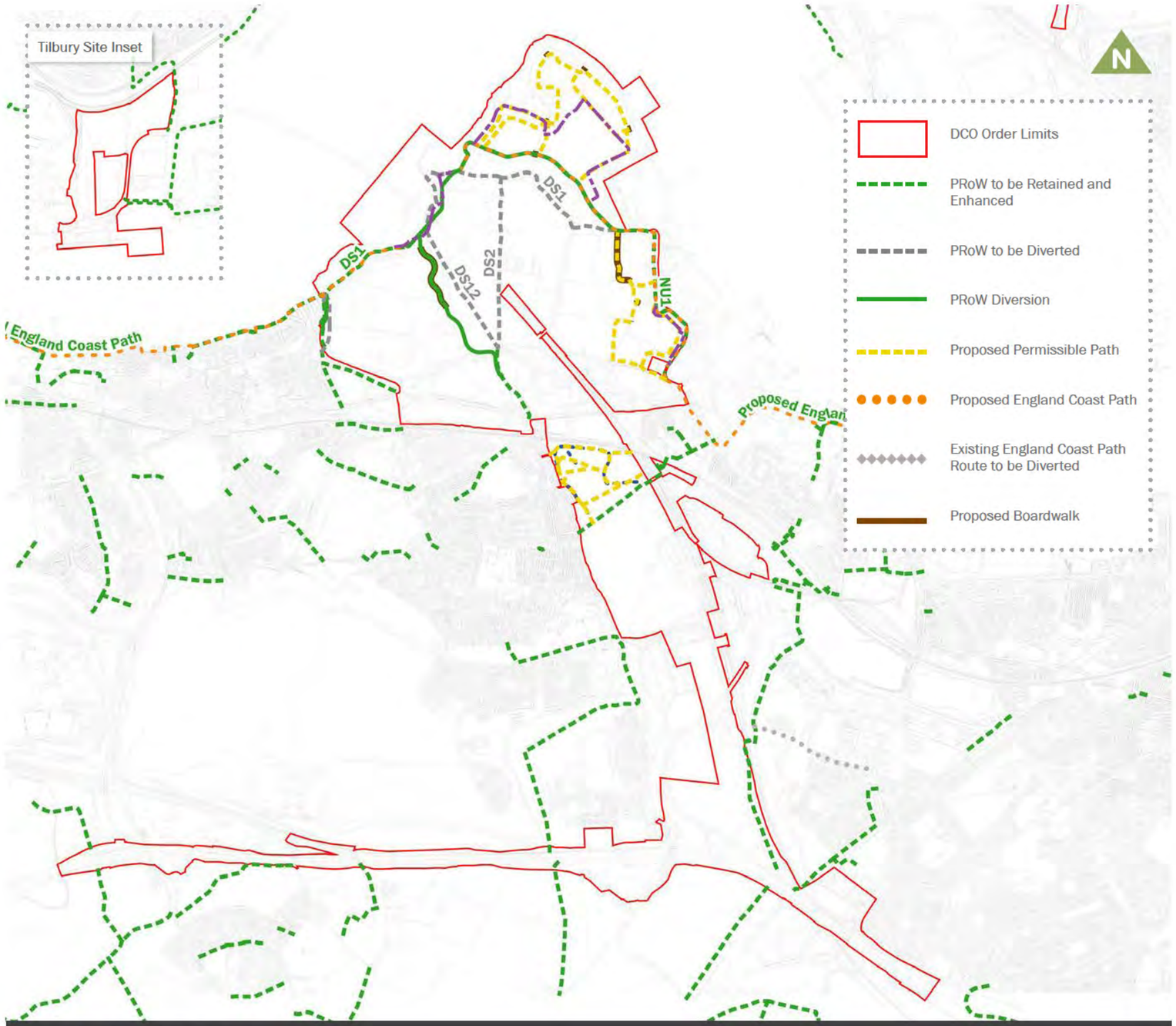


Figure 21. Accessibility Strategy

4.5 Public Facilities Strategy

DESIGN PRINCIPLES

- Water plays a role in providing a focal point to public realm spaces at arrival terminals to the resort. These water features will be designed with a common theme and should incorporate natural planting to echo the marshland characterisics.
- Two bird watching towers will be provided within the Marshes to encourage wildlife enthusiasts whilst reducing disturbance to wildlife.
- Viewing platforms at high level vantage points on the chalk cliffs, and on the River Thames edge, allow visitors to engage with the river more directly and enjoy panoramic views.
- A riverside walk and fitness/play trail is proposed along the more active western side of the peninsula between the Kent Pylon and Ingress Park residential area. A further opportunity for informal/ natural play is provided in Bamber Pit to offer a local amenity for the neighbouring residents at Swanscombe.
- Other facilities will be low-key in keeping with the natural approach. Picnic areas are provided at nodes within the marshes. Seating will be integrated in areas where flood defences form an edge to pathways to allow for rest and relaxation.
- The existing amenity space within Botany Marsh (east) will be retained for use as a picnic area and for informal recreation usage.

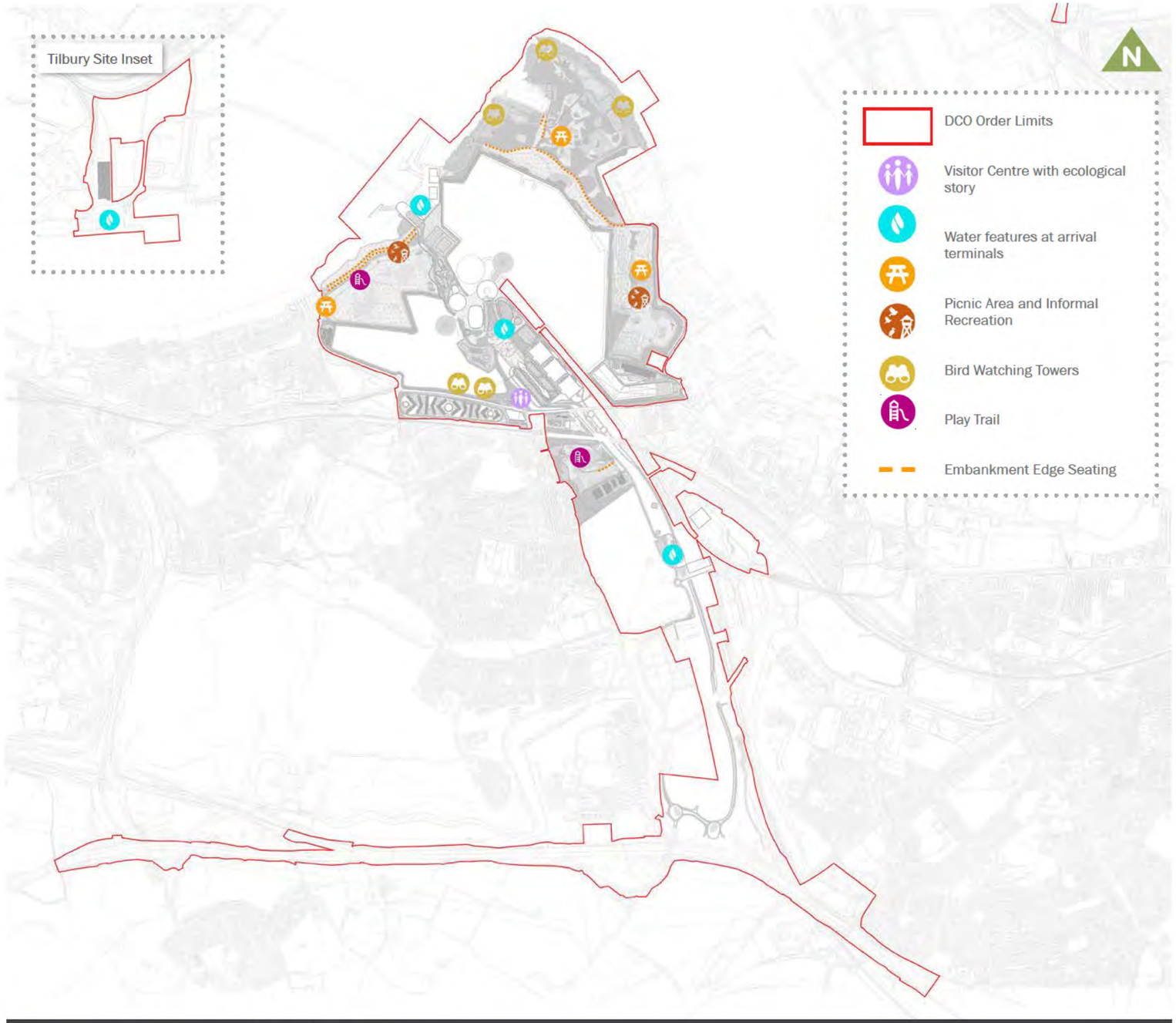


Figure 22. Public Facilities Strategy for Natural Spaces

4.6 Black Duck Marsh

DESIGN PRINCIPLES

- New areas of open water, small islets for bird roosts and scrapes to vary the marsh base profile will be formed to diversify the habitat in Black Duck Marsh.
- The Resort road will wind alongside the eastern edge of Black Duck Marsh with new planting to replace lost woodland in a naturalistic marshland character, to buffer the reedbed area.
- A separate pedestrian boardwalk will meander through the eastern end of the marsh, above the level of the reedbeds, providing a local landscape experience for visitors and locals using the route.
- The northern edge of Black Duck Marsh will be enhanced to allow more open views of the marsh along a managed public access frontage.

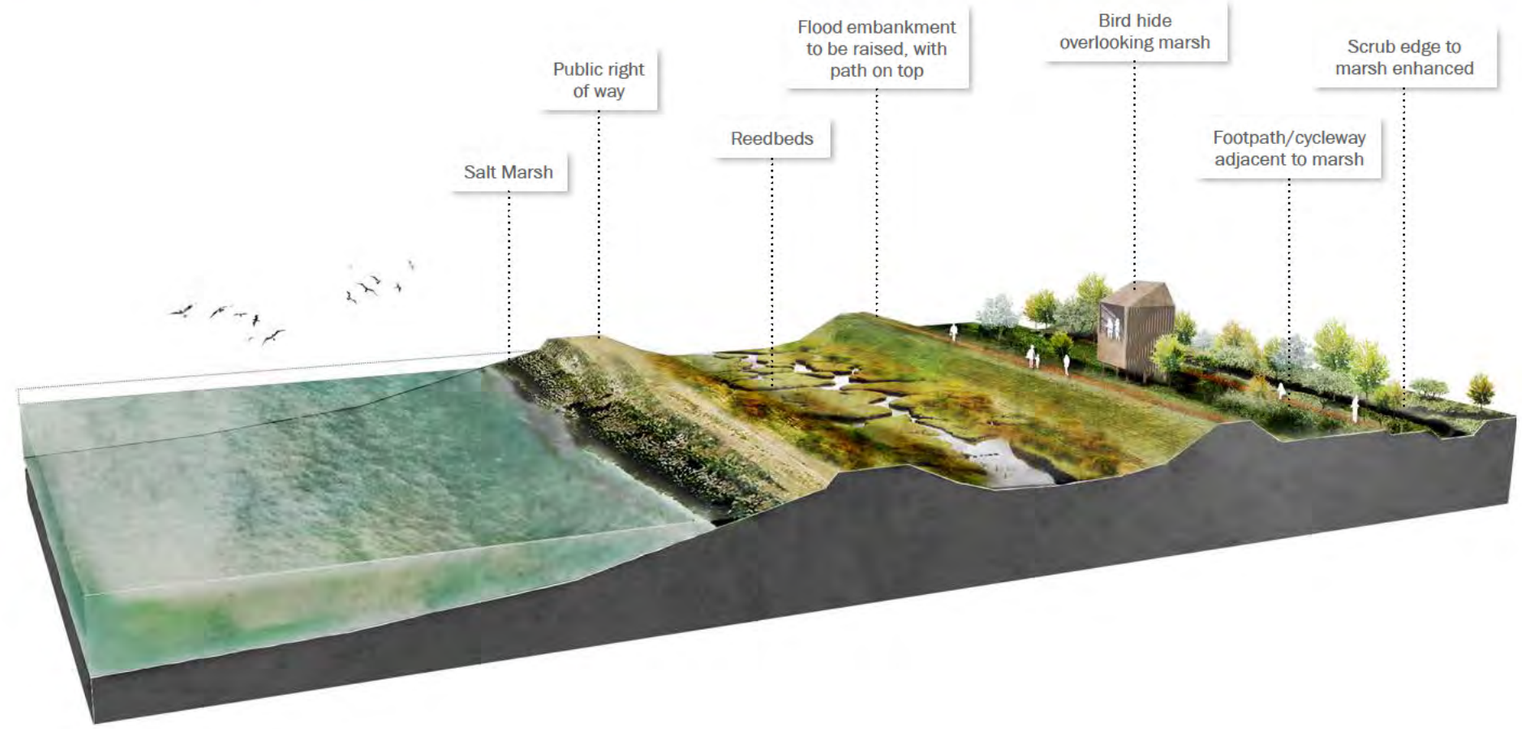


Figure 23. Concept Section through flood embankments and edge of Black Duck Marsh

1. New arrival space adjacent to Ingress Park with views over Black Duck Marsh
2. New bridge providing level access to the existing Thames Path
3. Nodal space providing access to network of pathways
4. Walking route along top of raised flood defence bund, to be landscaped with wildflower meadow mix
5. Lower track retained and re-surfaced once usage as a haul road is complete. To serve as a shared cycleway and footpath
6. Clearance of dense bramble and retention and enhancement of scrub and trees along Black Duck Marsh northern edge
7. Pockets of woodland and scrub, and small island created on east side of Black Duck Marsh to act as a buffer to development, with elevated boardwalk weaving through to provide separation
8. Tree planting with wet woodland species (alder and willows) extending 10m into the marsh. A further 10m wide tree planting zone and swale on inside of Leisure Core
9. New water bodies and marsh formed to provide habitat connection on the west side of the resort
10. Enhancement of existing salt marsh zones to west of ferry terminal
11. Bird hide tower
12. Feature boardwalk through the eastern side of Black Duck Marsh

Figure 24. Black Duck Marsh Landscape Proposals Overview Plan

4.7 Ferry Terminal, Wharf Area and Thames Shoreline

DESIGN PRINCIPLES

- The ferry terminal will be a major arrival point for visitors to the Resort. Upon disembarking the ferry, they will enter a courtyard space where they will transfer onto the awaiting people mover land train. The landscape design of this space will feature the resort branding, welcome signage and planted islets following the style of the London Resort Plaza.
- The existing flood defence will be raised to a new crest level approximately 1m higher with meadow planting and amphitheatre seating incorporated into the new design.
- Creation of a Gateway onto the peninsula from Ingress Park and the Coastal Path with public amenity spaces.
- A public right of way (DS1) currently passes along the edge of the shore north of Black Duck Marsh and in front of the wharf. This will form part of the England Coast Path (DS1) routing past the ferry terminal and Bell Wharf to connect Black Duck Marsh and Ingress Park to Broadness Marsh and Botany Marsh.
- To the south of Bell Wharf, an area of salt marsh to be restored/enhanced to create an attractive foreground to the ferry terminal and enhance the arrival experience as well as providing ecological mitigation benefits.

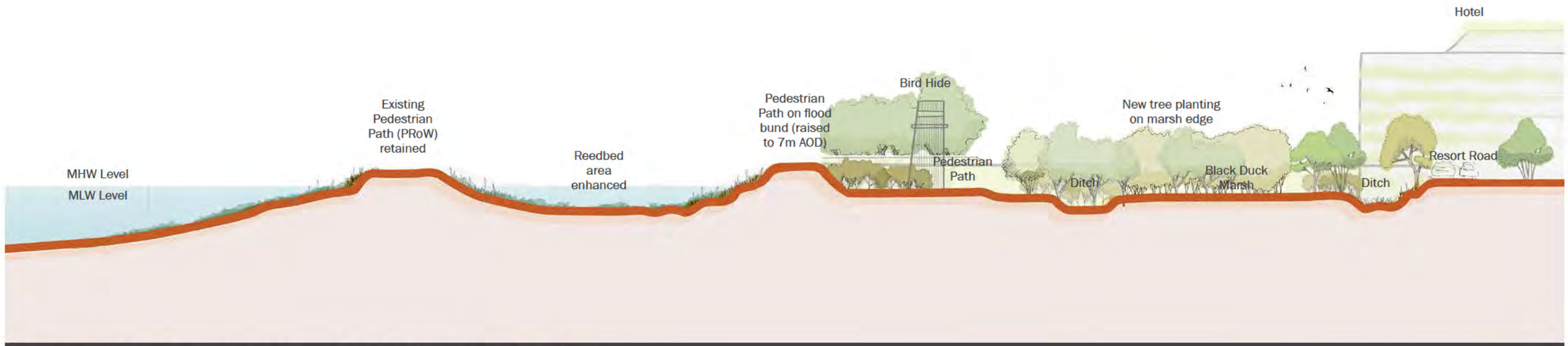


Figure 25. Cross Section through flood defences, Black Duck Marsh Edge and Resort Road

1. Re-aligned public right of way routed between Gate 1 and ferry terminal

2. Hotel with green roof and potential for vertical greening on façades. Naturalistic landscaping in character with the marshes to blend building into the landscape

3. New water bodies, marsh and wet ditches to provide habitat connectivity - ecological stepping stones - between Black Duck Marsh and Broadness/Botany Marshes

4. Enhancement of existing salt marsh zones to west and north east of ferry terminal

5. Landscape courtyard within the ferry terminal and people mover interchange area to have a striking ornamental landscape theme following the concept for the Resort arrival spaces in the Leisure Core

6. Feature boardwalk through the eastern side of Black Duck Marsh

7. Retention and enhancement of existing birch woodland to provide a visual buffer to the north

8. Wet woodland and scrub to maintain visual screen between marsh and ferry terminal

9. Top layer of existing flood embankment retained and reused on raised embankment to retain existing wildflower seed bank

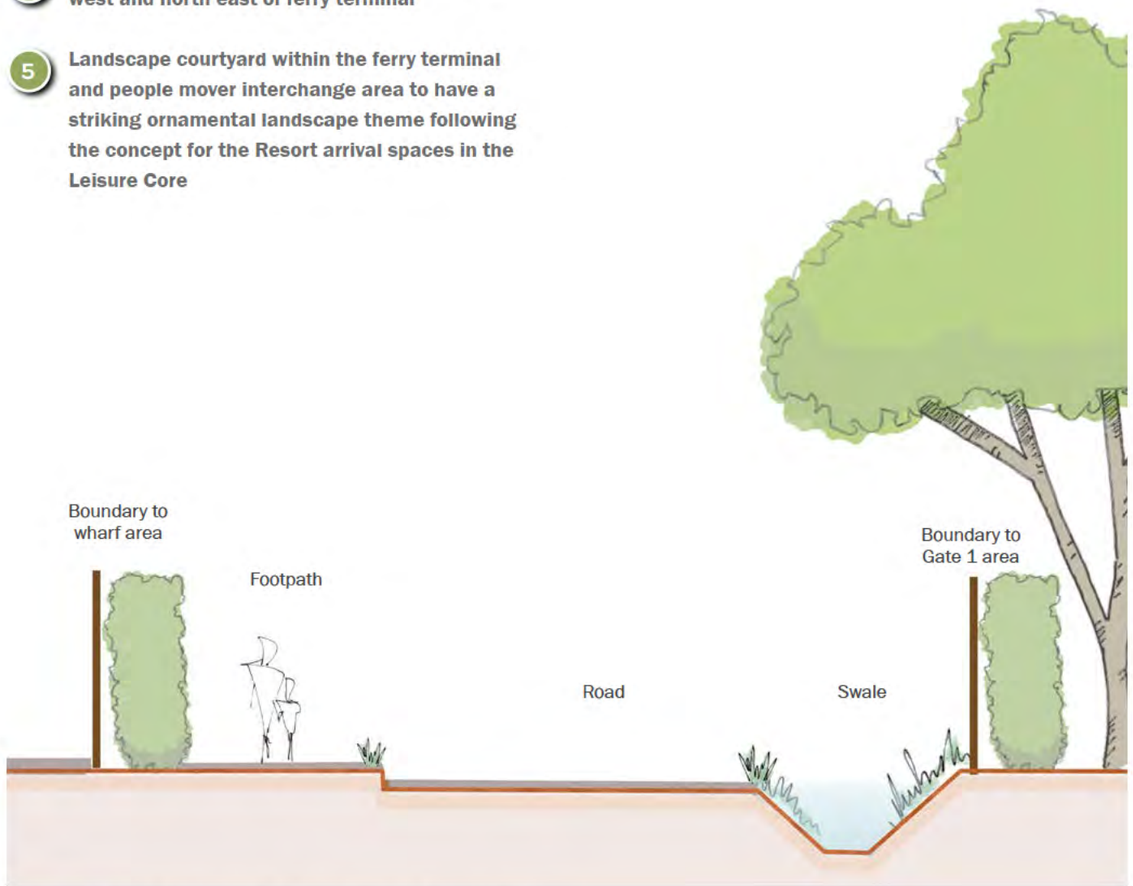


Figure 26. **Pedestrian route through wharf area section**

Figure 27. **Cross Section through flood defences and Black Duck Marsh Edge**

4.8 Ingress Park Gateway Area

1. New gateway space adjacent to Ingress Park with views over Black Duck Marsh with opportunities for public art of landscape structure
2. New bridge providing level and enhanced access to the existing Thames Path/new England Coast Path
3. Public realm node providing access to network of pathways
4. Existing public right of way along edge of River Thames retained *in situ*
5. Existing reedbed area managed to enhance and diversify plant habitat
6. Raised flood defence bund, to be landscaped with wildflower meadow mix using existing seed bank
7. Opportunity for a fitness/activity trail alongside lower edge of the flood embankment
8. Lower track retained and re-surfaced as shared footpath/ cycleway once usage as a haul road is complete
9. Scrub and bramble edge managed for dormouse
10. More open views of Black Duck Marsh created by removal of steel fencing, and upgrade of the low-level trail (existing PRoW route).
11. Improved pedestrian connection to Ingress Park with new pathway surfacing and planting alongside
12. Broad linear woodland created along southern edge of Black Duck Marsh and northern edge of Gate 2, wrapping around back-of-house area

Figure 28. **Gateway spaces at Ingress Park**

Seating integrated into flood embankment edge

Play features alongside pathways

Opportunities for seating, shelter or public art to act as a gateway feature

4.9 Black Duck Marsh - Resort Interface

Boardwalk on east side of Black Duck Marsh

Figure 29. Typical Resort Boundary Section

1. Open water areas created
2. Feature boardwalk which forms the diverted route of PRoWs (DS1 and DS12) through the Resort with pedestrian and cycle access separated from vehicles on the Resort road
3. Re-aligned ditches
4. Pockets of woodland and scrub, and creation of small island on east side of Black Duck Marsh to act as a buffer to development;
5. Hotel drop-off with water feature and ornamental planting in marshland style
6. A wide belt of replacement tree planting with wet woodland species (alder and willows) to be created along the northern edge of Gate 2 extending into the marsh. An internal swale within Gate 2 will collect surface water draining from Gate 2 to discharge into the marsh
7. Swanscombe Channel diversion to follow the pedestrian route through the Resort and connect to Black Duck Marsh

Figure 30. Western Edge of Black Duck Marsh and Resort Road

4.10 Broadness Marsh

1. 10m wide tree planting zone and swale on inside of Leisure Core adjacent to boundary
2. New water bodies and marsh formed to provide habitat connection on the west side of the Resort
3. Decked viewing platform to divert public around the base of the Kent Pylon
4. Brownfield open mosaic habitat retained under pylon area (exclusion zone of tree planting under overhead power cables)
5. Constructed wetland formed of reedbeds and aquatic plants to provide water treatment and habitat creation function
6. New drainage channel connecting reedbeds to Broadness Creek, with access track alongside
7. Primary footpath follows new alignment, raised onto upper terrace to provide separation from the resort and wetlands and allow for improved views across the marshes
8. Nature trail broadly follows the top of the flood defence bund
9. Boardwalk access points over salt marsh creation area
10. Retained and enhanced Open Mosaic Habitat comprised of woodland, dense scrub (hawthorn, dogwood, blackthorn), open grasses and rough exposed ground
11. Salt marsh habitat extension formed by creating ebayments to increase the inter-tidal zone and create conditions for natural colonisation

Figure 31. Broadness Marsh Overview Plan

4.11 Open Mosaic Habitat

DESIGN PRINCIPLES

The overall aim is to maintain and enhance the structural complexity of the existing open mosaic habitat in the Broadness salt marsh area to benefit a range of species and species groups including reptiles and birds, but in particular invertebrates associated with Thames Gateway brownfield habitat. The existing mix of scrub, grassland, sparse vegetation and bare ground/hardstanding will be enhanced through the following:

- **Creation of additional bare ground scrapes through removal of topsoil to reveal the substrate beneath.**
- **Creation of shallow pools of varying depth which are lined/capped with impermeable material to hold water throughout most if not all of the year.**
- **Creation of piles/mounds of mixed crushed and coarse concrete rubble salvaged from existing piles, or derived from breaking up existing concrete hardstanding, within the construction footprint.**
- **Creation of mounds and low bunds using chalk ballast material derived from construction works or tunnelling activities within the disused chalk pits.**

Figure 32. Open Mosaic Habitat Management Concept - Typical Area 200m x 200m Detail

Bare earth and small rubble mounds with sparse grassland providing habitats for invertibrates

Open grassland with scattered scrub on upper areas of Broadness

Grass pathway and woodland ecotone to edges of Cemex plant

4.12 Constructed Wetlands

DESIGN PRINCIPLES

- The constructed reedbed area is a key feature of the drainage strategy for Broadness Marsh and the Resort as a whole.
- The proposed reedbeds will provide attenuation, and a filtration and cleaning function to run-off from the northern part of Gate 1.
- A new ditch running through the eastern side of the reedbed will provide an ecological connection between Broadness Creek and Botany Marsh, allowing for movement of protected species using these habitats such as water voles.
- The main pathway adjacent to the reedbeds will form part of the proposed England Coast Path alignment.
- Further nature trails will provide more controlled access into the open mosaic habitat to the east of this feature.
- The embankment with scrub planting and hedgerows will provide a strong and secure edge to the Resort.
- Due to the overhead power lines, there is limited tree planting proposed within the zone adjacent to the Resort, but thorny scrub and open mosaic habitats will be present.

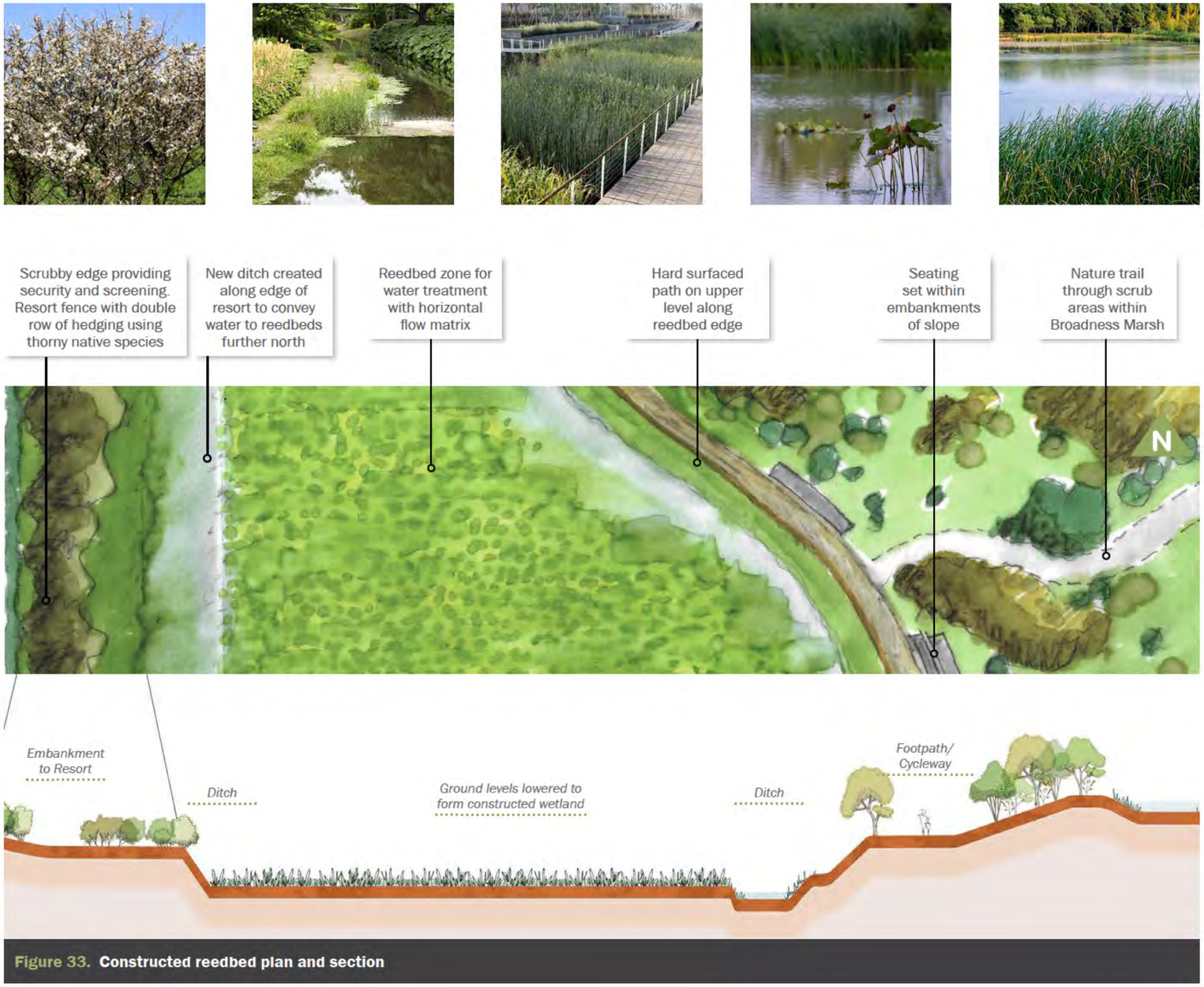


Figure 33. **Constructed reedbed plan and section**

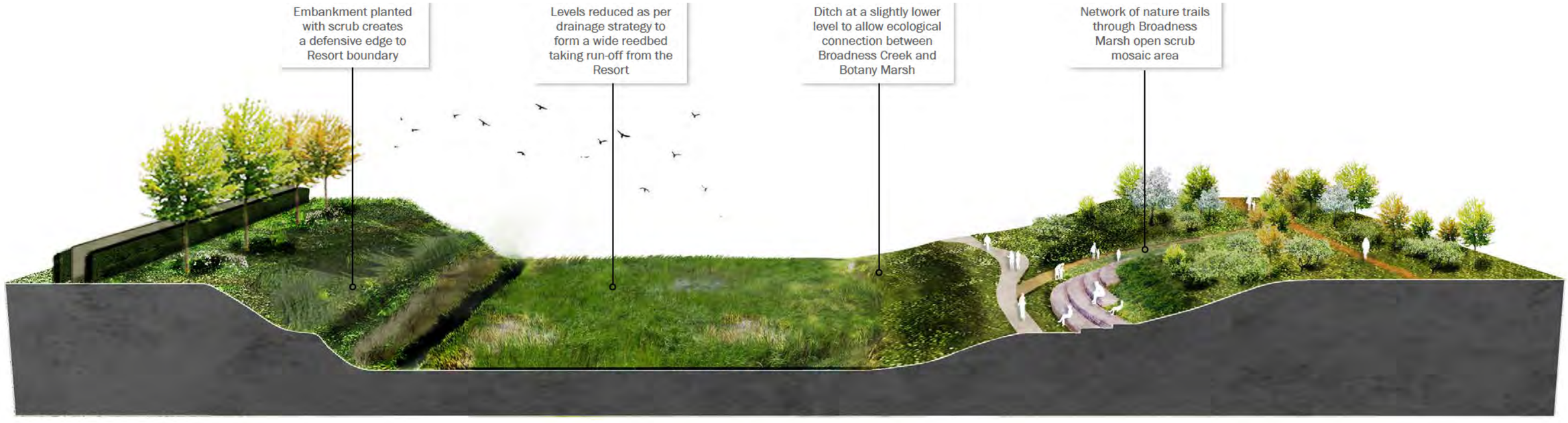


Figure 34. **Constructed reedbed concept**

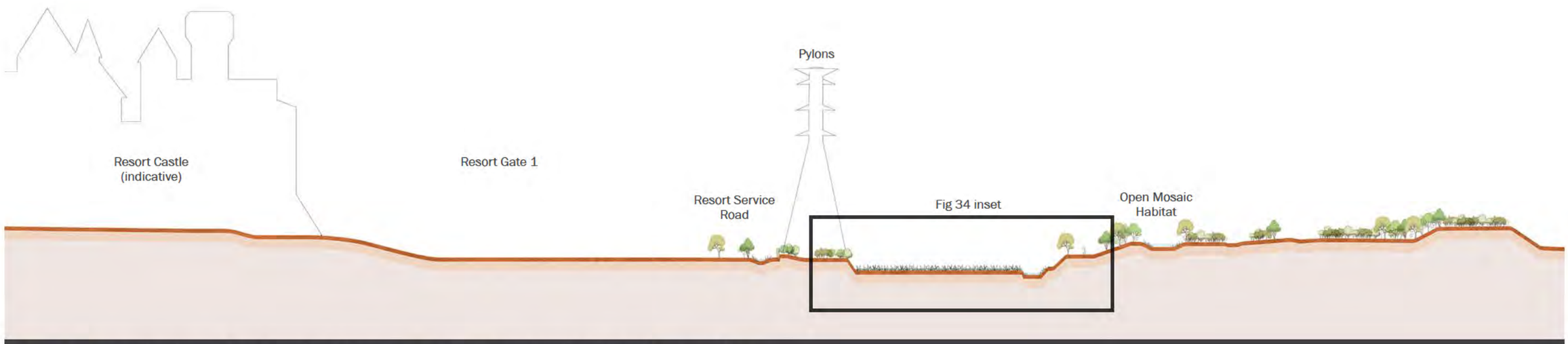


Figure 35. **Long section through Resort, constructed reedbeds and landfill open mosaic habitat at Broadness Marsh**

4.13 Salt Marsh Extension

DESIGN PRINCIPLES

- The objective is to increase the quality and amount of intertidal habitats with potential for nature conservation including salt marshes along the lower shoreline of the River Thames.
- The existing salt marsh fringing the Thames will be extended through the creation of naturalised 'ebayments' by excavating the adjacent river bank to the level just above the existing salt marsh.
- Scrape profiles within these ebayment areas will increase areas of salt marsh, small pools, rocks and shingle areas with sedges and grasses transitioning into open scrub mosaic vegetation.
- The new intertidal habitat will allow for tidal exchange, and the salt marsh will colonise naturally with the inflow of silts forming a substrate for the plants that require minimal management and has the capacity to respond to dynamic estuarine change and allowance for climate change - as sea levels rise the extent of salt marsh can expand.
- On the upper slopes, the salt marsh will transition to open scrub mosaic vegetation approximately 4m in height with pockets of dense scrub/woodland (dominated by thorny species such as blackthorn, hawthorn, dogwood and sea buckthorn).
- A key objective is to maintain the feeling of seclusion and tranquillity - escape from the urban fabric whilst in the heart of an urban setting.
- The salt marsh level is set at approximately the mean high water spring, level with the adjacent existing salt marsh. The intention is that the salt marsh will naturally colonise with silts washed into the new creeks providing the growing medium.

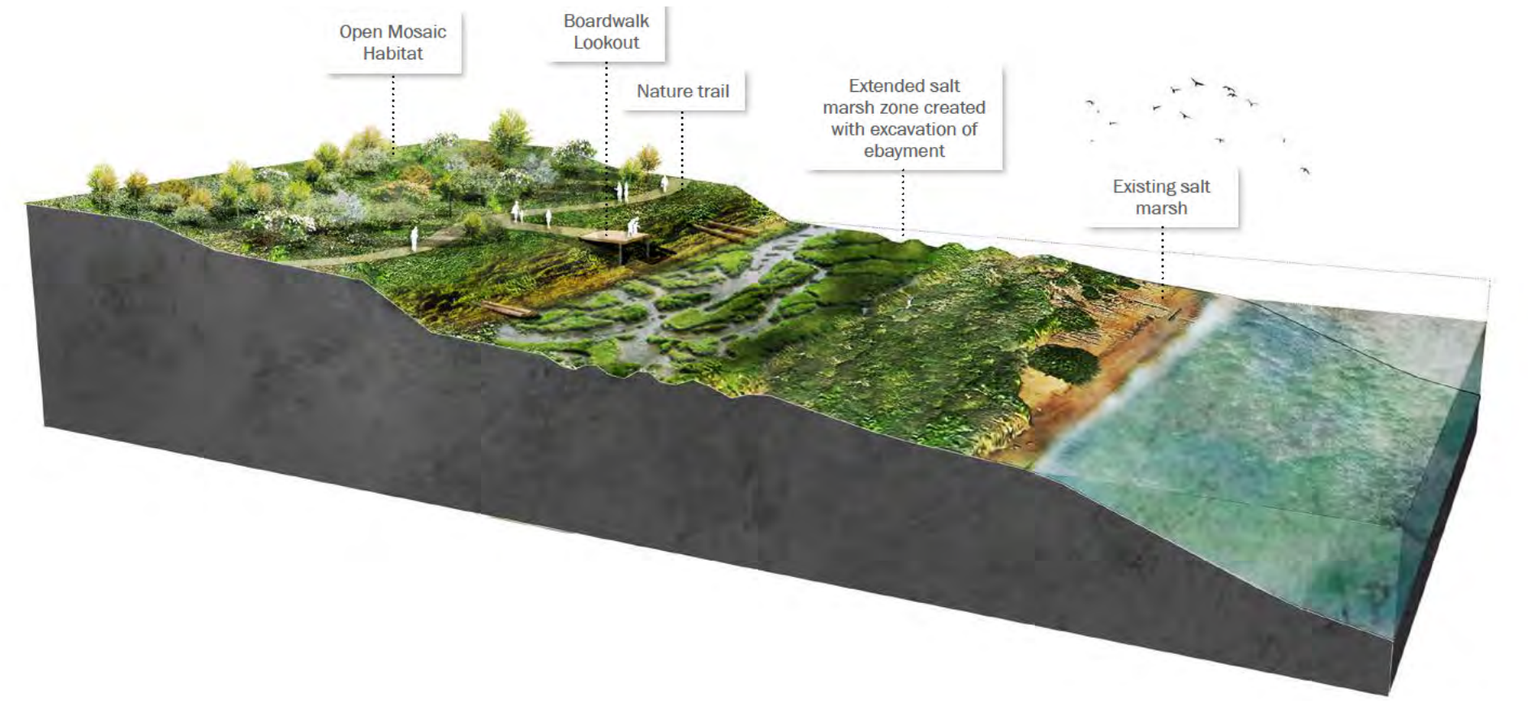


Figure 36. **Concept Section**

Existing lidar plan, showing existing salt marsh (inter-tidal zone level @ approx 3.5m) in dark blue, river bank terrace in green and higher ground open scrub mosaic in yellow. (NOTE: Detailed ground-truthing of levels is to be completed)

Lidar plan showing proposed ebayment sites to be excavated. These six sites will be reduced in level from 5.5m by circa 2.5m to approximately existing mean high water level and the inter-tidal zone. The proposals will create approximately 2ha of new salt marsh habitat.

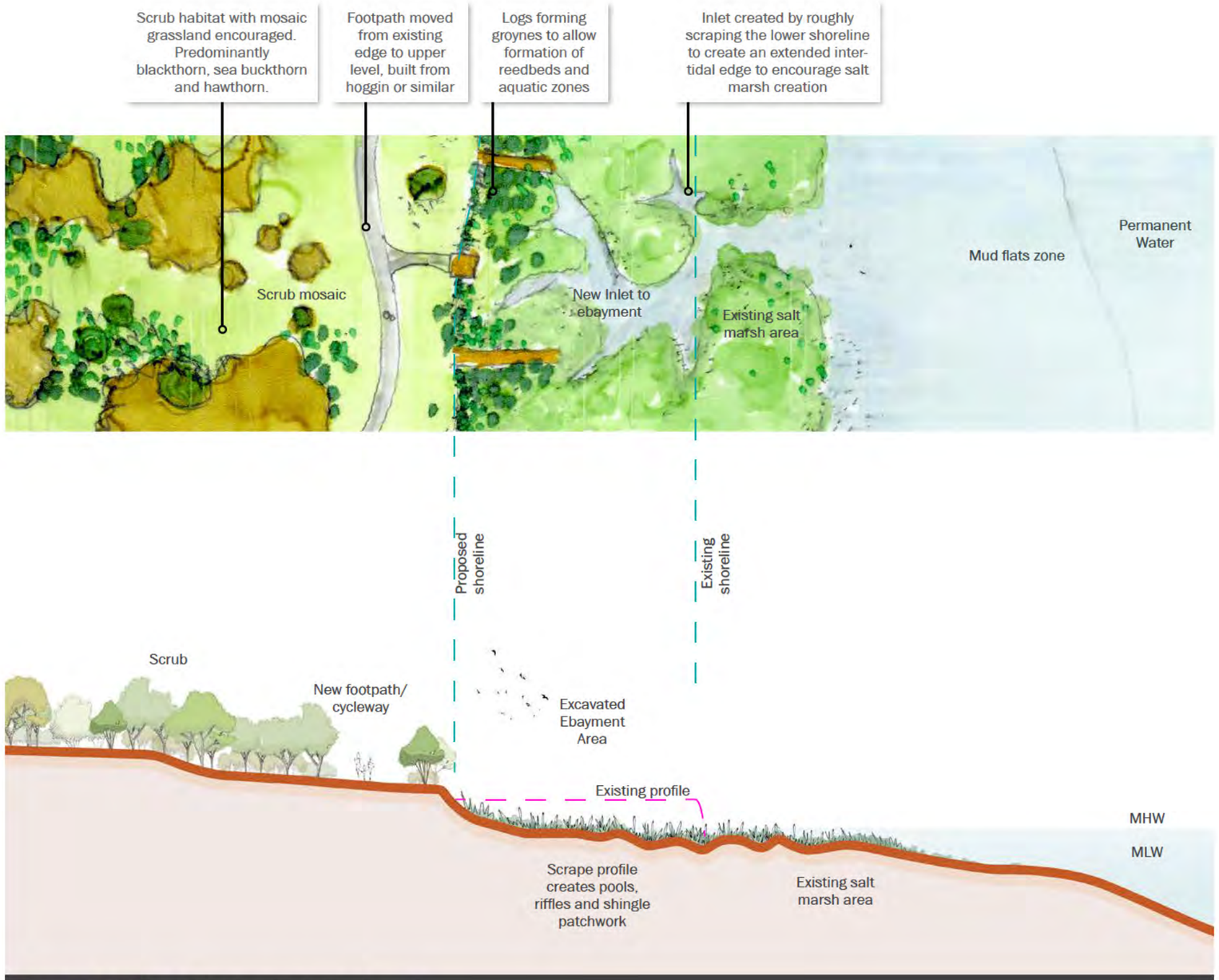


Figure 37. Salt Marsh Extension - Illustrative Concept

4.14 Botany Marsh Habitat Enhancements

DESIGN PRINCIPLES

- The overarching habitat enhancement objective is to improve the condition and diversity of existing habitats, create a wetter environment to the western side and an enhanced open wet marsh mosaic character to the east side.
- An extensive network of new ditches will be formed with the primary intention of creating new habitats for water voles. Up to 2.5km of new wet ditches can be created to provide a high quality receptor environment.
- New ditches will be installed with pre-established coir tiles with sedges, rushes, reeds on the aquatic shelf for instant cover;
- This habitat enhancement regime can be achieved through sensitive management initiatives such as scrub removal and creation of small pools and areas of open water and shingle beaches.
- Wet woodland and scrub dominated by alder that can thrive in waterlogged areas alongside the resort edge will provide additional vertical screening and a natural security.
- The proposals also have the potential to support a wider variety of birds, invertebrates and plant species including a number of rare species whose seed bank will be stored and transplanted to new landscape areas to colonise naturally.
- Controlled public access will be provided, with a network of pathways and board-walks.
- Facilities will include interpretation boards explaining the ecological initiatives, welcome signage and directional route finding signage, a bird hide and seating areas.
- Maintain feeling of seclusion and tranquillity - escape from the urban fabric whilst in the heart of an urban setting.

1. Proposed extended wetland area with extensive ditch network to provide water vole habitat
2. Playing field site retained and managed to avoid impacts on divided sedge habitats
3. Perimeter ditch to provide hydraulic connection to ditches cut off at the resort, and provide a secure edge to the Resort
4. Areas of dense woodland and scrub retained to provide a visual and artificial lighting buffer to the Resort
5. Open scrub mosaic habitats to be maintained in a similar manner to Broadness Marsh, with wildflower meadow grasslands as well as scrapes and bare earth areas
6. Existing public right of way retained and enhanced for use as a shared footway/cycleway
7. Pedestrian access points removed from Manor Way for safety reasons. A new access is proposed to south (see ref.8)
8. New access point providing more direct and convenient access to the marshes for local residents and workers
9. Proposed bird hide/observation tower
10. Proposed board-walks provide controlled access through the wetland areas

Figure 38. Botany Marsh

Example bird hide tower

Extensive habitat created suitable for water voles

Board-walk route providing access to wetland areas

High quality signage and welcoming entrance

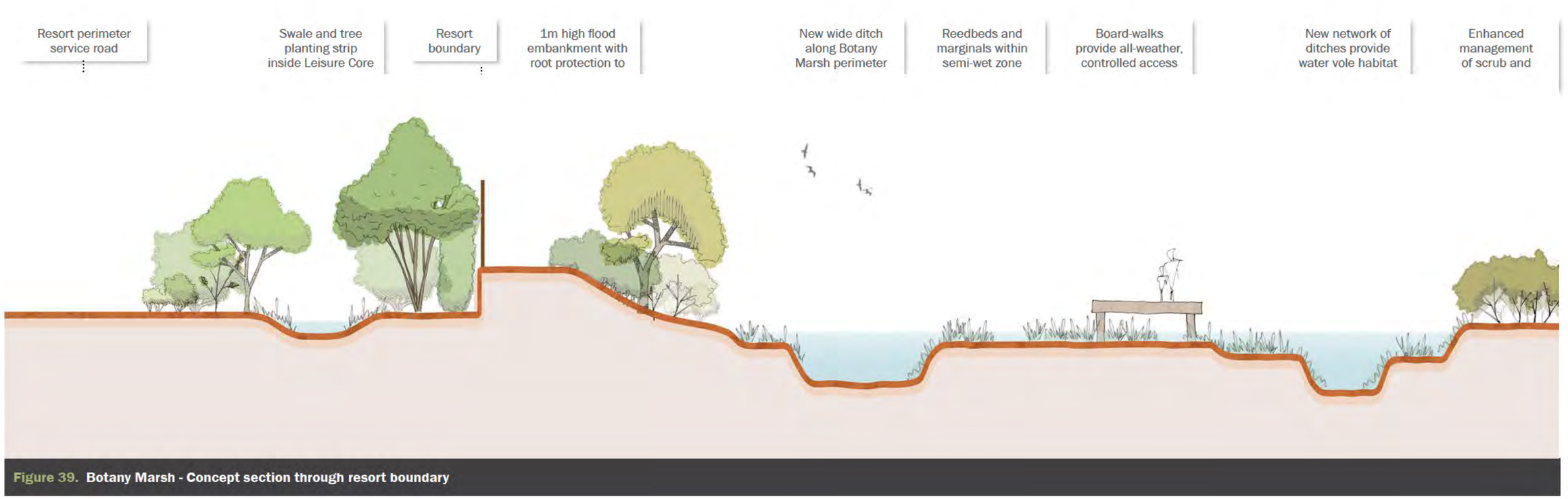


Figure 39. Botany Marsh - Concept section through resort boundary

4.15 London Resort Arrival Area Overview

DESIGN PRINCIPLES

- Planting Diversity: Perennial, meadow, tree, shrub and hedge planting will provide vibrant and striking combinations of colour, texture and scent that also serve to encourage wildlife and enhance biodiversity throughout the arrival landscape.
- Connected Waterscapes: Water features and rain gardens, designed as natural systems as part of a sustainable drainage strategy (SuDS), will connect through the circulation spaces and form focal points between the arrival space attractions. These features will provide opportunity for visitor interaction with water as well as habitat 'stepping-stones'.
- Natural Way-finding: Circulation will be assisted by directional planting, the flow of water and focal trees as well as nature inspired art in the form of flying birds overhead. Multi-stemmed tree specimens will create destination points along the route and features trees used as natural focal points and centre pieces to spaces.
- Natural Security: The Resort boundaries will be fenced but will also be part of a natural security system of swales, ditches, reedbeds and double layered hedgerows with trees to create a green (and generally wet) transition zone between the secure fence and the marshes beyond. This green edge will soften views of the resort externally and provide a buffer to noise and light disturbance within the adjacent marsh areas.

1. Coliseum
2. Conferention Centre
3. London Resort Hotel
4. The Boulevard
5. The Water Park
6. People Mover Drop-off
7. Spanish Steps
8. The London Resort Plaza
9. Hotel 3
10. London Resort Terminal T1

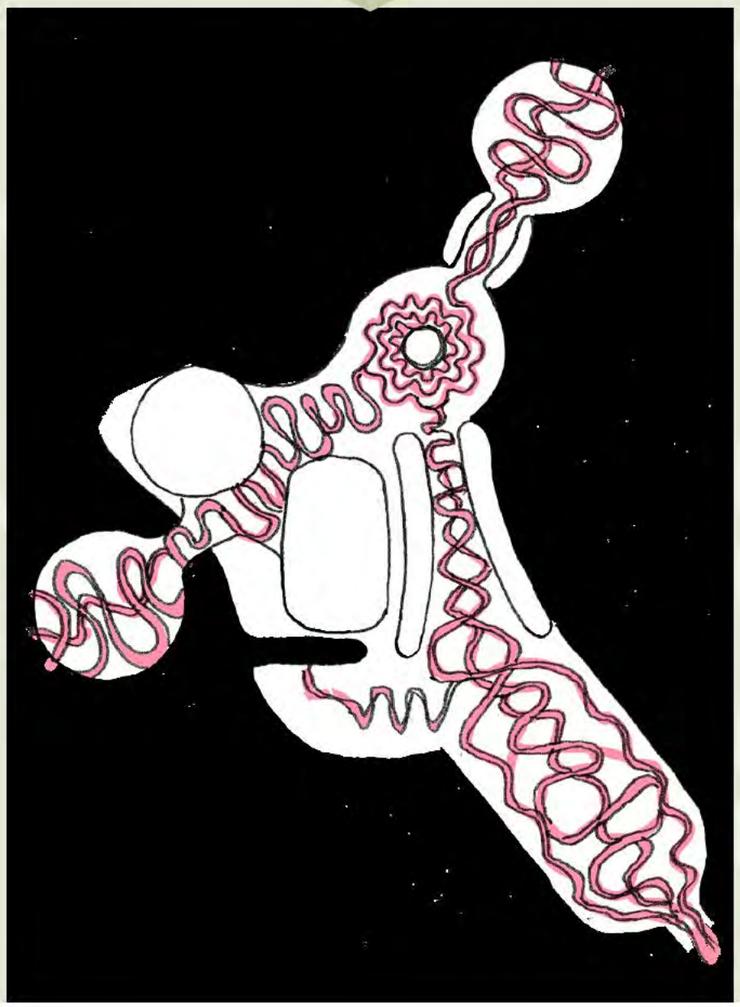
Figure 40. London Resort Arrival Area Overview

Paving Layer: Movement Flows

The paving layer is inspired by the flowing waterscapes of the Project Site

Looser flow patterning encourages movement through spaces

Formal patterning encourages dwelling

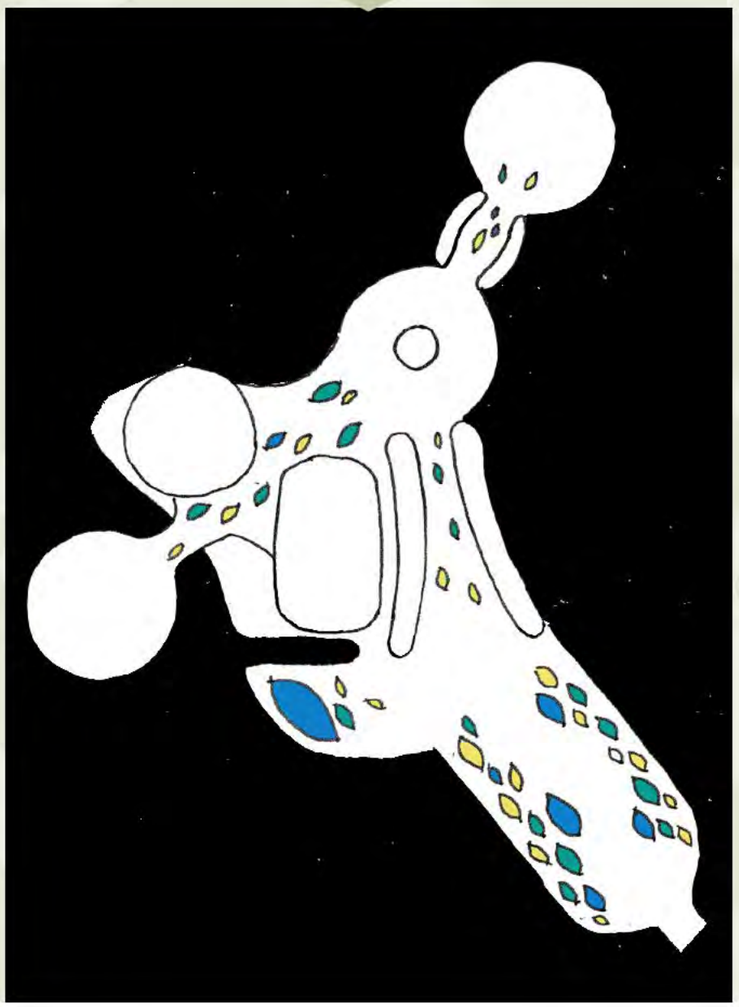


Planting Layer: Formation of Islet

Islets are formed in the spaces between the flow of people

Islets vary in type - some are raised planting beds with edge seating, some are lowered rain gardens, others are meadows or mounded lawns

Water features integrated into the public realm as shallow mirror pools or marsh inspired features

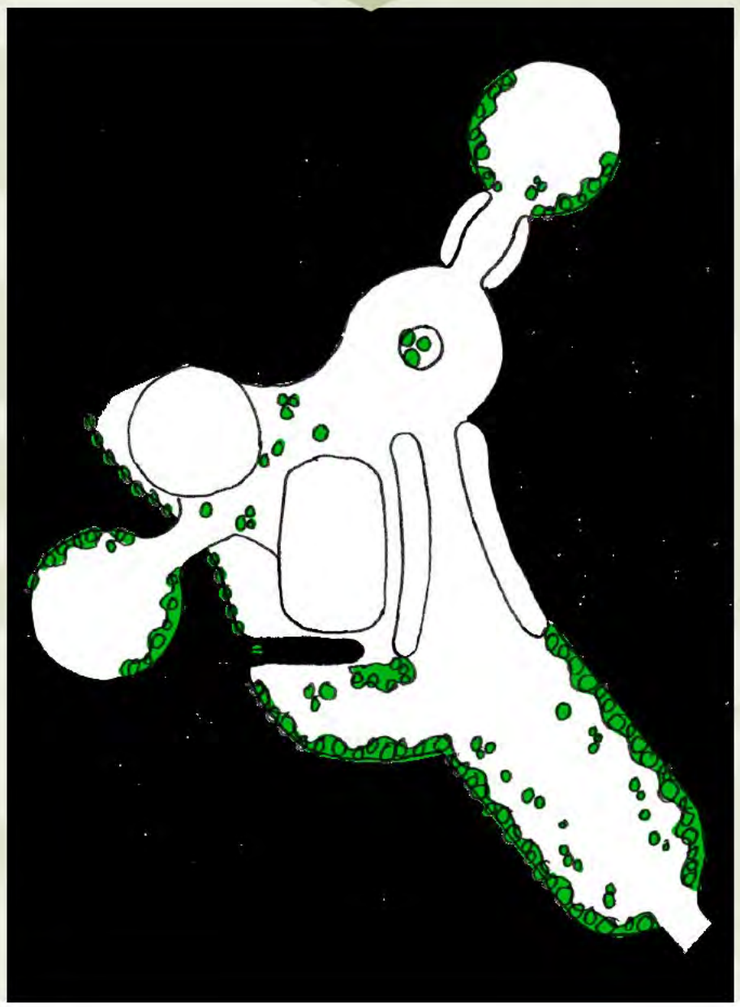


Tree Layer: Structural Elements

Tree planting defines edges, provides enclosure and shelter, and screens views

Trees planted in informal groupings, in a variety of sizes and stocks

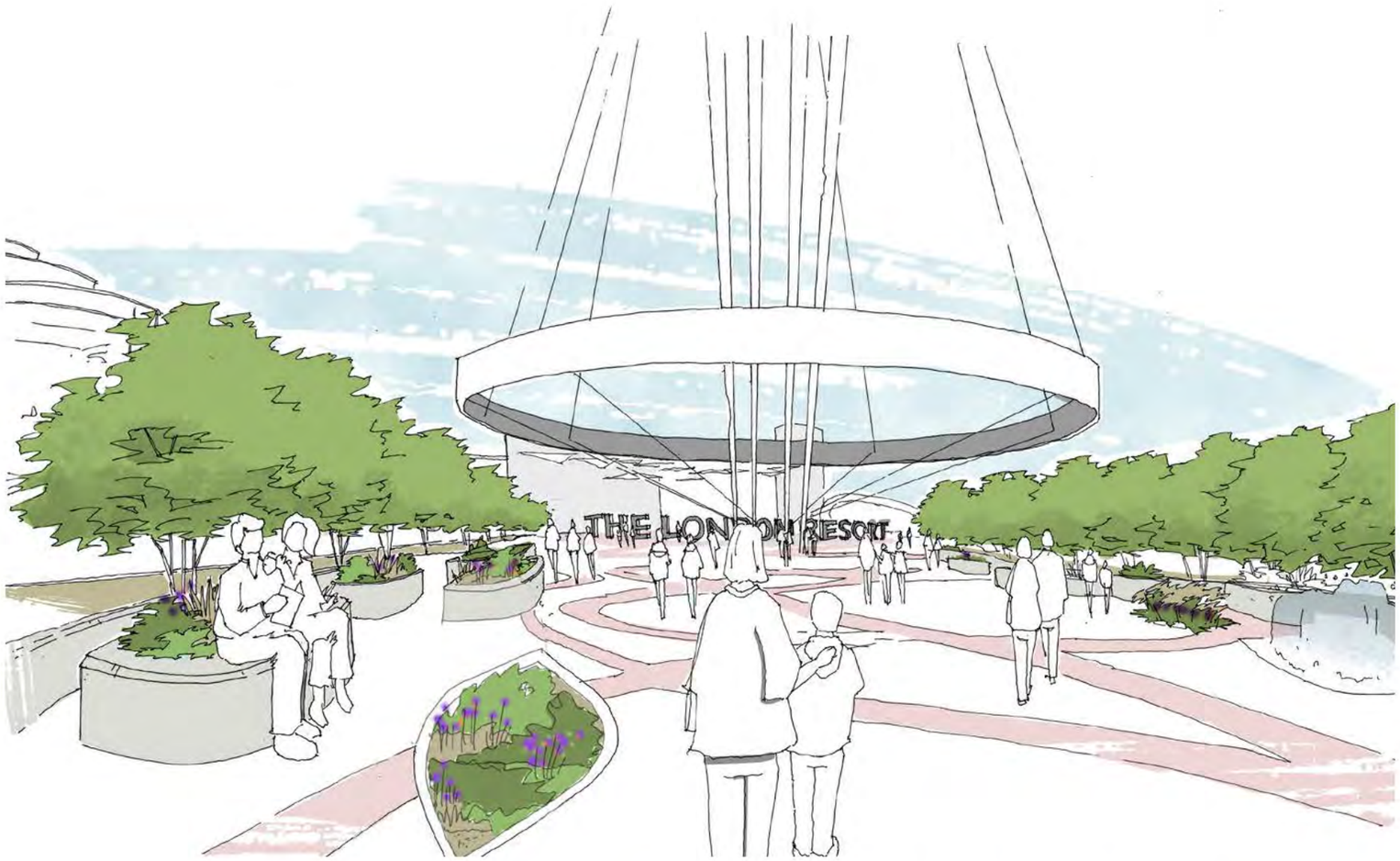
Native species to be used for background planting, with ornamentals and exotics used for highlights



4.16 The London Resort Plaza

DESIGN PRINCIPLES

- The London Resort Plaza is a large, raised podium space that will create an exciting sense of arrival to the Resort. Focal features will draw visitors through the space to the ticketed entrance gates.
- The landscape is inspired by the wetland habitats and fluvial patterns found naturally in the area. Flowing lines will create a dynamic paving pattern that breaks up the space and directs people on their journey.
- Islets of planting, lawns and rain gardens create a structure along the edges of the space, giving the option of a more adventurous route through to the entrance gates.
- Shade/shelter canopies formed by the feature bird sculptures will provide rest spots and meeting/gathering points within the plaza.
- Feature planting and specimen trees will continue to provide structure, focal points and a sense of place and direction as visitors move through the public realm to the Boulevard, Market Place, Conferention Centre and Coliseum.



View looking north at The London Resort Plaza - Flowing paving patterns integrate with islets of planting towards the edges of the space

Temporary water feature with bubblers

Water features will be created, with bubbler fountains/mist fountains to create temporary play spaces

Mist fountains can create an atmospheric and fun environment

Figure 41. **The London Resort Plaza Detail Plan**

1. Digital information/signage conceived as a suspended ring structure forming centrepiece
2. LONDON RESORT 3-D lettering sculpture
3. Access from Pilgrim's Way
4. Shallow, temporary water feature with mist and fountains
5. Edges defined with raised planters and structural tree planting using a variety of trees forms and sizes
6. Rain gardens
7. Flowing paving patterns

Planter islands break up edges to the plaza

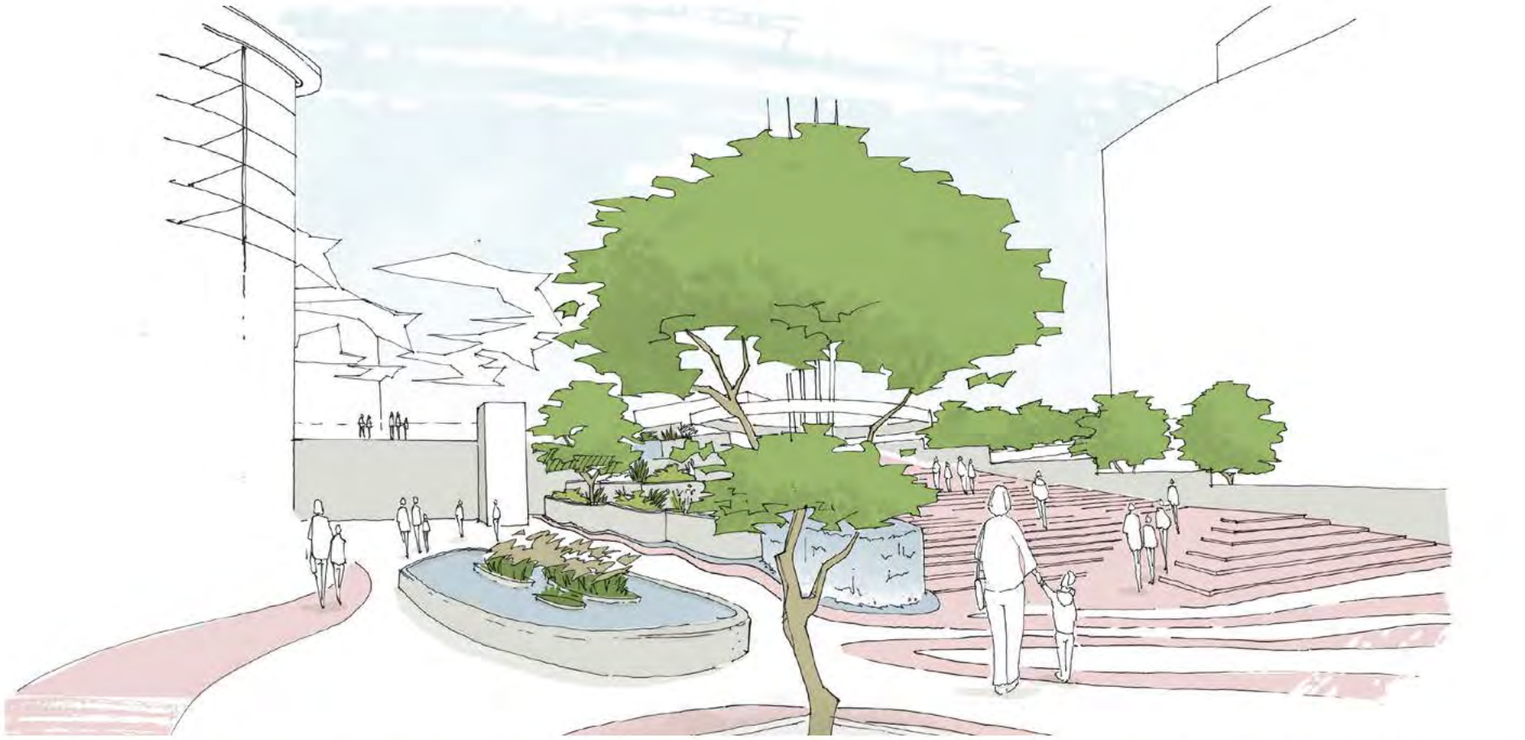
Rain garden planting, including structural grasses to provide year-round interest

Raised planters define the edges of the plaza space

4.17 Resort Drop-off, Arrival Plaza and Steps

DESIGN PRINCIPLES

- Creation of an exciting sense of arrival for visitors to the Resort, alighting from the people mover and approaching the London Resort Plaza via the feature steps, with integrated zig-zagging ramp creating a destination in itself.
- The landscape inspired by the wetland habitats and fluvial patterns found naturally in the area. Flowing lines will create a dynamic paving pattern that breaks up the large open space and directs people on their journey.
- A large water feature will be located centrally in the space. This will be designed to incorporate marshland style planting, expressed in a more formal manner with a hard edge but still maintaining the ecological value.
- Water will cascade down the feature steps and be collected at the bottom within the main water feature.
- The islets will break up the plaza space with a mixture of rain gardens, lawns and raised beds with shrub and herbaceous planting along with trees of differing sizes and forms to create a varied appearance.



View looking from the people-mover drop-off towards the feature plaza leading up to the Spanish Steps. A large water feature forms the backdrop to this space, conceived as a marshland in miniature with reeds and planting formed of curving

Embankments next to steps to have cascading water and tree planting integrated

Embankments next to steps to have cascading water and tree planting integrated

Water feature integrated with planting

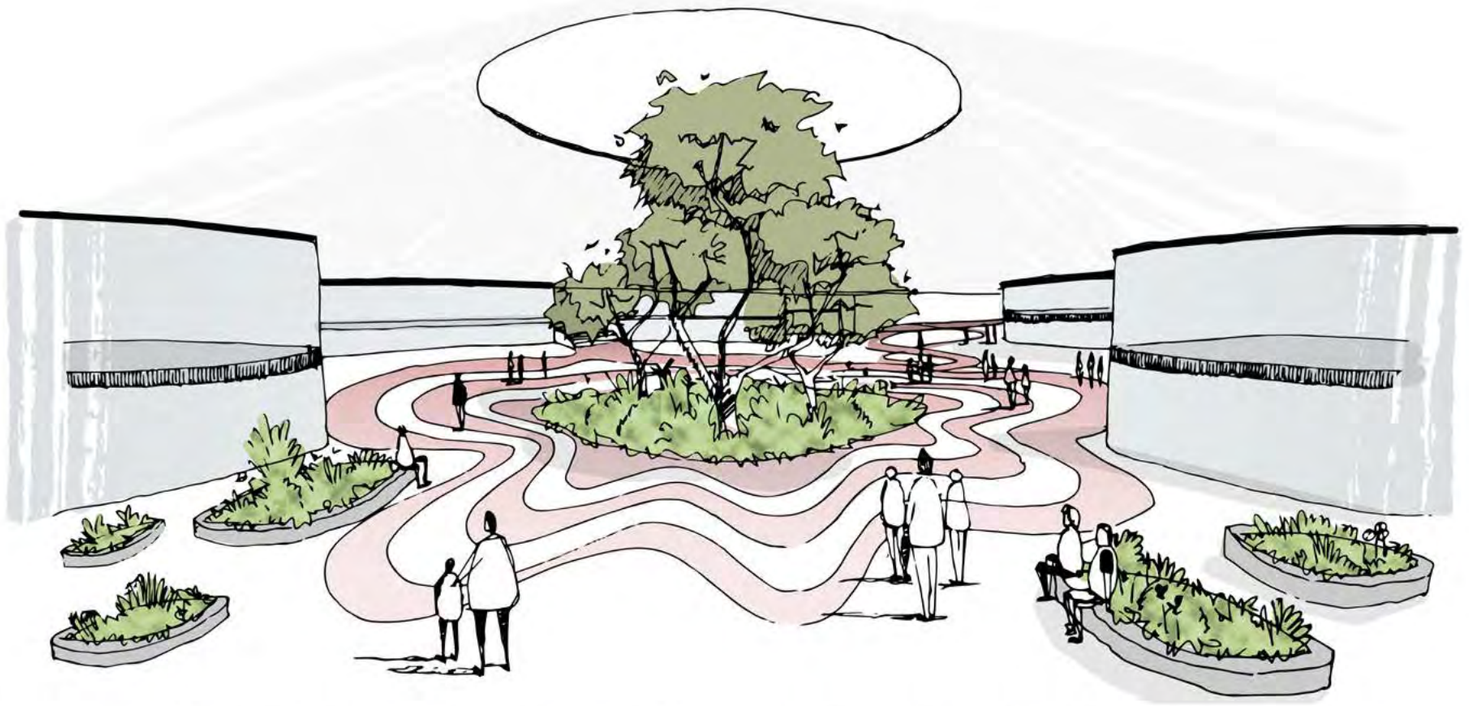
1. People mover drop-off
2. Marsh themed water feature
3. Planted embankment adjacent to steps
4. Water channel flowing down steps
5. Feature bird canopies
6. Spanish steps with zig-zagging ramp
7. Islets of planting and rain gardens
8. Swanscombe Channel diversion alongside Resort road and diverted primary public right of way (DS1)

Figure 42. The London Resort Plaza Dropoff and the Spanish Steps

4.18 Conferention, Coliseum and Node 2: The Market

DESIGN PRINCIPLES

- This area consists of higher-level plaza spaces that provide access to gates 1 and 2, and lower level plazas that provide access to the conferention, coliseum and water park.
- It is proposed that the same paving style is used as a unifying and consistent element, but is adapted to the requirements of each particular space.
- The architectural concept for the Central Hub is an elemental dome with occulus providing an indoor/outdoor connection. A formal paving pattern is created to integrate with the circular form of the building whilst still providing a subtle decorative interest to the space.
- Node 2: The Market has an opportunity to plant a group of three mature trees as a multi-stemmed natural centrepiece to the space.
- The spaces in the secondary plazas will follow the same approach to landscaping as in the London Resort Plaza with islets of planting and rain gardens responding to the geometry of the space while tree planting provides vertical interest and softening of built form.



Node 2: The Market - a formal, circular space providing visitors access to all parts of the resort. The oculus roof creates a focus on the central tree planting space

Seat walls defining planters

Flowing paving

Tree planted in the occulus. A mature feature tree, or cluster of three to be used

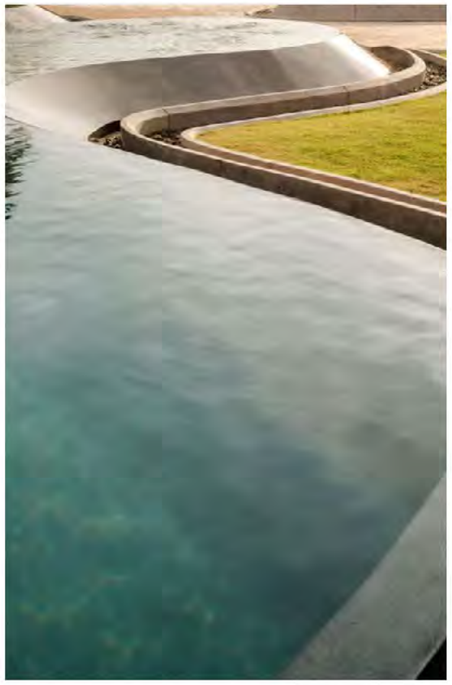
1. Coliseum
2. Node 2: The Market
3. Hotels
4. Upper plazas
5. The Water Park

Figure 43. **Resort Buildings and Plazas**

4.19 Hotel Landscapes

DESIGN PRINCIPLES

- **The four Resort hotels will offer a variety of experiences linked to the Resort attractions.**
- **The arrival landscape in each instance will require its own unique design whilst retaining the key themes of the Resort landscape. Sustainable water features and wet habitat will be incorporated as well as striking planting and imaginative lighting schemes, sensitive to the adjacent marsh habitat.**
- **The hotel grounds will generally have a gardenesque approach with the creation of intimate spaces for use as 'outdoor rooms', lawns for garden games and functions in the summer months and courtyards and terraces for outdoor dining.**
- **The hotels will also have extensive green roofs incorporating terraces for use by customers.**



Opportunity for water features with flowing design style at drop-off locations

Opportunity for courtyard gardens in traditional English country style

Green building façades

Figure 44. Hotel 2 (north) and Hotel 4 (south)

Formal gardens provide contrast

Drop-off spaces with formal organic design approach

Continuation of flowing theme to create a hotel street plaza

Landscaped public realm features to create a transition between the public street and private hotel areas

Notes for Figures 44, 45 and 46

1. Marsh themed water feature
2. Garden courts with views of Black Duck Marsh
3. Hotel gardens
4. Drop-off spaces
5. Boulevard and feature bird canopy
6. Main river
7. Pavilion building and spill out to gardens

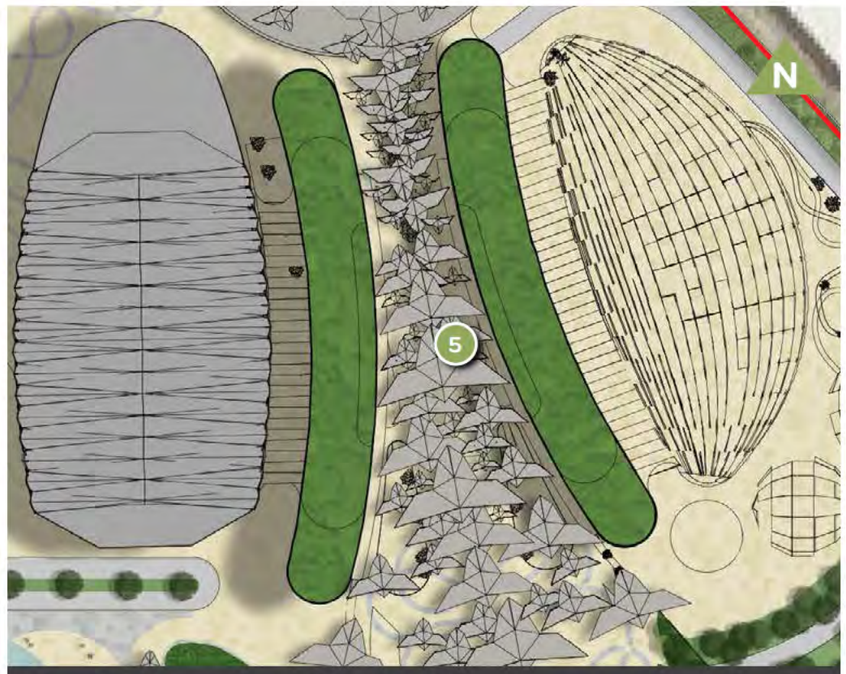


Figure 45. The London Resort Hotel - Hotel 1

Figure 46. Hotel 3

4.20 London Resort Passenger Terminal (T1)

DESIGN PRINCIPLES

- The outdoor spaces will be primarily designed to aid circulation and access, with landscaped entry and exit points leading visitors through the space from the London Road and on to the Pilgrim's Way.
- Landscaped spaces for staff and visitors staying for longer periods will comprise a series of planted outdoor rooms to facilitate coffee and lunch breaks in fine weather.
- The Pilgrim's Way will be transformed from an enclosed and uninviting path to a more open promenade defined with a new flint wall that allows views down to the peninsula below. Viewing platforms will provide welcome rest stops along the route and tree planting will replace the existing dead elm and overgrown hedgerow.
- Further pedestrian enhancements will be implemented along the upper stretches of Galley Hill Road where the existing broken concrete faced flint wall along the northern edge of the chalk spine will be repaired and enhanced to celebrate the flint.
- Viewing point extensions along the wall will allow opportunities for panoramic views across the resort and bus shelter facilities will be upgraded. The brick wall along the southern edge with Sports Ground Pit will be repaired.
- The interchange area at the lower level includes multi-storey car parking arranged across three buildings and a surface level coach parking area. There is potential to provide green façades to the parking structures using climbing plants. Tree planting will be integrated around the coach parking area at ground level to break up the hard-surfaced areas and provide vertical screening.
- The chalk cliff on which Galley Hill Road is elevated will be cleaned and managed to remain as an exposed chalk face, proving a striking northern backdrop to the resort, a guide to orientation and a strong sense of place. It is envisaged that the chalk could be used as a 'display' surface for night imagery and occasional light and sound shows.

Attractive planting in beds and green walls at key entrance locations can provide a high quality arrival experience

Blank façades to large buildings can have integrated cable systems to grow vines and climbing plants

Figure 47. Illustrative Section through Craylands Lane Pit and Passenger Terminal T1

1. **The London Resort Passenger Terminal (T1): Covered walkway at upper level giving access to The London Resort Plaza from multi-storey car parks**

2. **Tree planting in hard landscape coach parking area to have a formal approach and utilise crate systems to protect root zones**

3. **Areas around the highways infrastructure to be planted with scattered trees and a wildflower mix of grasses and calcareous species**

4. **Multi-storey car parks to be well landscaped at ground level with mixed beds adjacent to the buildings, and vertical greening to the façades**

5. **Chalk cliff to be cleaned and remain exposed as a unique backdrop to the space**

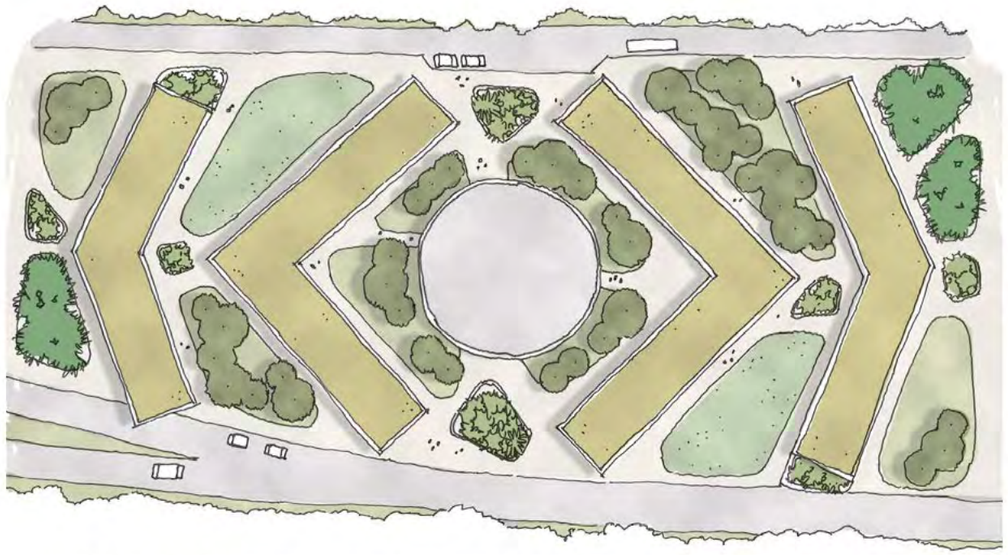
6. **Sports Ground Pit with access road, energy centre and associated plant will have integrated planting.**

Figure 48. **London Resort Passenger Terminal (T1)**

4.21 Staff Accommodation, London Resort Academy and Visitor Centre

DESIGN PRINCIPLES

- The staff accommodation area will have a unique character within its setting in the Craylands Lane Pit. An organic design language will be employed in the spaces between the residences to create soft and friendly 'spill out' zones and a series of more active spaces.
- The chalk walls and vegetated edges provide a sense of enclosure and escape from the busy Resort and surrounding urban areas. The perimeter of the pit is to be planted in native, chalk loving species to provide a green curtain of vegetation around the buildings.
- Islands of planting will comprise four typologies: naturalistic beds with ornamental grasses, perennials and multi-stem trees; mounded lawns; pictorial meadow planting; and rain gardens.
- A web of circulatory routes is provided to allow for informal walks around the neighbourhood.
- The Visitor Centre will sit on the London Road at the top of the Pilgrim's Way where, from the upper levels, panoramic views will be available across the resort below.
- The adjacent London Resort Academy will have a landscaped frontage to the London Road and raised beds creating a sense of separation from the main highway.



Concept sketch of Staff Accommodation gardens showing mixture of lawns, meadow grass areas, planter islands and tree planting

Plaza spaces will be actively used, with outdoor seating and gathering spaces spilling out of the pavilions

Other areas will have quieter seating spaces amongst naturalistic grassland and shrub planting in drifts with integrated seating

Mounded grass lawns allow for flexible use, rest and relaxation

1. Pavilion buildings housing facilities for the staff community, including games and sports, shopping and social spaces

2. Brown roofs are proposed using the chalk topsoil from the quarry to create a distinctive wildflower mix

3. Edges of the pit to be planted with birch dominated woodland along with feature trees in the central islets

4. Organic landscaped islets are a mixture of lawns, raised beds with shrub and herbaceous plants and ornamental grasses, rain gardens and pictorial meadows, forming a varied and attractive garden space for residents to enjoy

5. New training facility with raised beds providing a buffer to London Road

6. Visitor Centre located on the top of Pilgrim's Way with welcoming plaza space

7. Viewing platform on Pilgrim's Way

Opportunity for a viewing platform on Pilgrim's Way or London Road to overlook the Resort

Figure 49. Staff Accommodation Area

4.22 Back of House Gate 1 Area

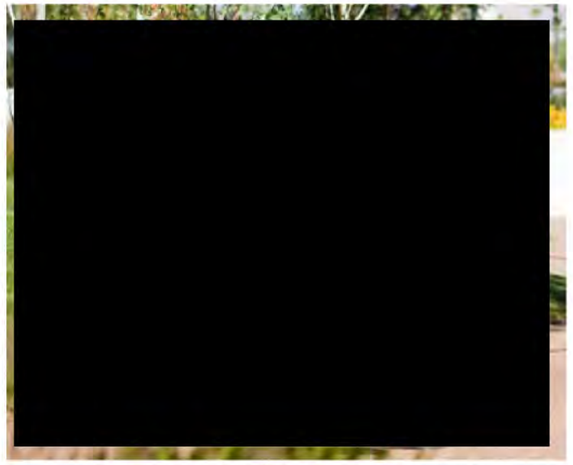
DESIGN PRINCIPLES

- The Back of House areas will provide attractive space for employees to enjoy during breaks and to gather socially.
- The flowing theme of the Resort Leisure Core is continued with inter-woven pathways, earth sculpting and access roads forming a variety of spaces between the buildings.
- Areas that will have sunlight during the day and evening will be identified as the key open plazas and raised lawns for open air dining and more informal relaxing during breaks.
- Opportunity to include activities such as an outdoor gym or informal/flexible space for yoga and fitness classes.
- A water feature will form the main focus of the pavilion building.

Concept sketch of back of house landscape

Plaza spaces will be actively used, with outdoor seating and gathering spaces spilling out of the pavilions

Walking and cycling routes to office buildings and warehouse through a parkland landscape



Mounded lawns provide flexible open spaces for employees to relax on breaks

Plaza spaces for flexible use at events or informal usage

Structured planting with a simple colour palette provides a green backdrop

Opportunity to create ecological brown roof with calcareous wildflowers

Naturalistic planting beds

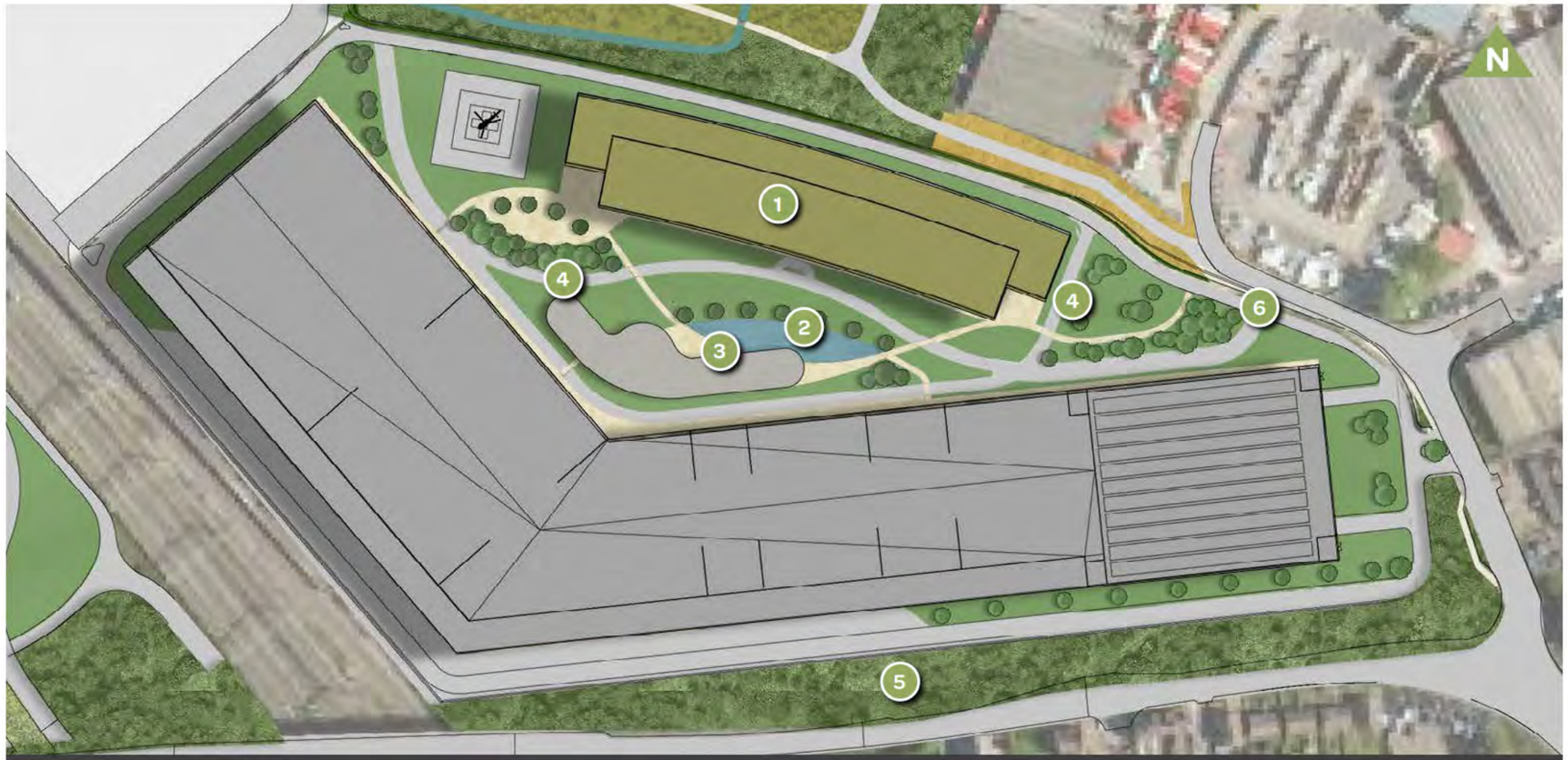


Figure 50. **Gate 1 Back of House**

1. **Office building incorporating a brown roof and allowed to establish naturally based on the imported substrate and seed bank from the existing area**
2. **Water feature surrounding pavilion building**
3. **Flexible plaza spaces incorporating canopies for shelter and informal seating**
4. **Lawn spaces and planting areas with herbaceous beds, shrub planting and feature trees**
5. **Woodland planting buffer to Galley Hill Road to form an ecological connection for dormice to move to areas to the south**
6. **Potential to create pedestrian and cycle connection into Botany Marsh**

4.23 Central Area and Ebbsfleet International Terminal (T2)

DESIGN PRINCIPLES

- The Resort Access Road and people mover route will be landscaped with swathes of trees, landform sculpture and public art to build suspense and create a sense of an arrival journey.
- River Ebbsfleet will run parallel to the mostly southerly section of the new Resort Access Road as it runs north from the double roundabout junction. There is opportunity to enhance the river corridor along this stretch of the route, managing the wet woodland, opening up the river channel and improving the bank profile to encourage a range of species.
- Attenuation basins proposed as part of the highways drainage scheme will be designed to include permanently wet ponds and reedbed systems to enhance biodiversity and visual amenity.
- The landscape surrounding Ebbsfleet International Station will be redesigned to accommodate the new London Resort Arrivals Plaza and people mover interchange.

1. Bamber Pit
2. Ebbsfleet International (Terminal T2)
3. Surface and multi-storey car parks
4. Future site of Ebbsfleet Central District
5. Redesigned roundabouts
6. River Ebbsfleet
7. Resort Access Road
8. People Mover Route and Pedestrian Path

Figure 51. **Central Ebbsfleet Areas**

4.24 Sports Ground Pit and Bamber Pit

DESIGN PRINCIPLES

- Bamber Pit will become a nature reserve with a new water body and a nature trail accessed from the existing public right of way. Scrub management will increase biodiversity and maximise the potential of the existing habitats.
- Sports Ground Pit will become an infrastructure hub and an educational destination with the energy centre as its focus. The landscape setting to these features will retain the natural character of the chalk pit, managed to maximise biodiversity whilst maintaining as much of the tree layer as possible to provide a visual screen for local residents looking down on the pit.

1. Back of House/Utilities buildings
2. Potential walkway access to Swanscombe Station
3. Tunnels through chalk spine with potential for scrub/woodland habitat inter-connectivity
4. Energy Centre
5. New water body to replace the one lost from the highway construction
6. Nature Trail with potential to use gabions for slope stabilisation
7. People mover
8. Public Right of Way
9. Area Managed as Open Mosaic Habitat

Figure 52. **Sports Ground Pit and Bamber Pit Areas**

4.25 A2 (T) Junction

1. Roundabouts will be re-configured with the creation of a vibrantly planted gateway landscape incorporating dual branding for Ebbsfleet and The London Resort

2. No landscape works proposed along the A2. Upgrades carried out by Highways England will tie in at the A2 roundabout junction

3. Attenuation basins proposed as part of the highways drainage scheme will be designed to include permanently wet ponds and reed bed systems to enhance biodiversity and visual amenity and introduce the fluvial theme

4. Tree planting and pictorial meadow verge planting along the Resort Access Road verges

Figure 54. **A2 Corridor**

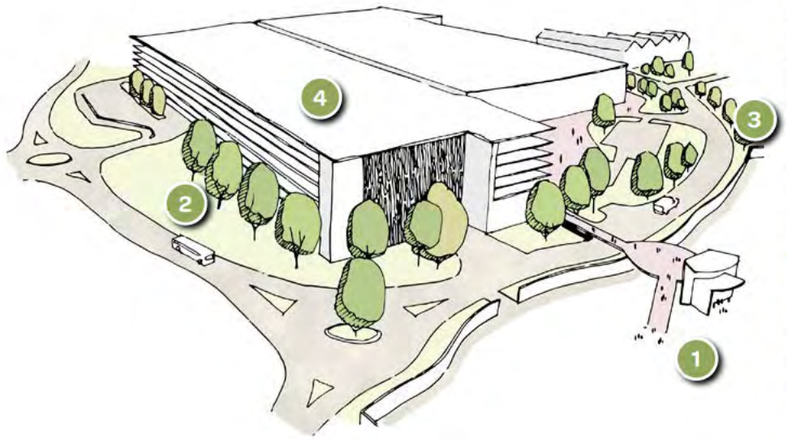
Figure 53. **A2 Corridor (no landscape proposals)**

4.26 The London Resort Tilbury Terminal

DESIGN PRINCIPLES

- The Tilbury Terminal will act as a key gateway for visitors arriving from the north side of the River Thames in Thurrock, and will include a new multi-storey car park with a brown roof, and a walkway to transfer on foot directly to the ferry concourse.
- An enhanced arrival experience at the ferry port terminal will include public realm improvements with tree planting, outdoor seating and water feature set around the waiting areas designed with a consistent landscape concept to the Resort to create an early sense of arrival and excitement.
- Verges along the approaches on Tilbury Fort Road and Tilbury Docks Road will be enhanced with avenue trees and swathes of wildflower meadow and bulb planting to create a clear sense of arrival.
- A connection to the existing public right of way to the east of the site with a link to Tilbury Fort will be incorporated.

1. Ferry terminal plaza with opportunities for planting areas, enhanced paving, water feature and seating
2. Wildflower verge planting with trees
3. Public right of way connection
4. Multi-storey car park with brown roof



Use of planted panels on key façades

Figure 55. The London Resort Tilbury Terminal

4.27 Resort Gates High Level Principles

4.27.1 Gates 1 and 2 are designed by specialist theme park designers and include the themed zones, rides and attractions laid out within a landscaped parkland setting.

4.27.2 This provides a fantastic opportunity for the landscape setting within the resort to have an ecologically driven approach to contribute to the overall green infrastructure objectives for the proposed development, and to provide a contextual and ecologically-rich area. These are set out in the principles box below.

DESIGN PRINCIPLES

- **Resort Boundaries: A green boundary is formed of a double layered hedgerow with trees and internal fence. A tree planting buffer zone is to be provided wherever space allows within the perimeter area. This green edge will soften views of the Resort externally and provide a buffer to noise and light disturbance within the adjacent marsh areas.**
- **Perimeter Swale: A sustainable drainage strategy for the Resort (document reference: ES Chapter 17) includes a swale that runs along the perimeter and conveys surface water run-off into the constructed wetlands and marshes once filtered for pollutants.**
- **Connected Waterscapes: Within the Resort a number of water features are proposed, connecting through the circulation spaces and forming features between different theme areas. There is a potential that these features can provide ecological connections, either through physical connectivity or as habitat 'stepping-stones'.**
- **Water features can be designed as natural systems that can work in harmony with an on-site sustainable drainage strategy, and include reedbed habitats and marginal zones.**
- **Planting Diversity: There are extensive areas of planting within the resort that can provide the 'wow' factor whilst still having biodiversity benefits. For example, it is proposed that perennial planting be employed to provide vibrant and beautiful combinations of flowers and colours that also serves to encourage wildlife and biodiversity.**

Figure 56. Gate 1 Landscape Design Principles

1. Woodland edge planting provides a green buffer to marshes to screen visually and mitigate noise and light spill

2. Opportunities for connected waterscapes within the Resort linking to marsh landscapes

3. Opportunities for landscaped areas planted with a naturalistic and diverse palette of native species to encourage biodiversity

4. Perimeter swale to filter and treat stormwater run-off before discharging into marsh landscapes

Figure 57. Gate 2 Landscape Design Principles

4.28 Planting Typologies

4.28.1 The main landscaping objectives are to provide a planting scheme that is both attractive and vibrant, evoking the expanse of the peninsula and local landscape context. This allows for the reflection of the surrounding habitats and plant assemblages on The Kent Project Site.

4.28.2 The plaza pays homage to each type of surrounding natural planting typology – all habitat and planting types are reflected here, creating a landscape that brings together and acts as a gateway to the surrounding context. This design is curated by a planting palette which can be implemented in pockets throughout the space that have the key characteristics of both clipped evergreen planting and natural species. There are to be potentially five zones of planting in this area reflecting these existing habitats.

4.28.3 Each planting typology will have a structural element such as evergreen species to maintain seasonal interest through winter. These evergreen elements can be included within all typologies and tie all the palettes together throughout the Project Site.

DESIGN PRINCIPLES

- Assist in creating high-quality spaces that are attractive, vibrant and visually interesting throughout all seasons.
- Pay homage to the surrounding habitats and plant assemblages on site through a range planting typologies.
- Define spaces and assist in transitioning between formal and informal spaces.
- Ensure maximum biodiversity benefits are achieved through a diverse range of plant species that providing opportunities for the local fauna.
- Provide natural way-finding opportunities and define key spaces through landmark planting features.

Wildflower grassland containing species associated with chalk grassland, including quaking grass, meadow-oat grass, betony, scabious, bellflower, ox-eye daisy and bird's-foot trefoil.

Ornamental grasses structured to appear naturalistic through subtle tones and textures that reflect on the existing grassland habitats.

Naturalistic mixed perennial and grass 'field mixes', planted in broad drifts to form a vibrant 'pictorial meadow' effect.

Planted rain gardens featuring aquatic and marginal planting and damp wildflower and herbaceous mixes.

Structural planting including clipped evergreen shrubs to define areas and provide year round ground cover.

Informal Planting — Formal Planting

Wildflower Meadows

4.28.4 Wildflower grassland or ‘pictorial meadows’ will make up much of the informal open spaces creating an attractive and naturalistic character along road and pedestrian corridors. It will also assist in integrating formal spaces into the surrounding landscape as a buffer transitioning between areas of hard landscaping and the surrounding habitats.

4.28.5 The planting mix will be designed to include a wide variety of flora that is vibrant and attractive to both people and the local fauna. The combination of grasses and wildflowers will provide year-round seasonal interest whilst providing opportunities for wildlife connectivity and foraging.

4.28.6 Species associated with chalk and calcareous grassland will ensure the wildflower grassland is suitable for the site conditions. Example species include quaking grass, meadow-oat grass, betony, scabious, bellflower, ox-eye daisy and bird’s-foot trefoil.

Ornamental Grasses

4.28.7 Large pockets of ornamental grasses will be dispersed throughout formal open spaces creating a visually striking contrast between formal and informal. The mixture of ornamental grasses will be designed to create a diverse and visually interesting planting bed that appears naturalistic through an array of subtle tones and textures.

4.28.8 The ornamental grass typology pays homage to the existing grassland habitats located on the peninsula and will help visually connect the formal spaces to the informal areas of tussock grass.

4.28.9 Nodes of ornamental grasses located around the staff accommodation area have been designed to work in conjunction with other planting typologies that radiate from the centre, transitioning from formal to informal.

Rain Gardens and Reedbeds

4.28.10 Islets of rain garden and reedbeds have been integrated into hard landscaped areas with the arrival spaces. A combination of rain gardens and reedbeds will provide multifunctional benefits in contributing to the wider planting strategy whilst also contributing to the wider SuDS strategy as drainage features.

4.28.11 Rain gardens will provide opportunities for the infiltration of surface run-off water from the main arrival areas. Planting within the rain garden will work in conjunction with other planting typologies to create a high-quality, attractive spaces.

4.28.12 Pockets of reedbeds will be contained in raised planters providing informal seating opportunities. The introduction of reedbeds in formal areas will provide an intrinsic connection between the park and surrounding marshland habitats.

Naturalistic Mixed Perennials

4.28.13 Planting beds containing mixed perennials located in formal spaces will be structured to appear informal and naturalistic. The mix of perennials will create a vibrant, dynamic and visually striking display from spring through to autumn with plants flowering at different times.

4.28.14 Located along the peripheral of key spaces, the naturalistic mix of perennials will be supported with informal tree planting to create an organic, flowing edge that contains areas and provides opportunities of natural way-finding.

4.28.15 In additional to the visual and way-finding benefits, the flowering of plants will be attractive to a variety of pollinators and invertebrates contributing to increased biodiversity.

Structural Planting

4.28.16 Structural planting will be introduced within formal spaces alongside the aforementioned planting typologies. Contained within raised concrete planters, the planting beds will create raised islets providing informal opportunities for seating.

4.28.17 To create a diverse and interesting structure through all seasons, the plant species will be designed to include a mixture of clipped evergreen shrubs and flowering plants that are vibrant and attractive.

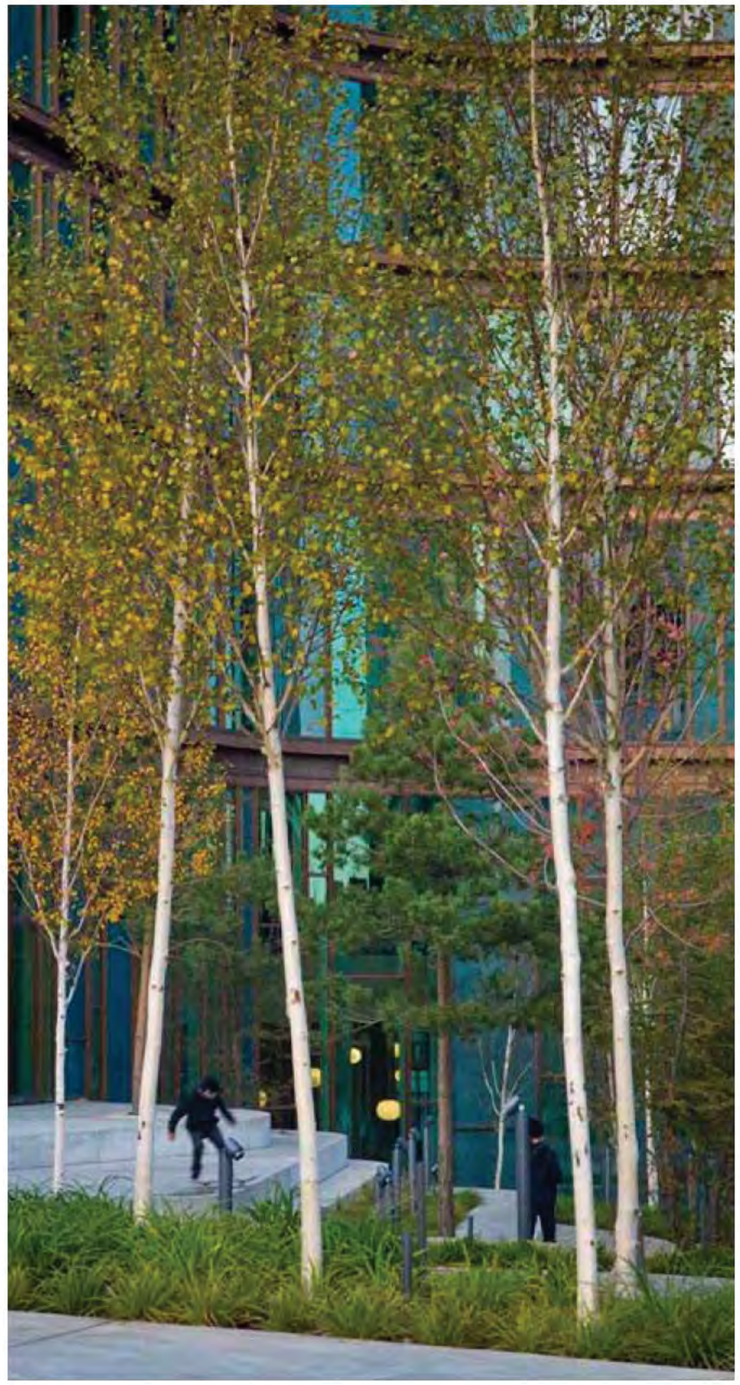
4.29 Tree Planting Approach

4.29.1 Trees will be used to reflect and enhance the open character of the surrounding estuarine habitat and character. Tree planting typologies have been used to help characterise and define key spaces and within formal spaces, act as natural way-finding and key landmarks.

In total, approximately six thousand new trees will be planted across the resort, with a mixture of native stock planted as smaller whips within the marshland areas, and as larger (mature) rootball stock within the plazas and Resort landscapes. Example species are set out in the page opposite.

4.29.2 The tree planting approach seeks to use a wide variety of tree species to create a mature and diverse landscape. The specification of tree species will mainly include native species that reflect and support the surrounding habitat. Throughout formal spaces, a small selection of non-native ornamental species will help create a high-quality, attractive space.

4.29.3 Grassland habitats and other informal planting will be used in conjunction with tree and woodland planting as part of the wider landscaping strategy, ensuring the maximum biodiversity and ecological benefit is achieved.



DESIGN PRINCIPLES

- Work in conjunction with other planting typologies to create a high-quality and enticing landscape.
- Assist in defining key areas and provide natural way-finding through arrival spaces.
- Contribute to the visual softening of the hard-landscaped areas and create vertical 'greening'.
- Reflect the existing estuarine habitat and character.
- Provide opportunities for wildlife that will contribute to the overall biodiversity and ecology on the Project Site.
- Create pockets of shaded areas that provide opportunities for shelter with informal seating.

Tree Planting Typologies

Woodland/Scrub Habitats

4.29.4 Located in large swathes on the Swanscombe Peninsula, existing woodland and scrub habitats will be preserved and managed to ensure the maximum benefits to biodiversity and ecology is achieved. These areas include a variety of native species that contribute to defining the estuarine character of the peninsula whilst providing habitat and foraging opportunities for the local fauna

4.29.5 Some additional tree planting will be introduced to enhance the existing marshland habitats. Species will include wetland appropriate species such as Alders (*Alnus incana, Alnus spaethii, Alnus glutinosa*) and Willow (*Salix alba chermisina, Salix alba Liempole, Salix caprea*).

Semi-Informal Open Spaces

4.29.6 Semi-informal tree planting will be scattered throughout transitional areas between the public spaces and surrounding habitats. Specimen trees will be planting informally in groups of up to three to create a naturalistic buffer to hard landscaped areas.

4.29.7 The tree palette will be diverse in species to create seasonal interest and should include predominantly native species, including Oak (*Quercus cerris*), Birch (*Betula jacquemontii, Betula pendula, Betula platyphylla*), Dogwood (*Cornus Eddie's White Wonder, Cornus controversa, Cornus mas and variety 'aurea', Cornus officinalis*).

Formal Specimen Tree Planting

4.29.8 Specimen tree planting will be used to define edges or to create a focal features. In formal open spaces, trees will be used within raised planters or islets and will work alongside planting to provide natural way-finding and create landmark features. In formal areas, species will include Birch (*Betula jacquemontii, Betula pendula, Betula platyphylla), Dogwood (Cornus controversa*) and Cherry (*Prunus avium, Prunus serrula*).

Tree Groves

4.29.9 Tree groves will be ornamental pockets of trees sitting alongside other planting typologies as islets within hard-landscaped areas. Tree species will include a mixture of small to medium decorative trees such as multi-stem Birch (*Betula jacquemontii*) and Cherry (*Prunus avium, Prunus serrula*).

Figure 58. **Tree Planting Strategy**

4.30 Hard Landscaping Approach

4.30.1 The hard landscaping strategy for the plaza and arrival spaces draws on the flowing, meandering characteristics of the Thames estuary. The weaving lines highlighted though subtle variations in colours and tones within the natural stone paving, aim to aid navigation by guiding people from drop off and terminal areas to the entrance plazas to Gates 1 and 2. Throughout the paving design, the flowing lines organically wrap around islets containing a mixture of planting beds, tree pits or rain gardens. In the London Resort Plaza, water features consisting of subtle depressions and with mist cannons sit within several key islets.

4.30.2 Informal paths through the surrounds marshes and habitat will provide connectivity through wildlife zones. Raised board-walks and sympathetic paving materials integrate the walks ways into the landscape but protect the wildlife.

DESIGN PRINCIPLES

- **The paving pattern should seek to aid navigation through flowing lines and connect drop-offs and terminals with the entrance plazas to encourage movement through spaces.**
- **All hard landscaping elements should be designed to work with the soft landscaping components to create a high-quality design.**
- **Consideration should be given to the materials supply, durability, longevity and ease of replacement or replication.**
- **Material colours must be muted but contrasting tones that complement rather than detract from the surrounding buildings.**
- **A range of appropriate materials should be used in order to define key spaces.**
- **The materials palette must also adapt to accommodate the evolving Sustainable Drainage Strategy (SuDS) - for example, by using porous paving or permeable bound surfacing systems.**
- **Consider re-use of local materials or recycled materials with a preference for UK suppliers.**

Walling Indicative Material Palette

Concrete walls using pulverised fuel ash to cut down on cement

Cement has a long association with the site, is versatile and complements the chalk geology and cliffs. Opportunities to form organic geometry in keeping with the flowing theme.

Kentish ragstone gabions can be utilised in marsh areas, potentially to form flood embankment edges or seat walls

Abstract patterns created inspired by estuary character

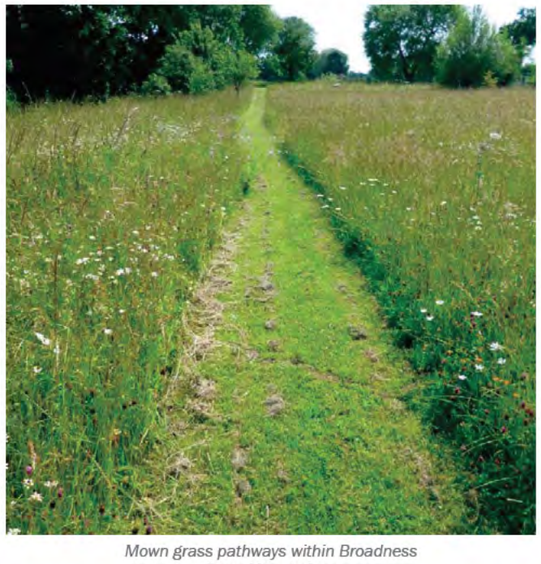
Hard Landscape Indicative Material Palette

Cycle routes can be defined in an alternate colour tarmacadam within the Resort area alongside the street

Crushed aggregate tracks for principal pedestrian and cycle routes within the marsh areas

Hoggin material for nature trails

Shared surface treatment across internal Resort roads and at drop-off locations



Mown grass pathways within Broadness Open Mosaic Area

Traditional cobble stones

Abstract patterns created inspired by estuary character

Flowing paving patterns form a cohesive element linking the Resort plazas

4.31 Lighting Approach

4.31.1 Lighting will transform the character of spaces within the Resort and be instrumental in creating an exciting and vibrant atmosphere. Use of coloured lighting, laser projections and dynamic lighting effects may be appropriate within the arrival plaza spaces. Within the marsh areas, it is proposed that no artificial lighting is used as far as possible, in order to protect light sensitive ecology.

DESIGN PRINCIPLES

- **Create a sense of drama and excitement within the Resort through use of bespoke units, coloured lights and dynamic lighting effects.**
- **Lighting street furniture should follow a family of units, or kit of parts within the same style. This should include full length columns, incorporation of signage/events banners, shorter columns, bollards and way-markers for pedestrian only areas.**
- **Feature lighting 'beacons' could be used within key nodal areas. These should follow a bespoke design or have a one-off theme/artist installation.**
- **Lighting should use LED fittings to reduce energy use.**
- **Lux levels will accord with BS 8300-1 Table 5 based on SLL Code for Lighting and CIBSE publication LG/016.**
- **Lighting will accord with BS 8300-1 which recognises that good external environment lighting is crucial in ensuring social amenity and enabling people who are partially sighted, and people who have sensory/neurological processing difficulties, to be able to use the external environment conveniently, safely and securely.**
- **Within the Broadness and Botany Marshes, no lighting to be used in order to reduce impacts on ecology. This follows best practice as per the 'National Trust' approach.**
- **On the Resort road adjacent to the marsh, low level ambient lighting or tree/landscape lighting should be used to create a soft, high quality ambience.**
- **On the boardwalk and northern edge of Black Duck Marsh, a low level of lighting is required for ecology reasons (approx 5 lux) with low bollards, low level indicator lights or handrail lights employed.**
- **At key access nodes such as at Ingress Park or the Ferry Terminal, there will be a slightly higher illuminance to ensure safety and effective CCTV coverage.**

Water Feature Character Imagery

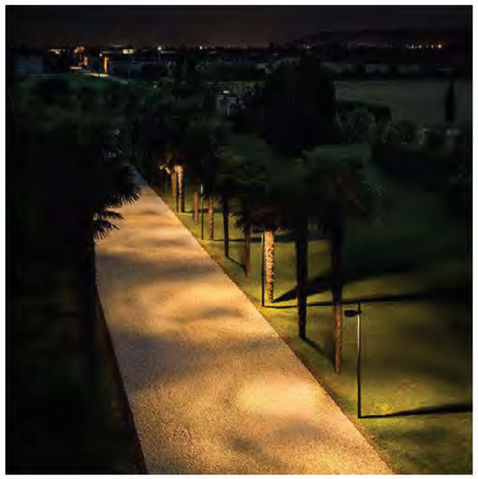
Timber bollards with directional down lights cause minimal light pollution

Example of laser projections onto cliffs for special events or nightly displays

Coloured lights in fountains

Recessed lights can be fitted into steps or walls in key public realm areas

Concealed LED fixtures in planter minimising uplighting



Light columns with a directional lumiere to prevent light spill

4.32 Water Features

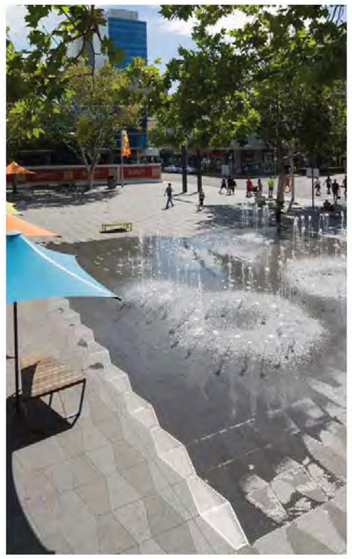
4.32.1 Water features are proposed at a number of locations within the Project Site. These features can create a visual link to the riverside character and marsh habitats found in the setting of the Resort. Water can be used in different ways to achieve different effects depending on location. For instance, it can have a calming effect, with the sound of moving water creating a soothing ambience, or more exciting or atmospheric effects such as use of playful fountains or mist effects. It can also replicate natural habitats in a more urban setting and provide an exciting centrepiece to a space in combination with well detailed hard landscaping.

DESIGN PRINCIPLES

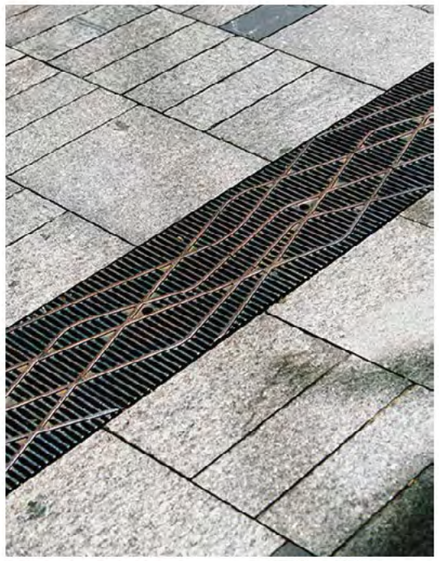
- **Water features will provide a focal point for visitors arriving at the four main terminals to the Resort. It is proposed that a common theme be developed for water features that complements the fluvial design language or wayfinding/branding.**
- **A naturalised approach will be sought, with water features to include elements of reedbeds to reference the native marshland that is found across the Project Site.**
- **Features can include rain gardens (see previous section in relation to planting) that will act as attenuation for stormwater and filter pollutants.**
- **In plaza areas, a mirror pool effect can be created, with shallow water features that can be drained away so that the plaza can be used when larger crowds might be present. These features can be used in combination with 'dry fountains' (fountains concealed in the paving and controlled for use at particular times of day) or mist dispensers.**
- **Gullies and slot drains can form bespoke design elements within the public realm.**
- **On the Spanish Steps, it is intended to have a water channel that flows down the steps to link with the water feature at the people mover drop-off.**

Plaza Water Feature Character Imagery

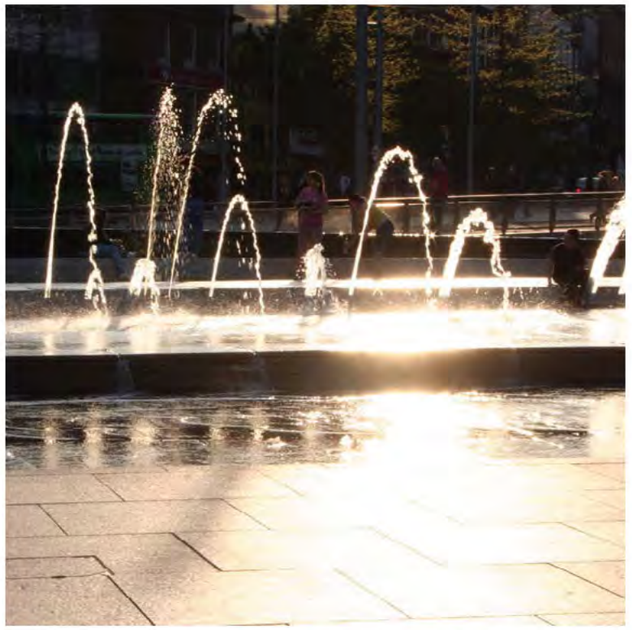
Water features with misters create a unique ambience



Paving patterning using a simple contrasting paving unit, including water features



Water features to drain subtly into slot drains, with an opportunity for a high quality bespoke detail



Fountains create playful atmosphere and interplay of light and shade

Water features flowing down steps

4.33 Signage and Wayfinding

4.33.1 This section provides guidelines for signage and wayfinding within the marshland and landscape areas of the Resort. This will be delivered through detailed design at the next stage. As well as the primary signage that will be provided on all main approach routes to the Resort to guide visitors to the Resort, a different group of visitors will be using the natural spaces and will require a wayfinding approach.

4.33.2 The three basic types of directional signage include fingerposts, waymarkers and orientation panels.

- Fingerposts, which direct people along a route and contain information about the direction of the route, the end destination and the distance to it.
- Waymarkers, which help to guide people along a route and give them reassurance that they are on the right path.
- Orientation panels, which promote the site and inform users of what paths are in the area, where they go and local attractions along the route (typically using a map). Orientation panels can also serve to provide a welcome to visitors and contribute to their 'sense of place' as part of an overall destination brand.

4.33.3 In addition to these, further signage may be required not for directional purposes but to provide information about the habitats and landscapes, for safety purposes or as 'welcome' signs to let visitors know that they are entering a particular place. These signs could be integrated within the public realm and have a more eg. the names of each of the three marshes could be incorporated into the hard landscape design.

DESIGN PRINCIPLES

- **All signage from the approaches to and within the development will be designed to an inclusive signage strategy.**
- **Wayfinding and signage will be designed to avoid creating obstacles for people with visual impairments and contrast visually for easy reading.**
- **Signing and wayfinding is an important element of traffic-free routes and should be treated as an integral part of the design process.**
- **Signing should be consistent and legible throughout a route or network. It must present the correct information to users.**
- **Signing and wayfinding features need maintaining.**
- **Signing, wayfinding and street furniture can all serve to create clutter. It is important to consolidate and rationalise signing along routes where possible.**
- **The approach to introducing these features needs to be sensitive to the environment.**

Subtle signage integrated with natural materials

Opportunities to use bespoke signage solutions

Example of welcome signage integrated into public realm, with orientation signage well located

Example of a fingerpost with route branding integrated and including distances

Informational siganage should be located at key arrival nodes

4.34 Accessibility

4.34.1 Accessibility has been at the forefront of all design considerations, providing access to the natural environment, open space and the public realm. The following high-level parameters outline our approach to delivering an inclusive environment and going beyond the minimum standards of the building regulations. These will be considered in design development and detailed design for the scheme.

4.34.2 In developing the landscape and public realm, we have adopted the following principles:

DESIGN PRINCIPLES

- **Principal circulation routes are to be step-free routes; secondary access routes may be stepped**
- **All primary circulation routes are to be clear and logical**
- **Landscaping will provide a choice of quiet areas of different sizes and visual vibrancy with consideration for people who are neuro-divergent or have a sensory impairment**
- **Materiality of routes will be used to aid wayfinding and define the different character areas of the Resort and main circulation routes**
- **Opportunities will be sought to mitigate level changes across the development site by considering the placement of all the built elements to improve gradients**
- **All principal routes to approach, enter and use of the buildings and their facilities are to be accessible. The shallowest possible gradients are to be used on all routes**
- **Gradients on newly formed circulation routes are preferably to be less steep than 1:21 (e.g. slopes). Where this cannot be achieved, ramps (e.g. gradients steeper than 1:20) should ideally be as shallow as possible but will not exceed 1:12. Note that existing site constraints such as the gradients that form the Chalk Spine cannot be ameliorated to meet this criterion: however, in where this is the case, alternative step-free and stepped routes will be investigated to give the widest possible opportunity of access to users.**
- **The seating strategy for the public realm will take regard of desire lines and travel distances between areas of Resort and site access points**
- **Resting places with suitable seating will be incorporated to limit travel distances at approximately 50m; where existing site constraints or the nature of the landform prevent the application of this criterion, the design team will explore a level of reasonable provision to encourage access.**
- **Where seating is provided within the external landscape, there will be a mixture of accessible seating and based on guidance set out in BS 8300-1. Seating will feature some backrests and armrests and developed to areas to include space for pushchairs/prams, wheelchair and scooter users.**
- **Seating areas will include space for pushchairs/prams and wheelchair and scooter users**
- **Access routes are to have a firm, slip-resistant and reasonably smooth surfaces**
- **Materials used within the external environment should be installed to provide a level, firm and even surface**
- **The design of external stairs, indicative nosings and associated handrails will be designed to meet the objectives of BS 8300-1 and AD M**
- **External stairs are to have a 'corduroy' hazard warning surface at the top and bottom landings of a series of flights to give advance warning of a change in level in accordance with AD M Diagram 4**
- **Obstacles, such as objects or signs mounted on walls, bollards, columns or free-standing supports along pedestrian routes should be avoided**
- **Unavoidable free-standing posts or columns within access routes shall be clearly identifiable and contrast visually with their surrounds**
- **All footways, footpaths and floor surfaces are to:**
- **Be installed with any necessary joints closed and flush to prevent small wheels, walking sticks and canes becoming trapped**
- **Have consistent use of tone and surface when paths are used as a wayfinding tool**
- **Use visually contrasting surfaces to indicate level differences.**
- **Not have highly patterned surfaces including stripes**
- **Not incorporate highly reflective materials.**
- **Planting will not encroach onto main circulation routes and cause a hazard at both foot and head level**

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