

SKANSKA



STRABAG

Working in
partnership with

HS2

Copthall Tunnel and Northern Sustainable Placement Areas

Community Update 29th July 2021

KEY POINTS

- Introduction
- Overview and Location
- Copthall Tunnel
 - Tunnel profiles
 - Construction method
- Northern Sustainable Placement Areas
 - Mound profiles
 - Construction method
- Landscaping and Design
- Artistic appearance – Copthall Tunnel
- Artistic appearance – Northern Sustainable Placement Areas
- Q&A



Overview and location



Map locations of the HS2 assets between Ickenham High Road and Harvil Road:

1. West Ruislip Portal
2. Ruislip Golf Course
3. Bridges, Retained Embankment and Gatemead
4. Southern Sustainable Placement Area
5. Harvil Road
6. **Copthall Tunnel**
7. **Northern Sustainable Placement Areas**



Copthall Tunnel

Bayhurst Woods

Breakspear Road South

Newyears Green Lane

MSD site

Dogs Trust

BFA Recycling

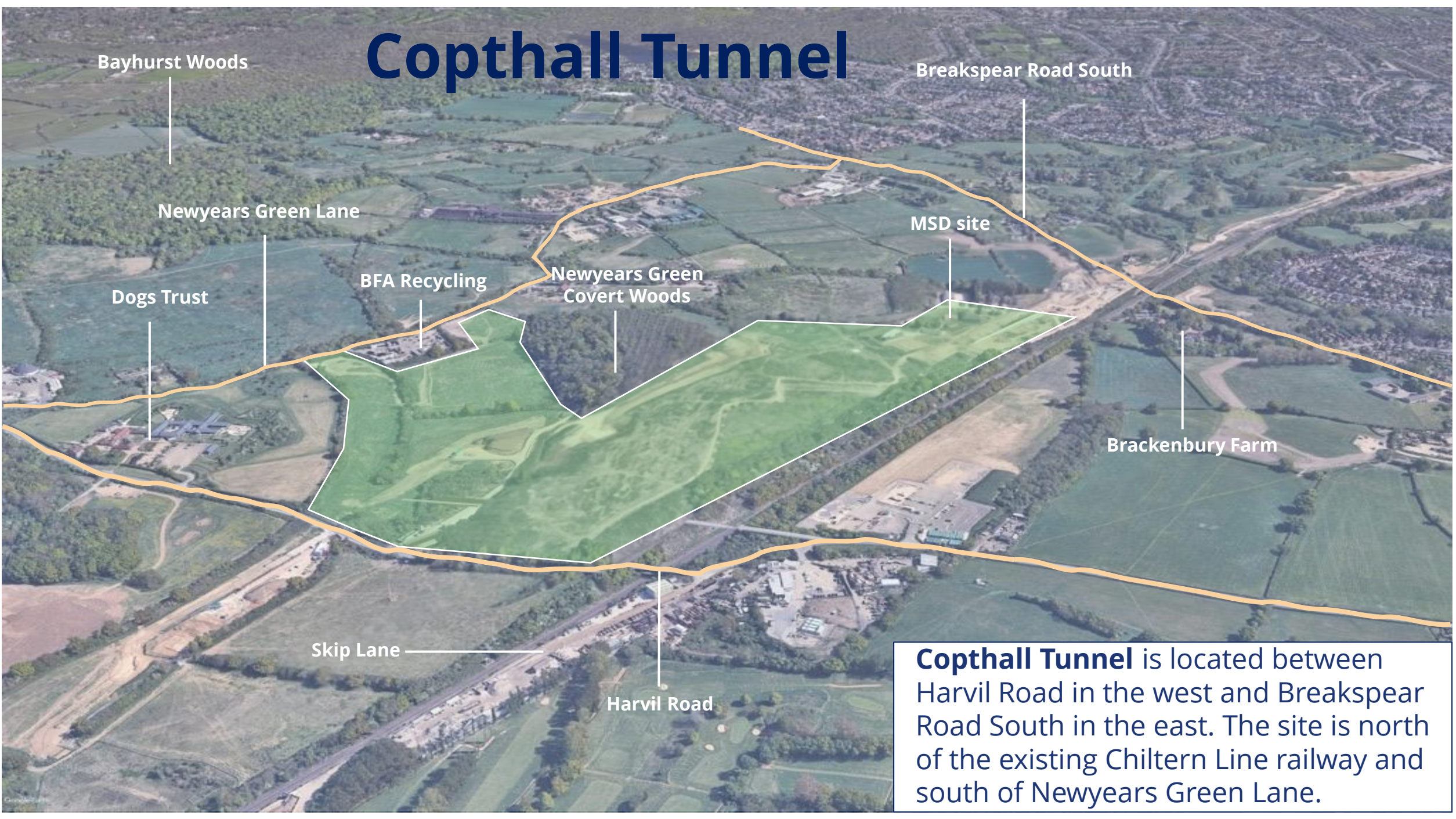
Newyears Green
Covert Woods

Brackenbury Farm

Skip Lane

Harvil Road

Copthall Tunnel is located between Harvil Road in the west and Breakspear Road South in the east. The site is north of the existing Chiltern Line railway and south of Newyears Green Lane.



Northern Sustainable Placement Area

Hillingdon
recycling
centre

Bayhurst Woods

BFA Recycling

Newyears Green Lane

Newyears Green
Covert Woods

Mad Bess' Wood

Breakspear
Road North

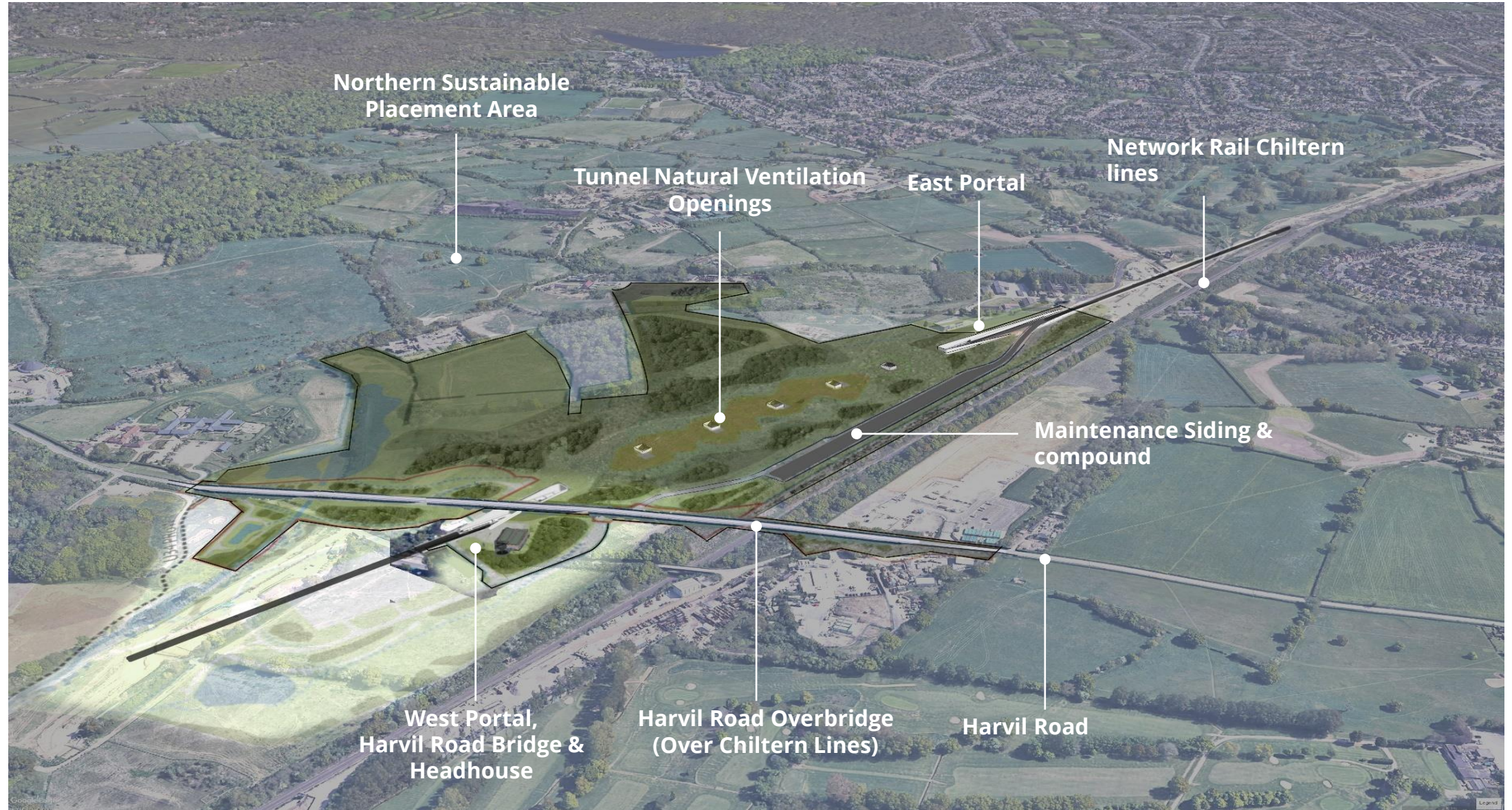
Breakspear
Road South

Northern Sustainable Placement Area is located in the settlement of Newyears Green, to the north of Newyears Green Lane, west of Breakspear Road South and south of Bayhurst Woods.

Copthall Tunnel



Overview Copthall Tunnel



West Portal and Harvil Road Bridge

The West Portal will be formed of reinforced concrete wingwalls, topped with steel post and rail parapets. The West Portal structure will also be integrated with the Harvil Road Bridge, with the bridge structure and the 1.8m precast concrete parapets.

Tunnel Natural Ventilation Openings

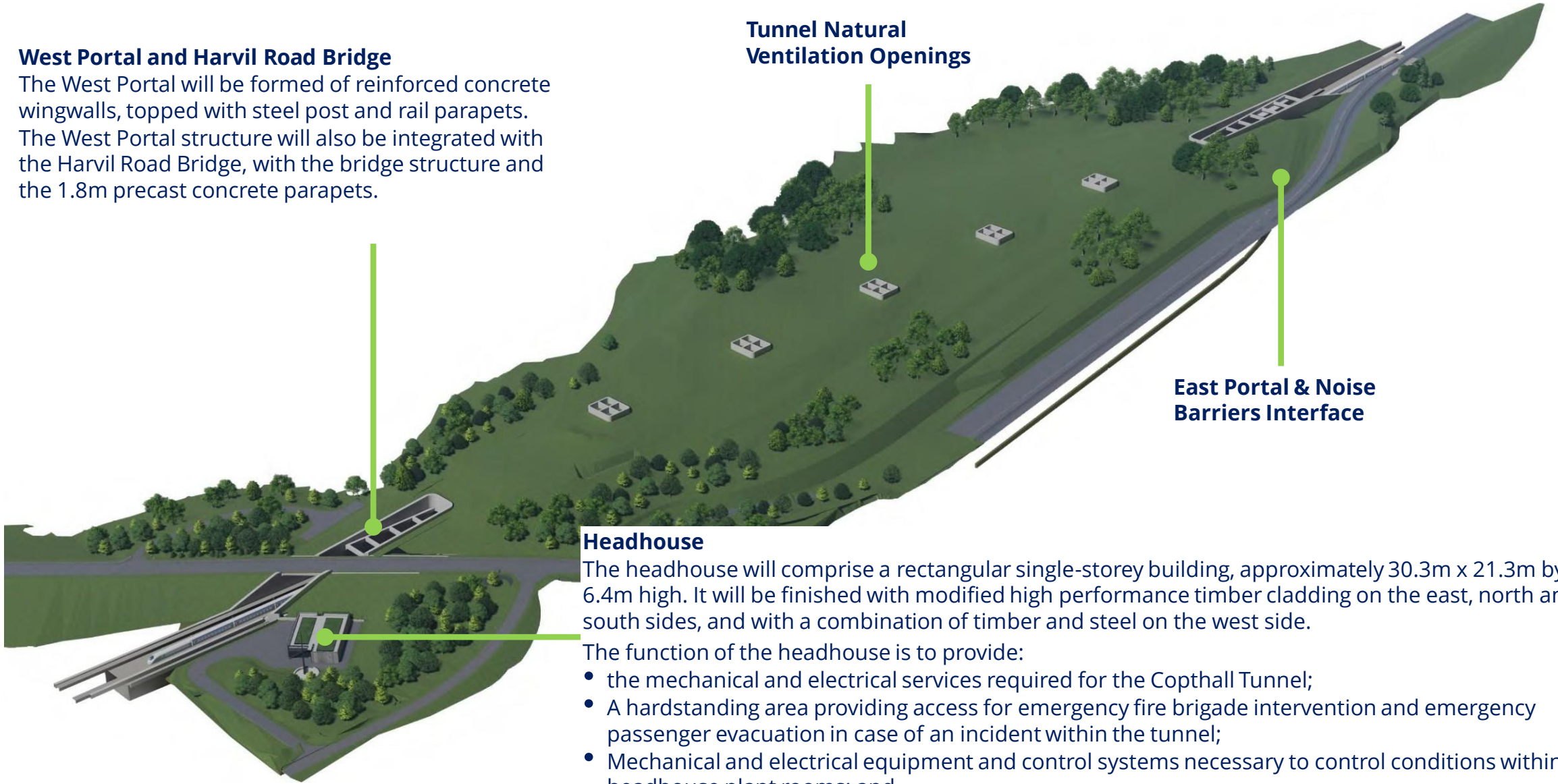
East Portal & Noise Barriers Interface

Headhouse

The headhouse will comprise a rectangular single-storey building, approximately 30.3m x 21.3m by 6.4m high. It will be finished with modified high performance timber cladding on the east, north and south sides, and with a combination of timber and steel on the west side.

The function of the headhouse is to provide:

- the mechanical and electrical services required for the Copthall Tunnel;
- A hardstanding area providing access for emergency fire brigade intervention and emergency passenger evacuation in case of an incident within the tunnel;
- Mechanical and electrical equipment and control systems necessary to control conditions within the headhouse plant rooms; and
- Space allocation for a telecommunication mast.



Tunnel Natural Ventilation Openings

There are five natural ventilation openings that will be formed as part of the tunnel structure. From the new ground level, these rectangular structures will rise to approximately 3.4m in height and will comprise a faceted concrete finish.

The natural ventilation openings will be constructed to provide ventilation to the Copthall Tunnel below and have been designed to naturally control smoke in the event of a fire and provide for environmental control/airflow in the scenario where trains are stalled in the tunnels below.

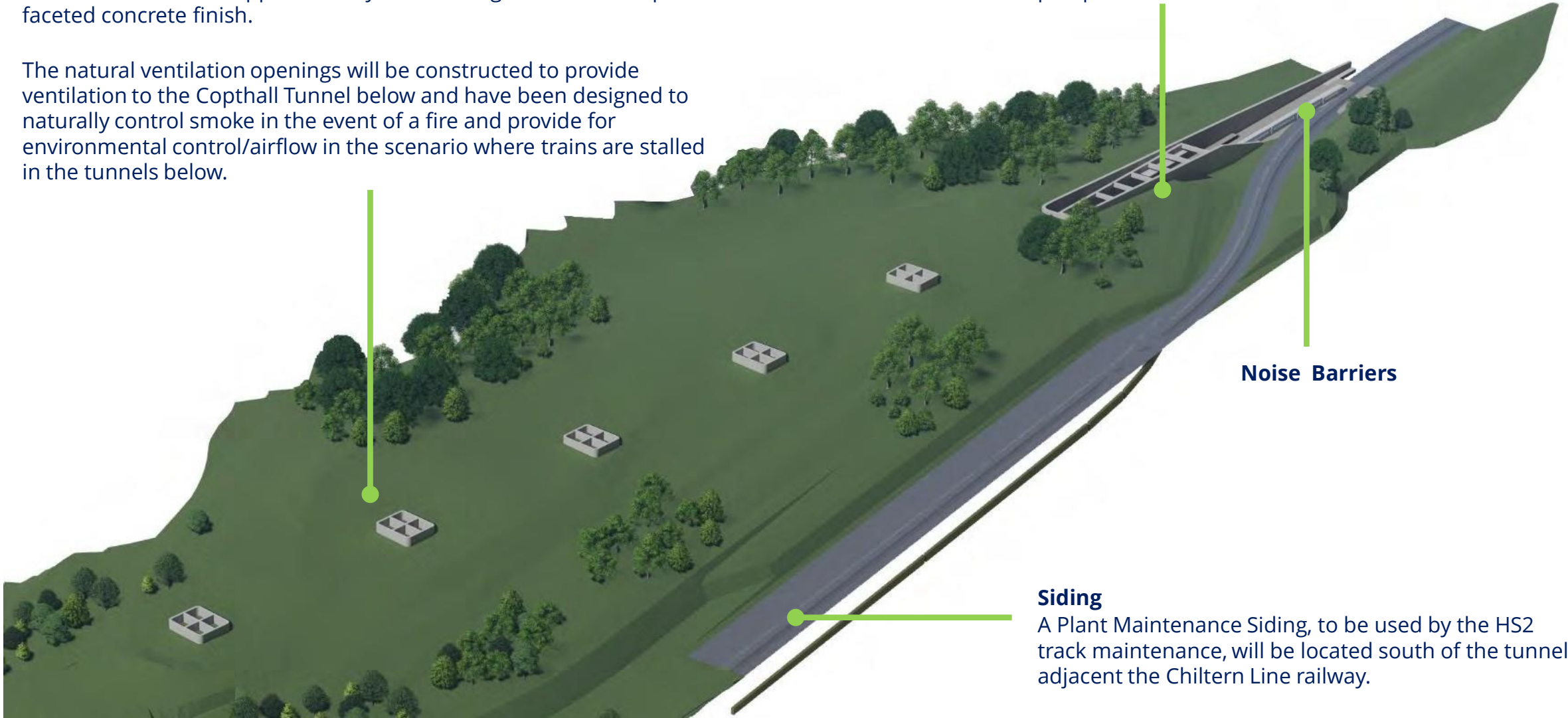
East Portal

The East Portal structure includes reinforced concrete wingwalls topped with a concrete parapet.

Noise Barriers

Siding

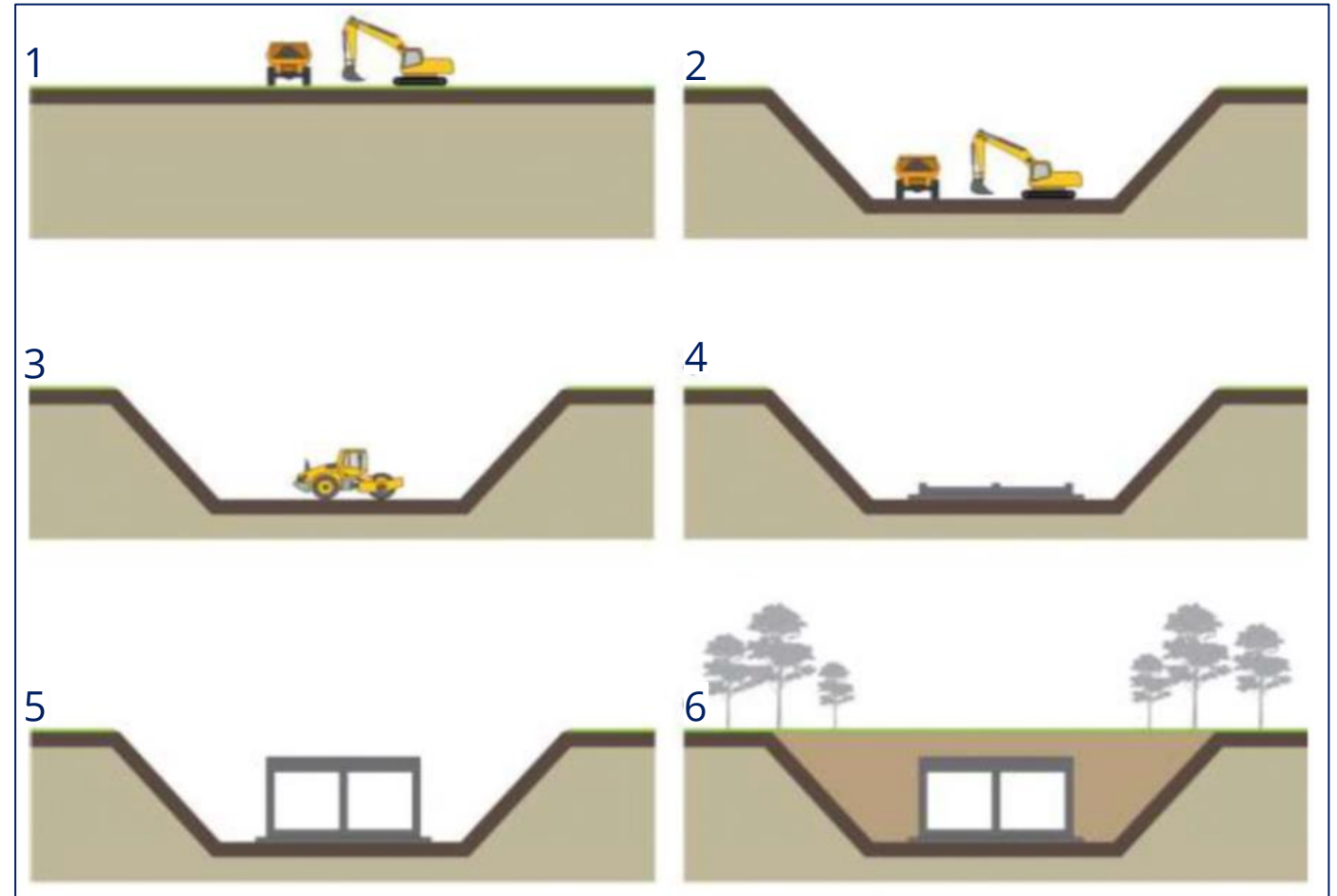
A Plant Maintenance Siding, to be used by the HS2 track maintenance, will be located south of the tunnel, adjacent the Chiltern Line railway.



Construction Method

The tunnel will be constructed using the cut and cover technique, with excavation being undertaken to facilitate the construction of the tunnel concrete box structure, which will then be covered / backfilled with material, and a landscaping scheme implemented on top.

The tunnel structure will include the two portals at either end, and five natural ventilation openings at 100 metre intervals.

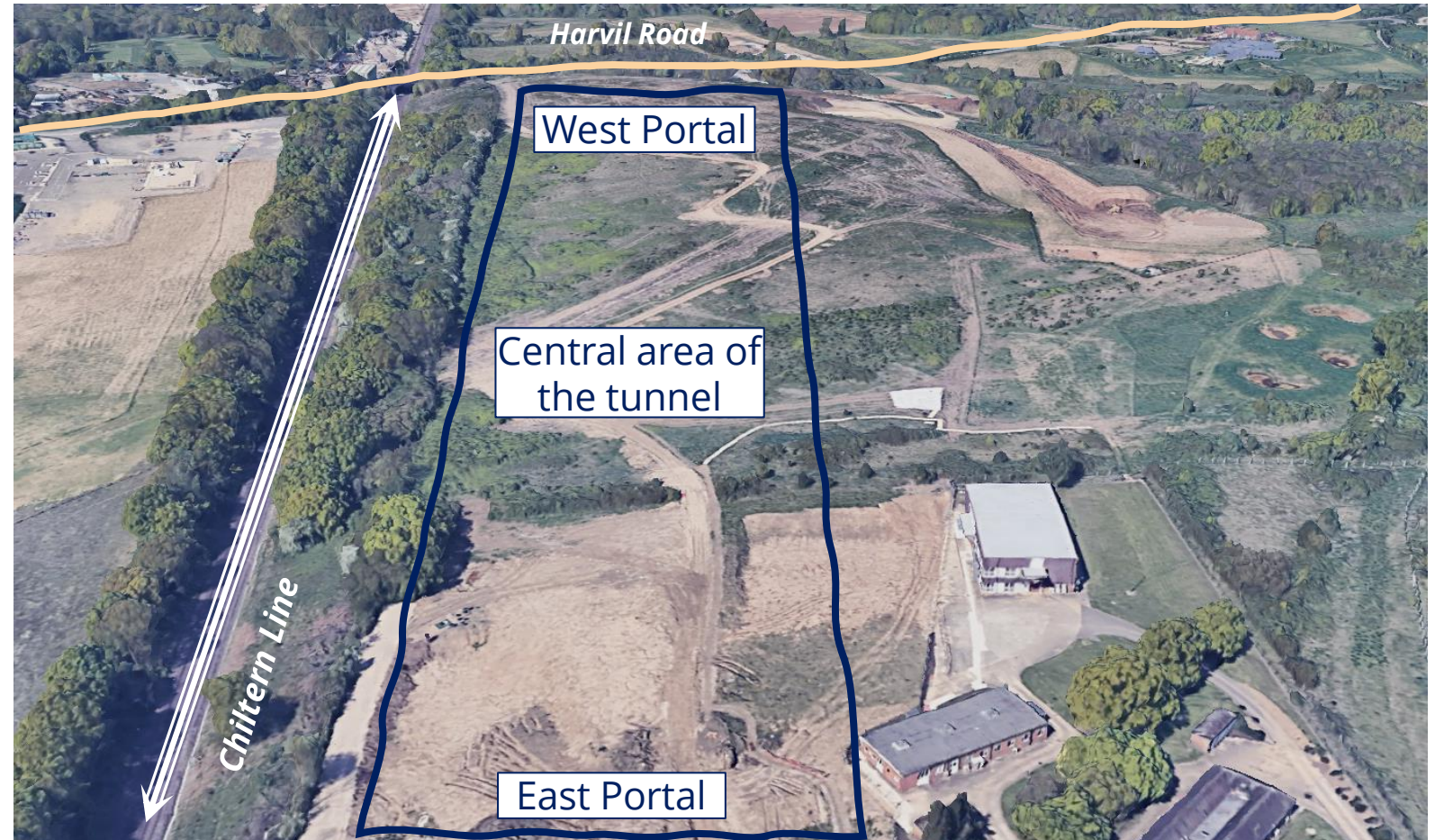


Construction Method

The works to be conducted at Copthall Tunnel include excavation, pilling, reinforced concrete works and backfilling.

Copthall Tunnel works will comprise excavation of the different elements in the following order:

- West Portal
- Central area of the tunnel
- East Portal



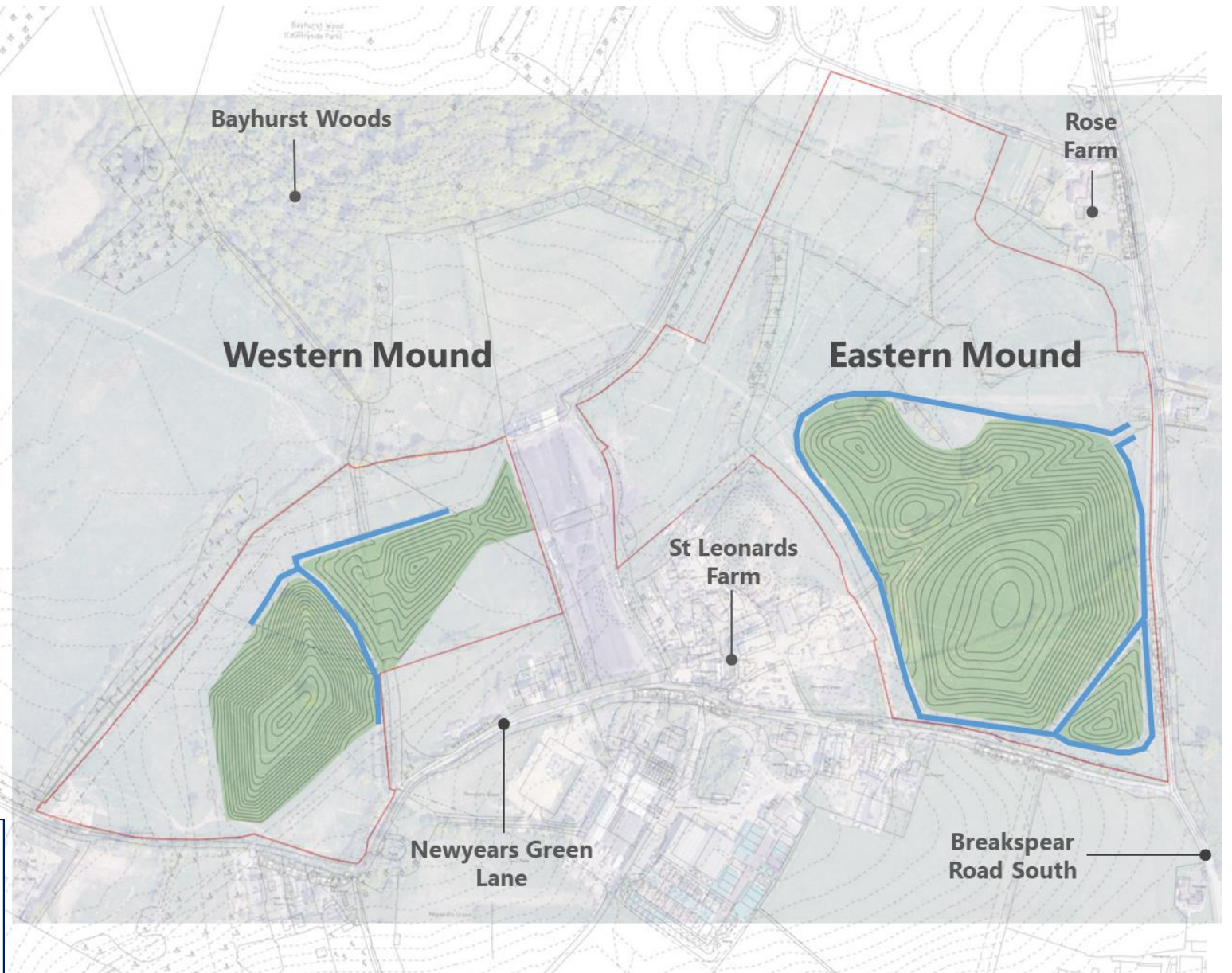
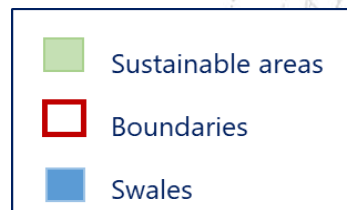
Northern Sustainable Placement Area



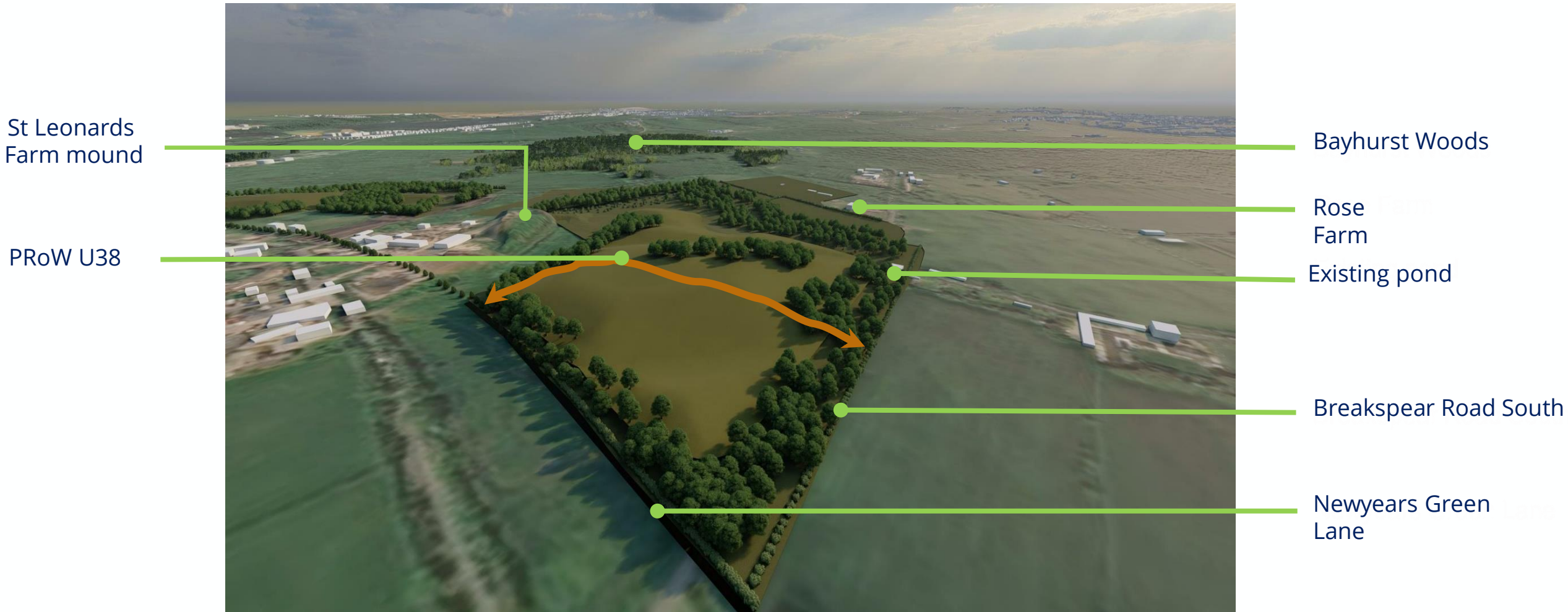
Mound Profiles

The placement of material will be undertaken to form mounds on two separate areas within the site. The material will arise from the excavation of the Copthall Tunnel.

This excavation will be completed in stages (from west to east), and initially, on a temporary basis, the excavation material will be stored in Copthall North, south of Newyears Green Lane.



Mound profiles – East Mound



East mound looking North-West from the junction of Breakspear Road South and Newyears Green Lane.

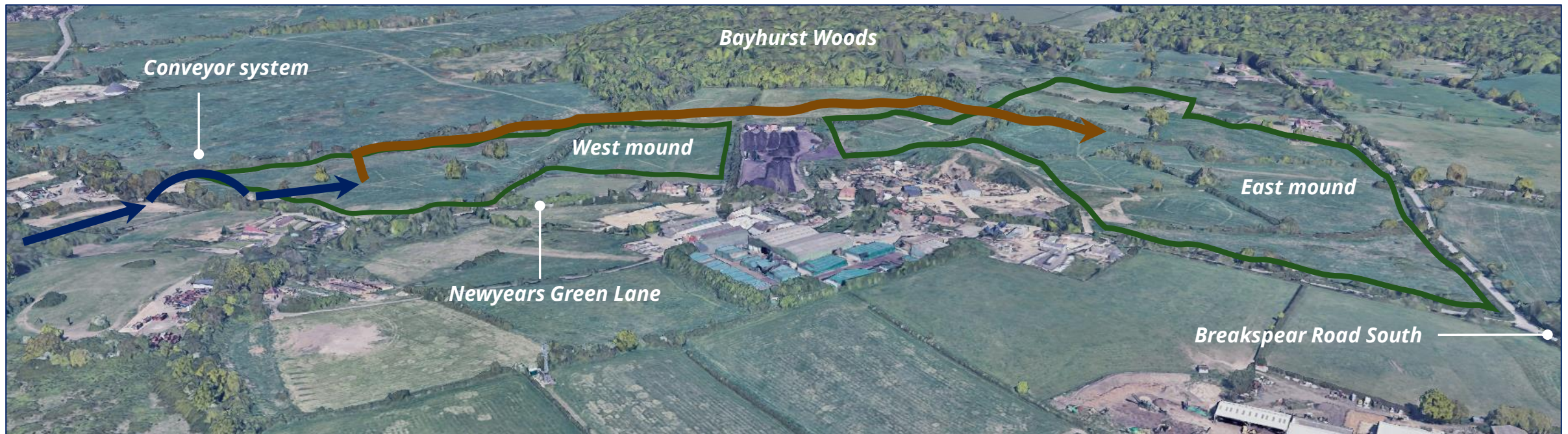
Mound profiles – West Mound



West mound looking North from Newyears Green Lane.

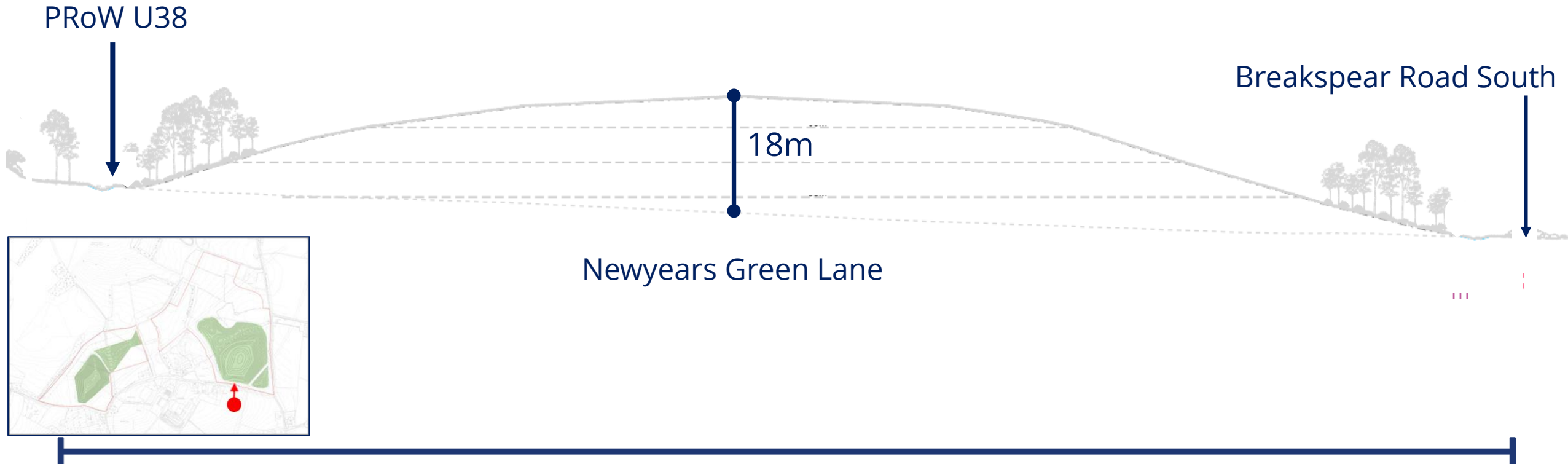
Construction method

- The material from which the sustainable placement areas will be formed will arise from the excavation of the Copthall Tunnel. This excavation will be completed in stages (from west to east), and initially, on a temporary basis, the excavation material will be stored in Copthall North, south of Newyears Green Lane.
- Prior to works on the sites, a temporary drainage system will be installed at the base of the mounds. Drainage pipes will be installed and then covered to act as crossing points.
- After being temporarily stored, the excavated material will ultimately be relocated to the proposal sites. The material will first deposited onto an overhead conveyor system that will travel from the south side of Newyears Green Lane to the north side.
- For the final stage at the eastern mound, a haul road will be required to collect the excavated material from the conveyor system and transport it 1.2km to the site.



East Mound

Located on land immediately to the north of Newyears Green Lane and west of Breakspear Road, will be rising to a height of approximately 18 metres above existing ground level at its highest point, using approximately 468,000 m³ of material.



West Mound

Located on land immediately to the north of Newyears Green Lane, will be rising to a maximum height of approximately 18 metres above existing ground level at its highest point, using approximately 209,000 m³ of material.

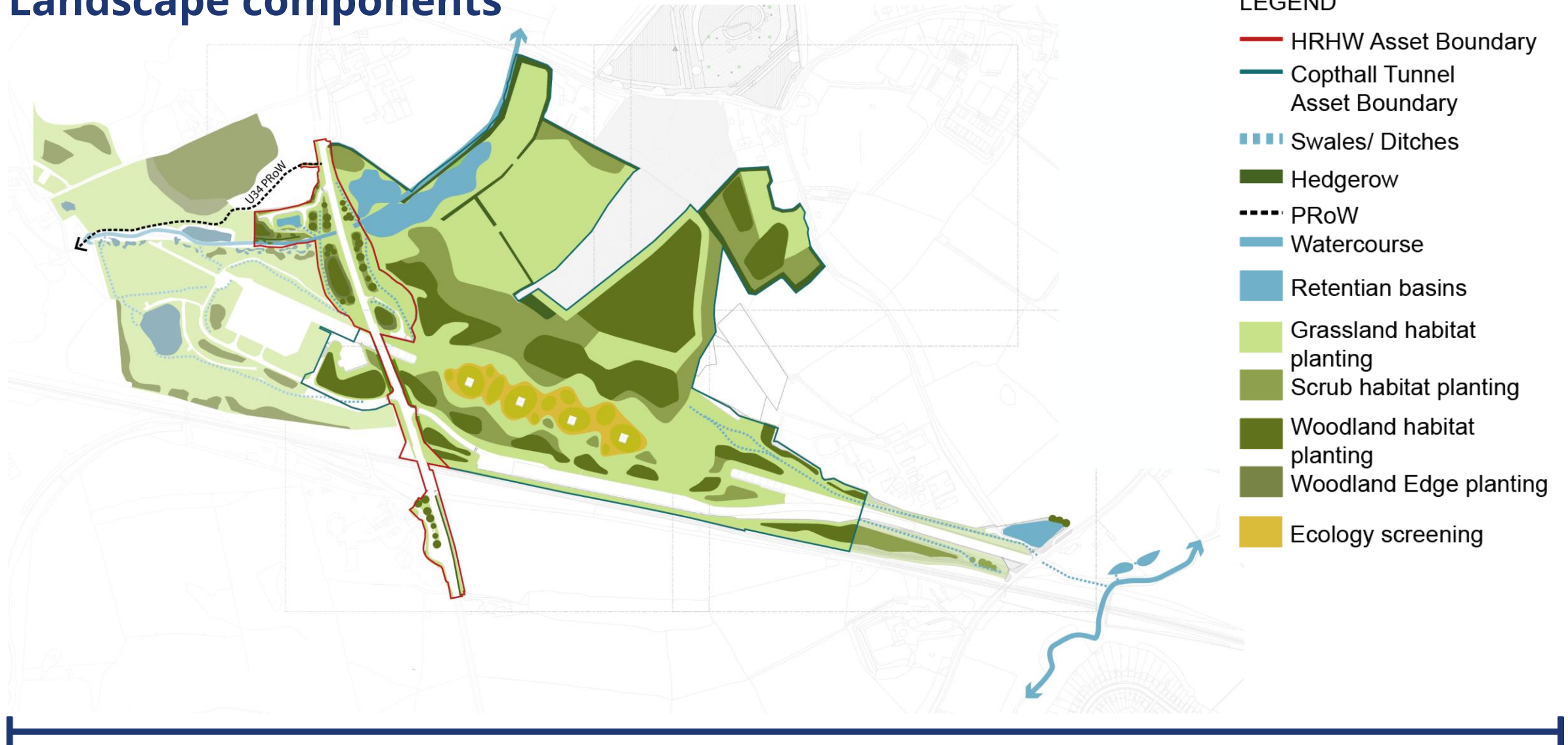


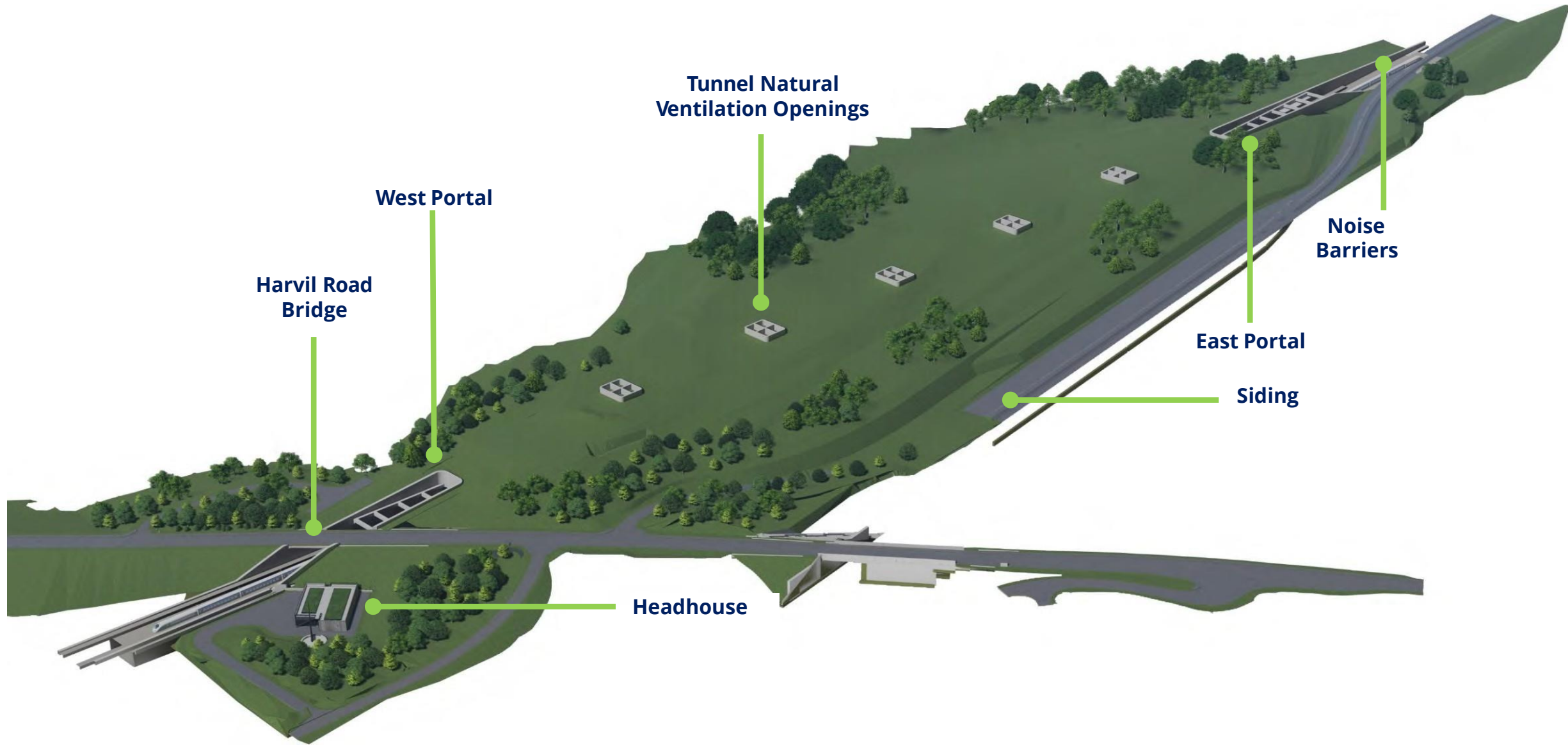
Landscaping and Design



Copthall Tunnel

Landscape components

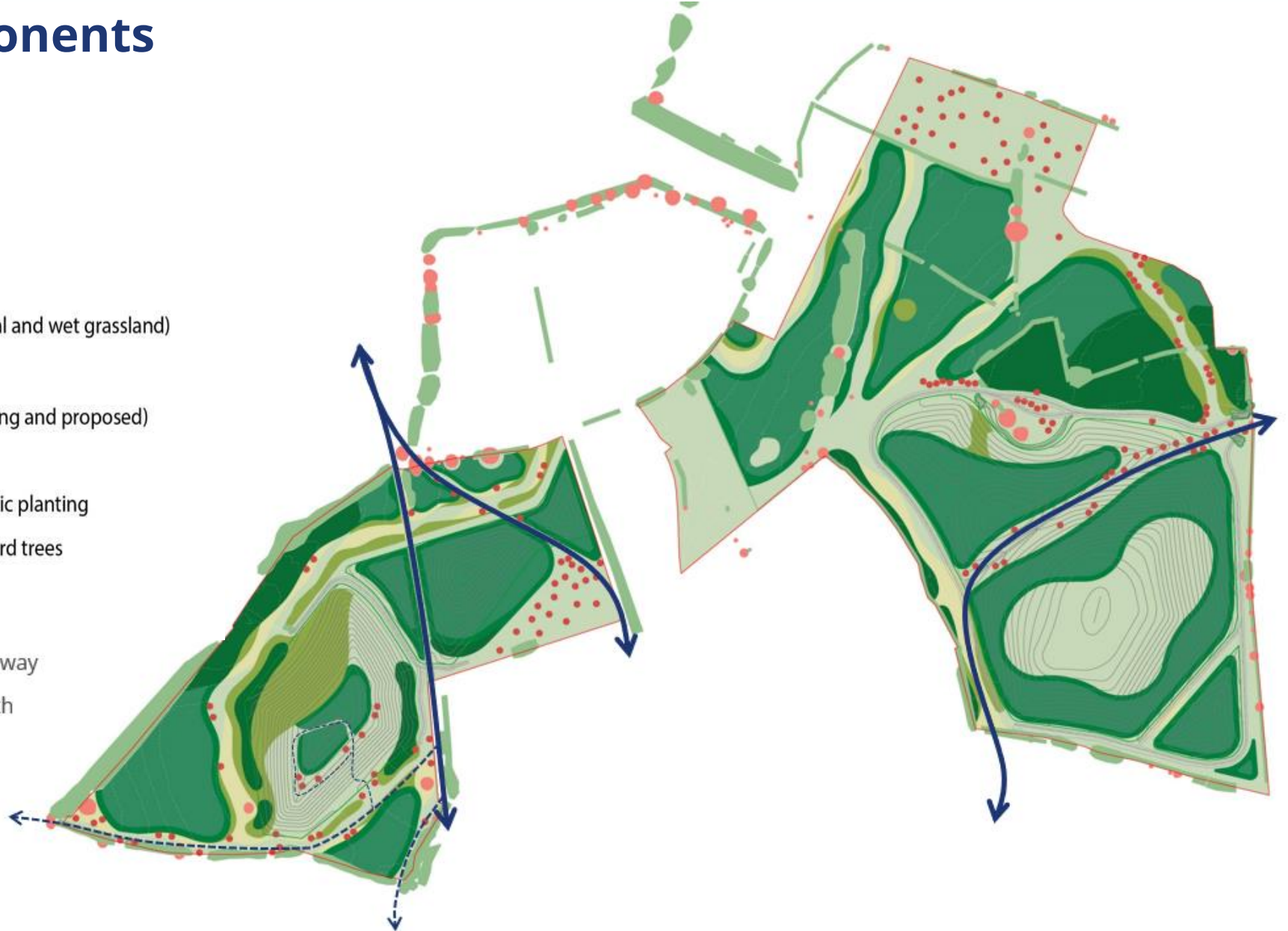




Northern Sustainable Placement Area

Landscape components

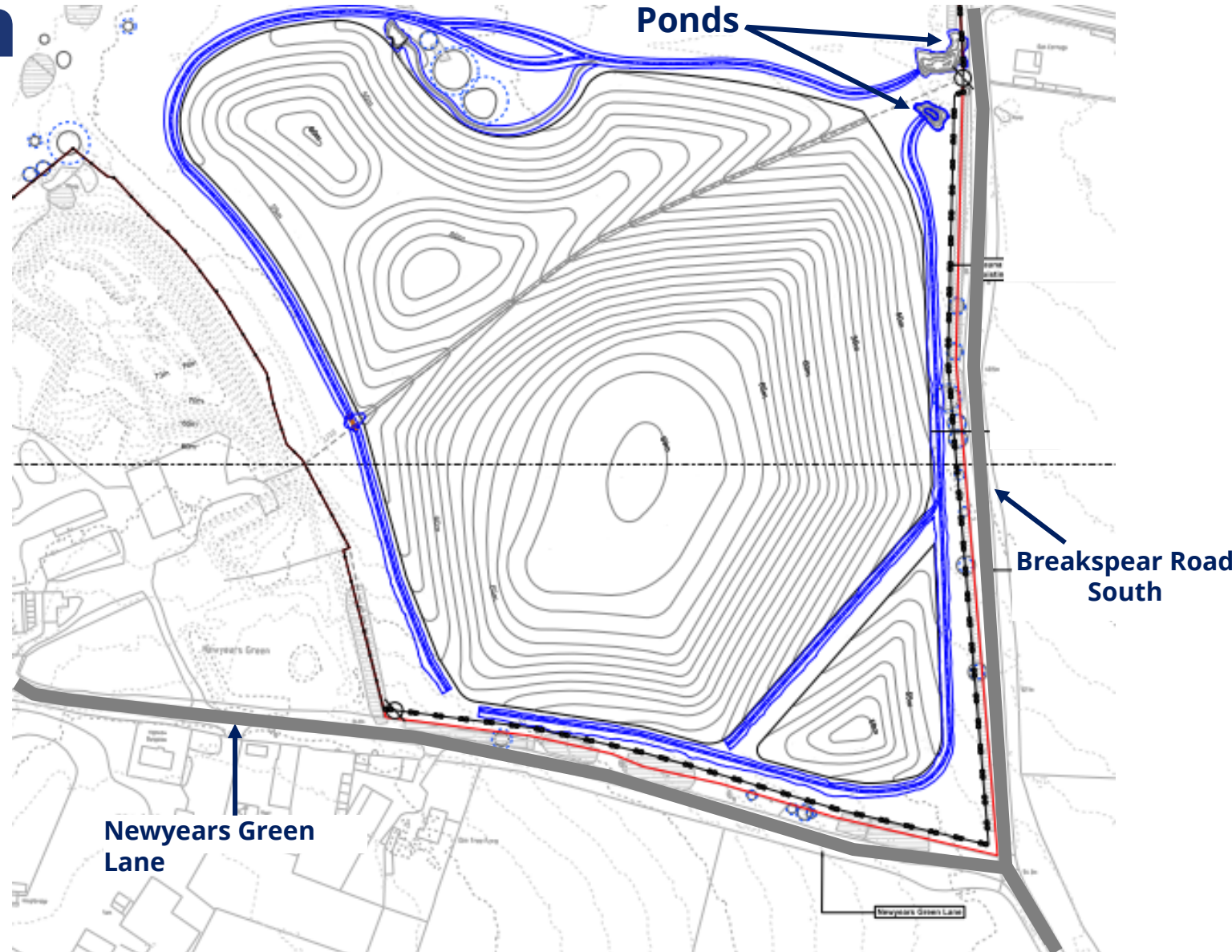
- Wet woodland
- Woodland edge
- Dry woodland
- Grassland (neutral and wet grassland)
- Grassland 2
- Hedgerow (existing and proposed)
- Dense scrub
- Ponds and aquatic planting
- Proposed standard trees
- Existing trees
- Public right of way
- Pedestrian path
- Informal path



Drainage solution

East mound

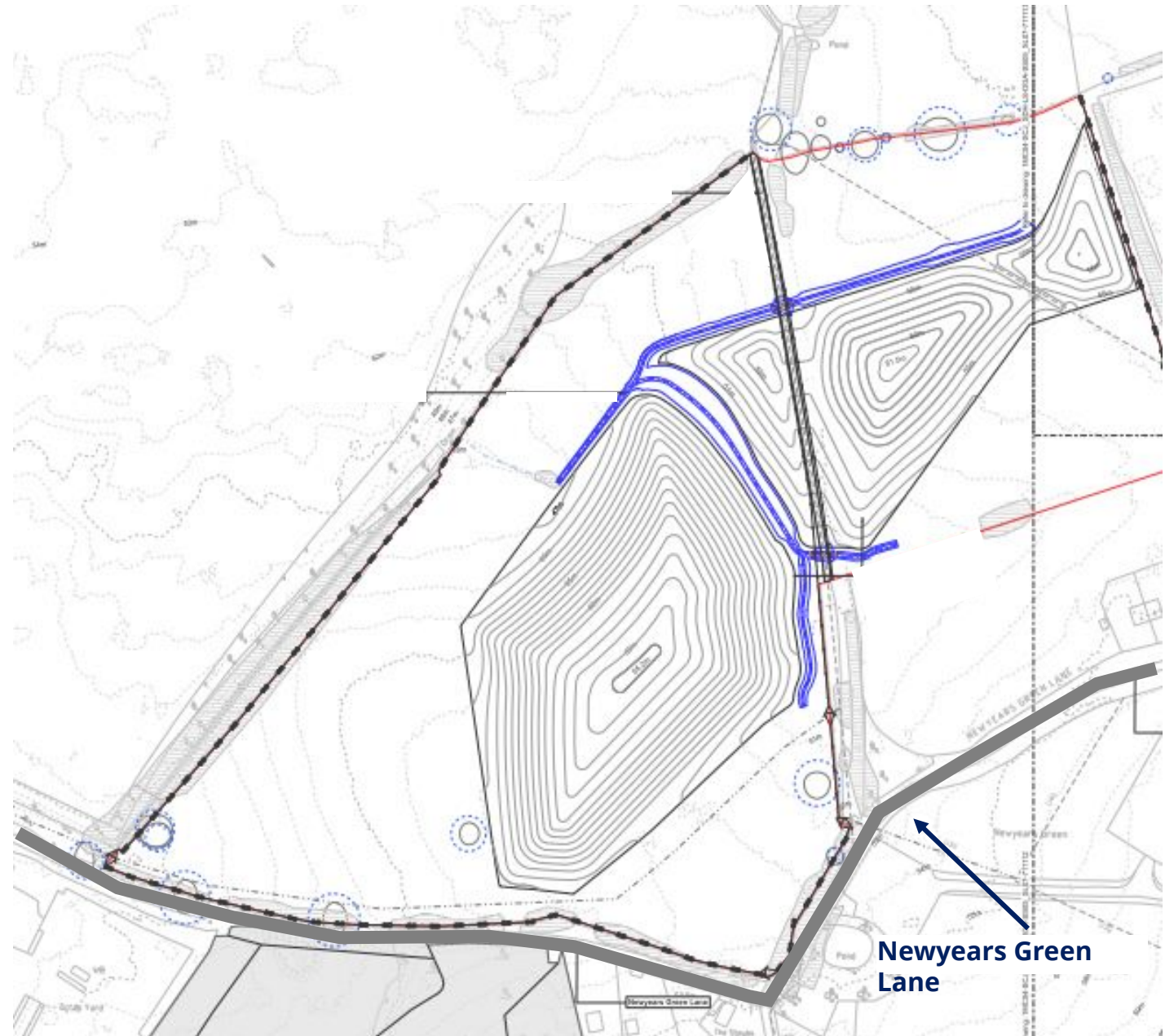
- Swales will be constructed at the toe of the mounds, intercepting the runoff from the surface and conveying it into the ponds downstream.
- The existing and the proposed ponds in the vicinity of Breakspear Road South will allow flow attenuation, which will be also enhanced by the planting proposal.



Drainage solution

West Mound

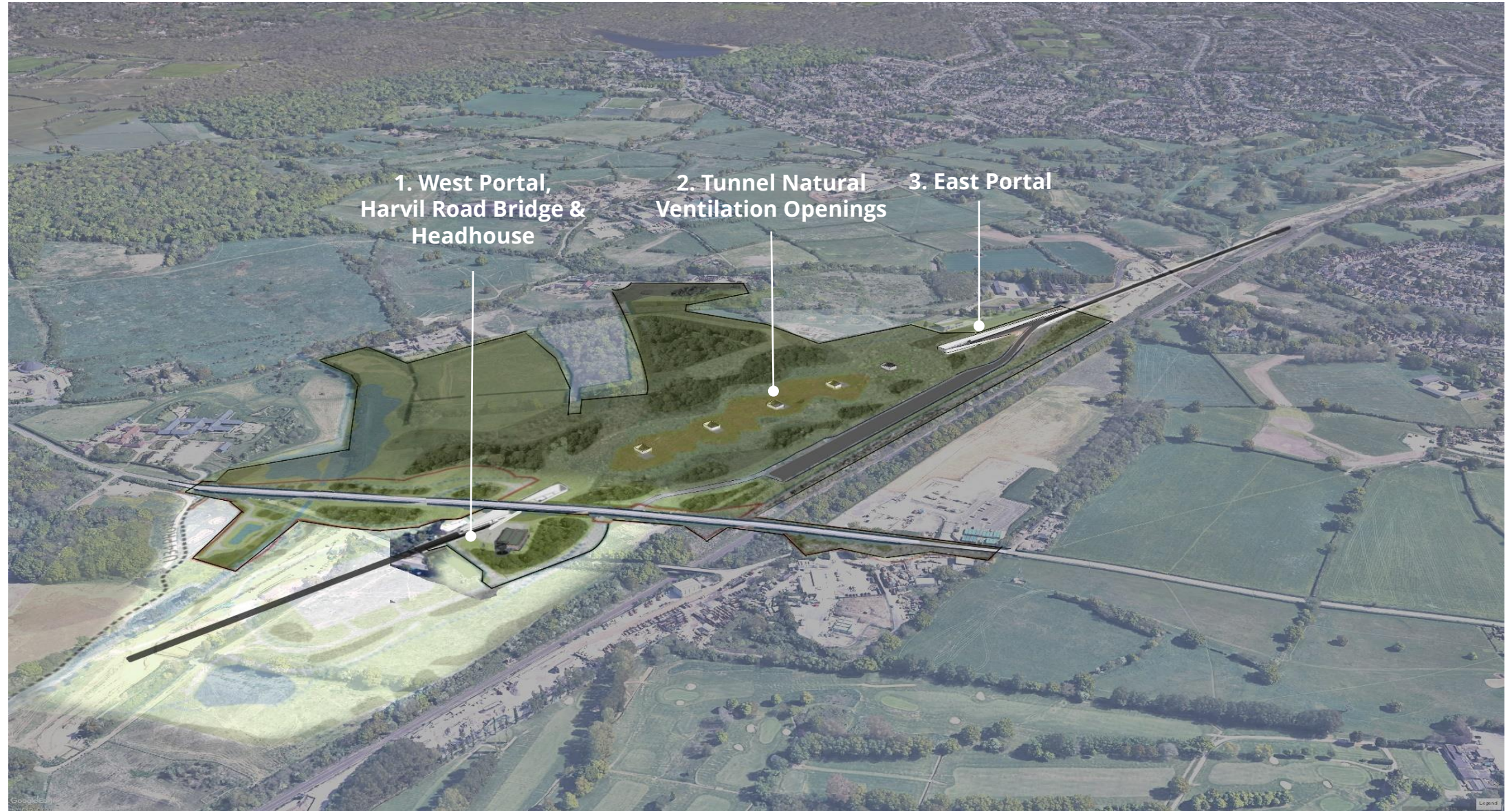
- The ordinary watercourse will be diverted northwards and will run between the two sections of the western mound. It will be also extended upstream in order to improve the hydraulic connectivity.
- A swale running along the northern toe of the mound will ensure no ponding, conveying the runoff towards the diverted watercourse.
- The planting proposal will help in reducing flow velocities, improving the flood performance.



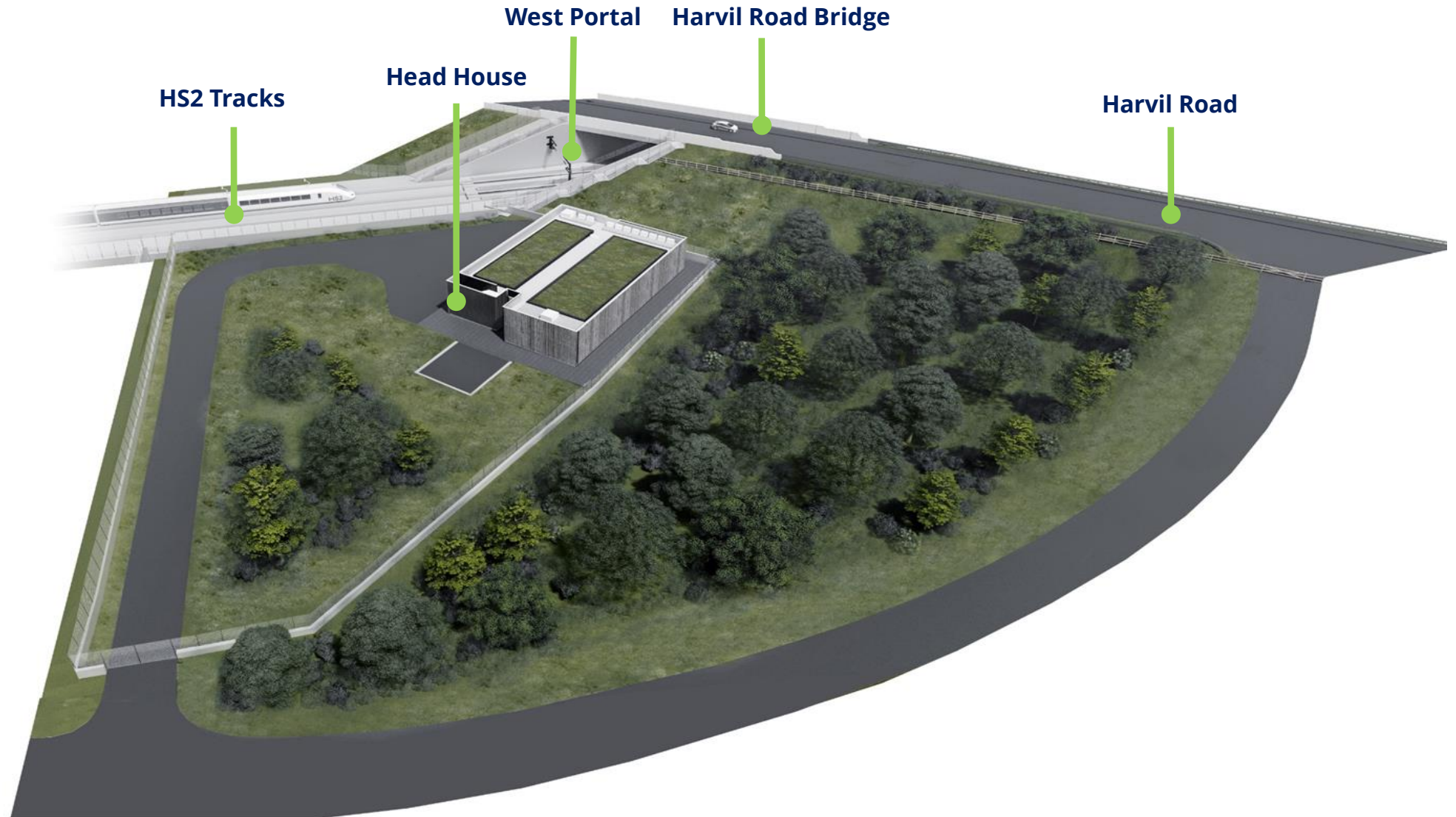
Artistic appearance – Copthall Tunnel



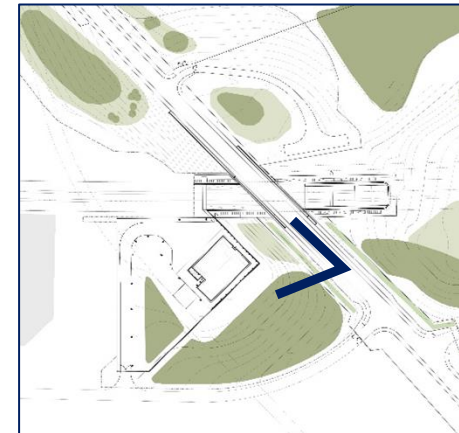
Overview Copthall Tunnel



1. West Portal, Harvil Road Bridge & Headhouse

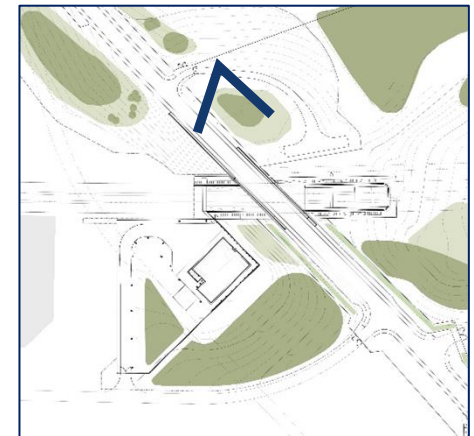


Harvil Road Bridge



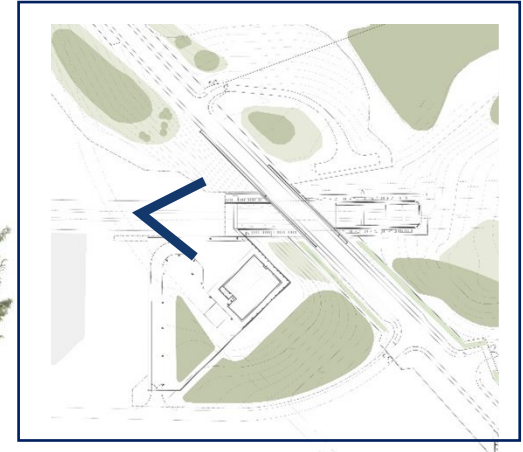
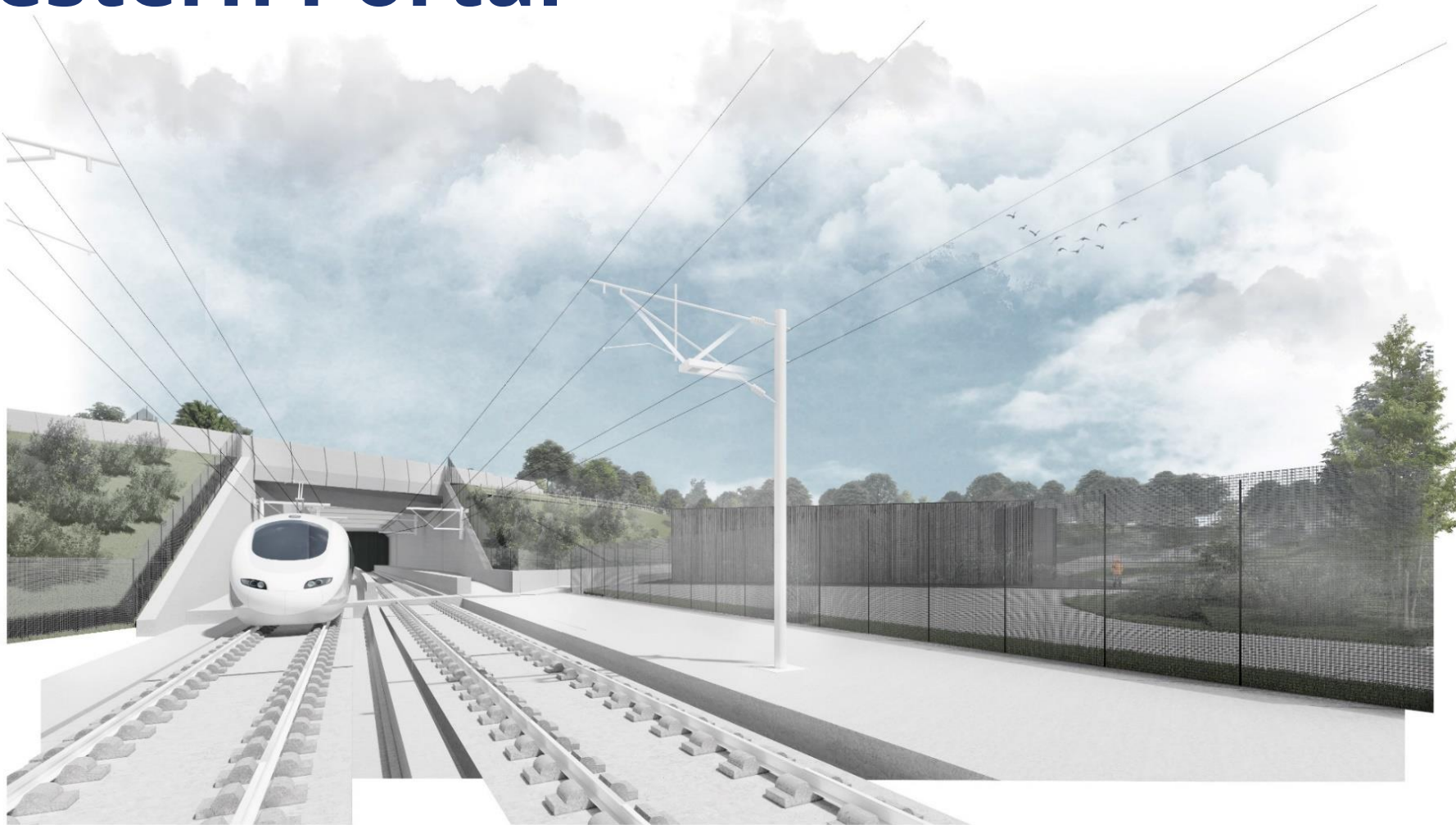
View from Harvil Road

Headhouse



View from Harvil Road Bridge

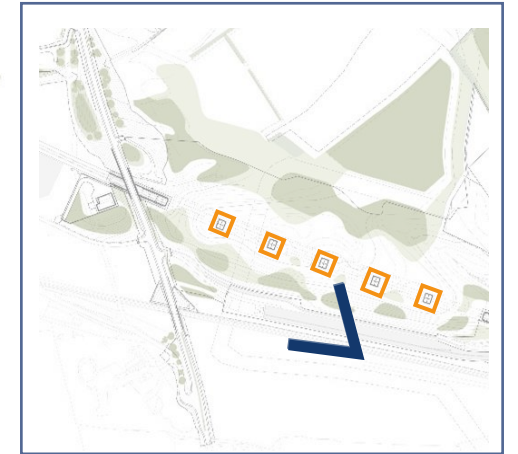
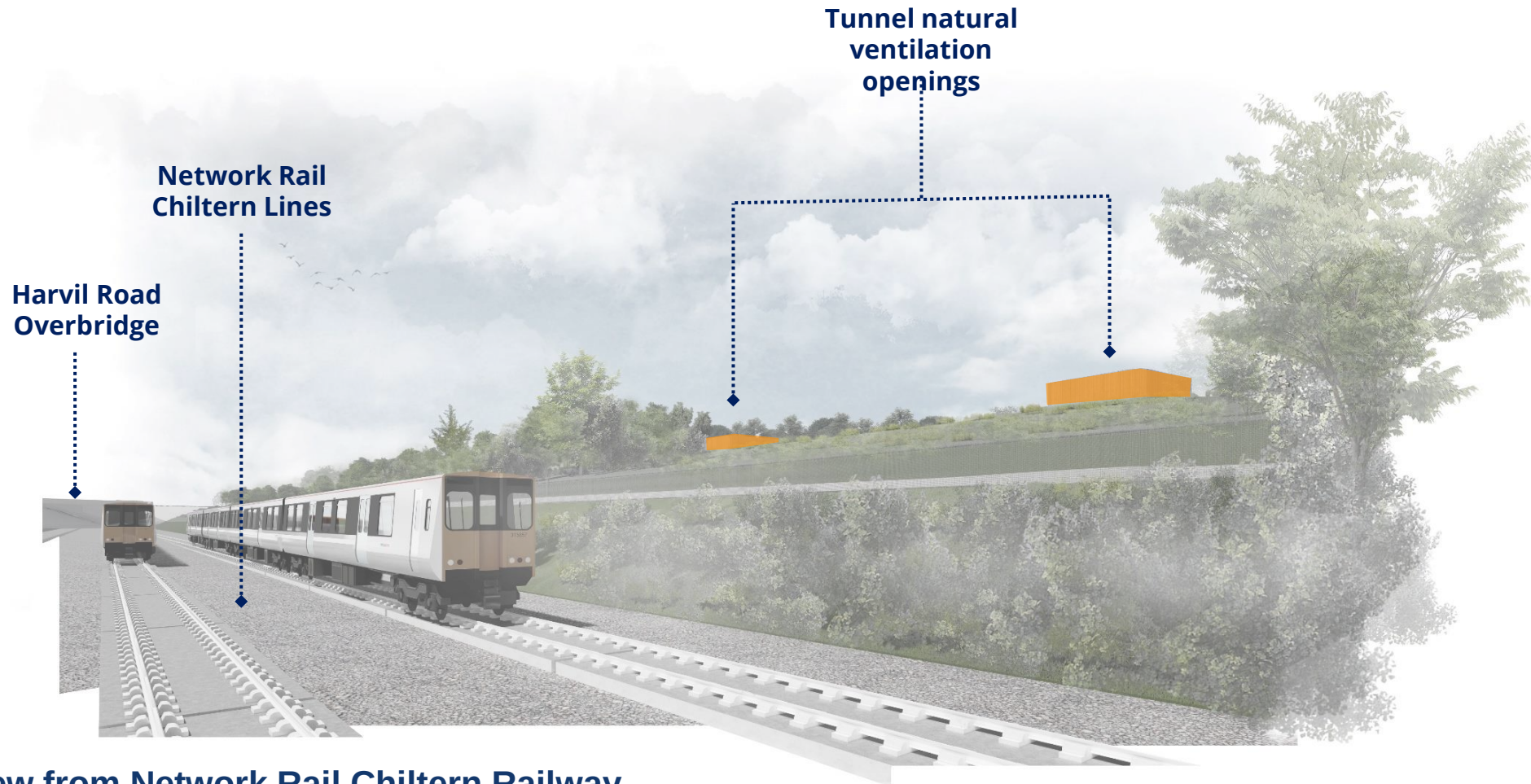
Western Portal



View from HS2 Tracks

2. Tunnel Natural Ventilation Openings

We are seeking your view: We want to hear your views on the **four** proposed materials options for the Tunnel Natural Ventilation Openings. The proposed materials for the ventilation openings have been selected to blend in with the proposed landscape and reflect the local surrounding.

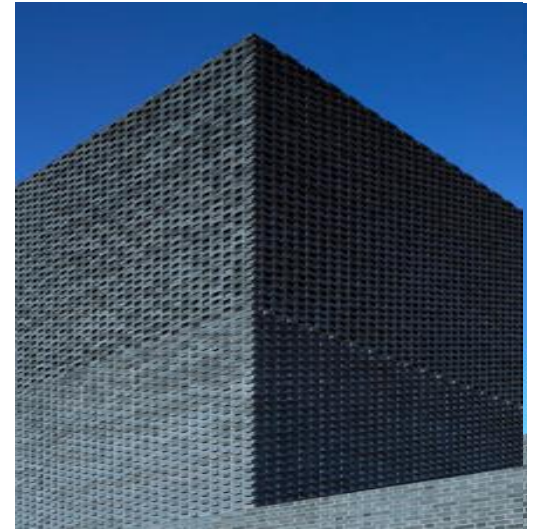


Option 1. Weathering Steel Cladding

The London Borough of Hillingdon preferred option



Option 2. Brick Cladding



Option 3. Faceted Concrete



Option 4. Ribbed Concrete Pattern



2. Tunnel Natural Ventilation Openings Options Matrix



01. Weathering Steel



02. Brick

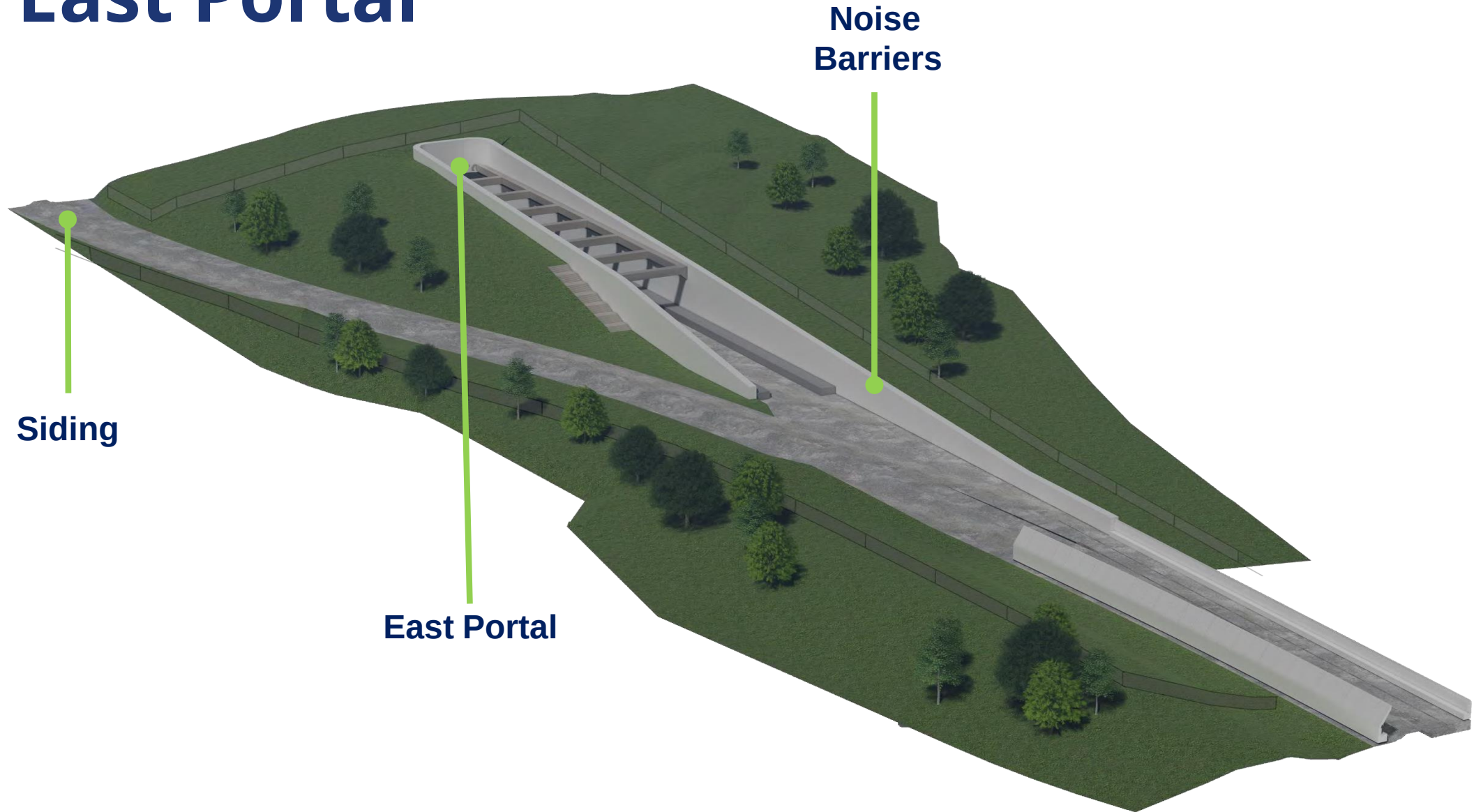


03. Faceted Concrete



04. Ribbed Concrete Pattern

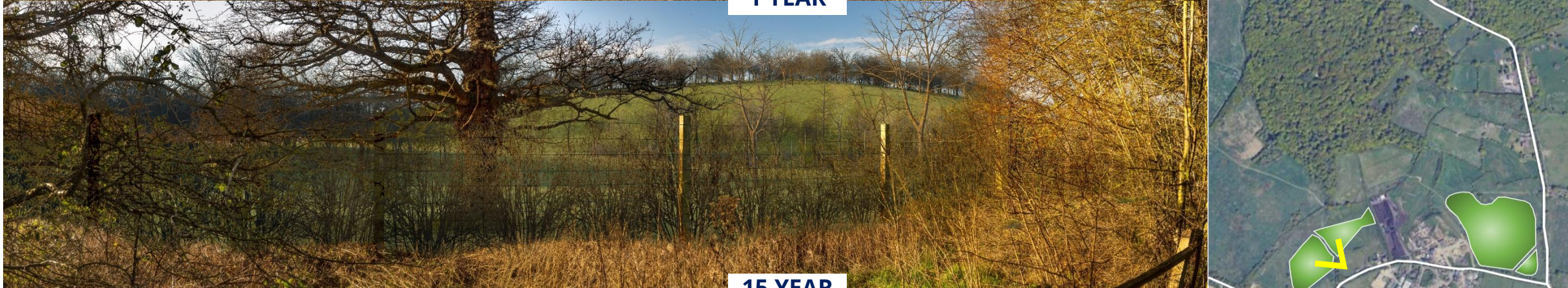
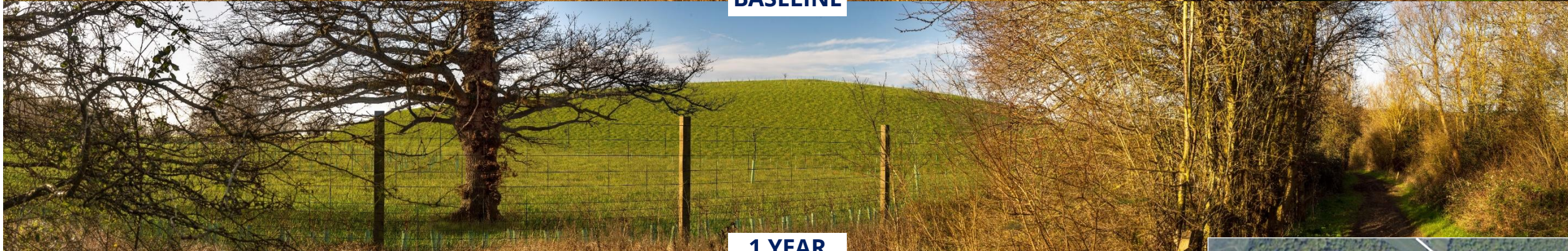
3. East Portal



Artistic appearance – Northern Sustainable Placement Area



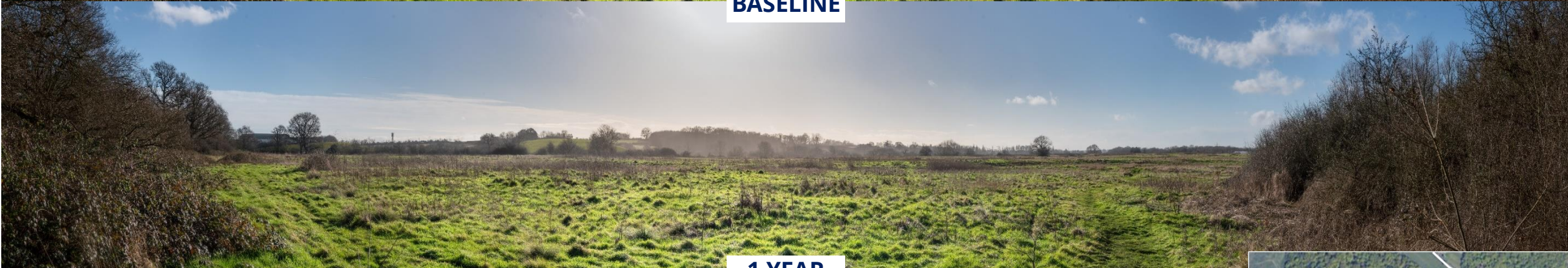
View from Newyears Green Lane looking north



View from Bayhurst Wood looking south



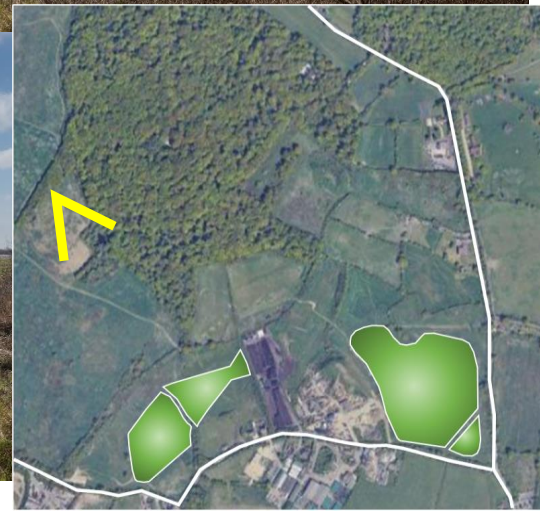
BASELINE



1 YEAR



15 YEAR



View from Rose Farm looking south-west



View from maturation site looking west



BASELINE



1 YEAR



15 YEAR



Q&A

For more information contact us at
communities@scsrailways.co.uk

