COCKENZIE APPRAISAL

TECHNICAL APPRAISAL & GUIDANCE

August 2024

East Lothian Council

Stantec

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"FOUNDATION"

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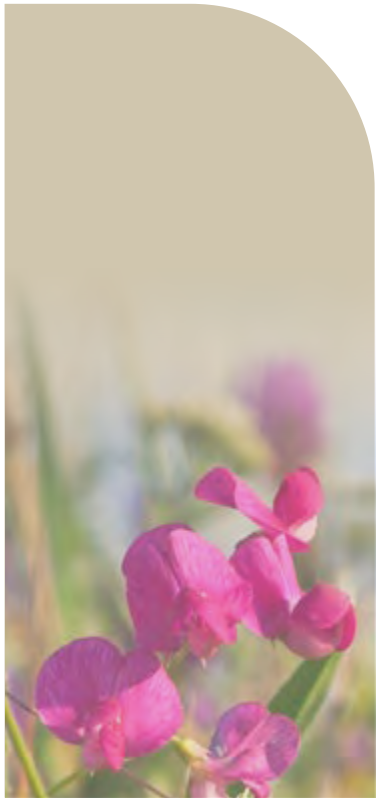
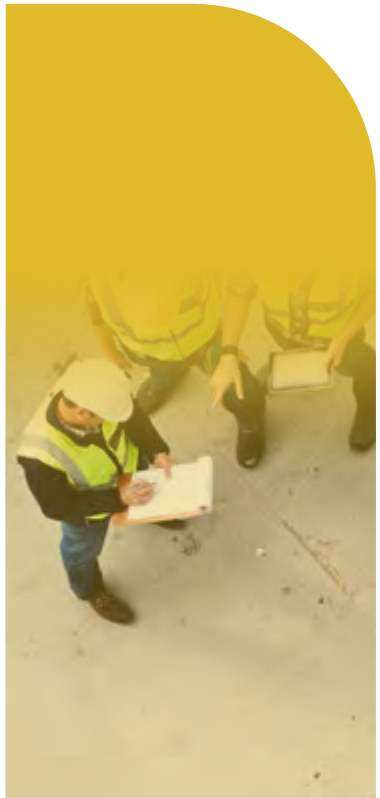
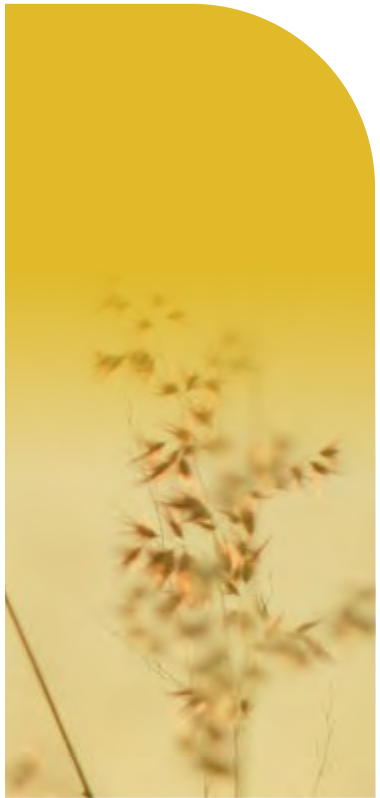
"FLEXIBLE"







1 INTRODUCTION

1.1 MISSION

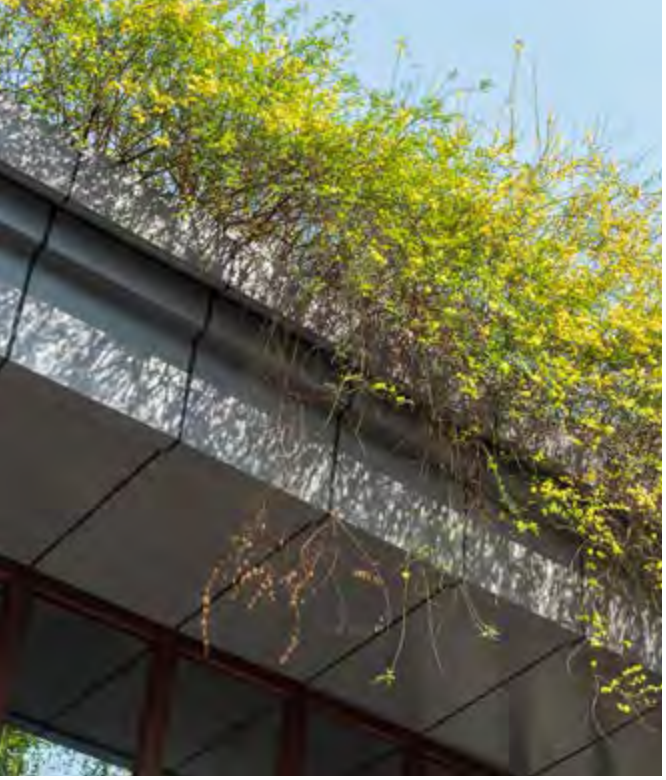
LAND AT THE FORMER COCKENZIE POWER STATION SITE IS A STRATEGIC OPPORTUNITY TO TRANSFORM AND MAXIMISE THE REUSE OF FOSSIL FUEL LEGACY ASSETS TO DELIVER WIDE RANGING OPPORTUNITIES AND LONG TERM BENEFITS LOCALLY, REGIONALLY AND NATIONALLY FOR PEOPLE, PLACES AND THE PLANET.

These include net zero infrastructure as well as low carbon heat and power opportunities, employment, regeneration and renewal, as well as ecological, wellbeing and amenity enhancements, as well as new community facilities.

This technical appraisal has explored the associated challenges and opportunities, and has produced a clear, feasible development strategy for the site that will unlock and provide a firm foundation to realise future benefits as well as provide the necessary flexibly for delivery over time.

The building blocks of this development strategy are:

- Building on East Lothian Council's (ELC's) strategy for economic development within Cockenzie and the wider region;
- Harnessing the unique advantages of the site, including the potential offered by the adjacent power supply and East Coast Main Line rail connection to driving forward ELC's strategy for employment growth and job creation;
- Deliver an exemplary appraisal and layout which is in keeping with local and national policy, including National Planning Framework 4 (NPF4);
- Provision of a high-quality industrial / business park with the flexibility to respond to market demand and future needs;
- Marketable development areas that can be viable and which are suitably accessed, serviced and take cognisance of local constraints;
- Development areas set within an attractive landscape setting that respects cultural and natural heritage assets and provides a significant open space network (over 50% of the site) offering significant biodiversity net gain;
- A utilities and servicing strategy focused on the integration of a comprehensive green and blue infrastructure network as part of a strategy for significant ecological enhancement;
- Encourage, promote and facilitate development that minimises emissions and adapts to the current and future impacts of climate change and the proposals resilience to them;
- Provision of local community benefits within significant open spaces, alongside new and enhanced public amenity areas, the form of which can be informed by the community itself; and
- An accessible and sustainable employment location and community assets with the opportunity to strengthen local foot and cycle path connections and encourage active travel.



1.2 PURPOSE & THE BRIEF

EAST LOTHIAN COUNCIL REQUIRES A TECHNICAL APPRAISAL BE UNDERTAKEN OF THE FORMER COCKENZIE POWER STATION SITE TO IDENTIFY OPTIONS FOR HOW THE SITE COULD BE DIVIDED INTO DEVELOPMENT PARCELS AND SERVICED FOR FUTURE ECONOMIC DEVELOPMENT USES.

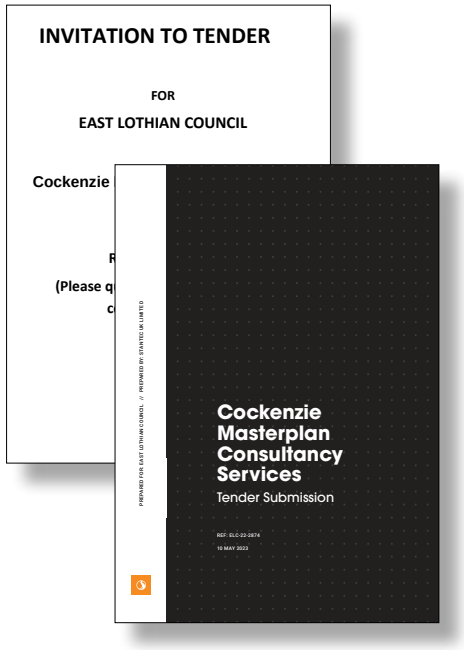
This technical appraisal will be used to inform Council decisions on how the site can be taken forwards and remodelled for development.

The Council purchased the site with the aim of economic redevelopment to provide jobs, to not only make up for those lost in the closure of the station but also aid the economic regeneration of this more deprived part of East Lothian.

The Council does not intend this appraisal to be a formal planning document such as Supplementary Planning Guidance, but rather to set out a professional opinion on how the site could be taken forward.

Purpose

- Set out a feasible development strategy for the site, considering the environmental and infrastructure opportunities and challenges, and how to address them to achieve a high-quality outcome at an acceptable cost;
- Define areas that would be suitable for different types and scales of development, preferred land uses for them, as well as the overall development capacity of the site and its development parcels to derive the associated values;
- Provide a basis for considering how best to approach the site's phased development over time, considering the need for site servicing, benefits realisation and viability and affordability considerations;
- To provide an evidential basis for business case development and to seek wider support for delivery if and where required - for example in terms of market failure, net zero power or heat solutions, and in terms of opportunities for amenity areas and cultural and natural heritage;
- To inform the options for future approaches to procurement and delivery and the estates, asset and financial strategy for the site;
- To set a context for future market testing and marketing as a basis to engage with future investors and / or delivery partners; and,
- Provide an evidential basis to shape the future commercial, financial and management considerations for the site.



Key Objectives

- Identification of physical and developmental constraints;
- Identification of the site parameters, requirements and restrictions of various potential uses and occupiers would require and associated potential employment levels;
- Identification of developable parcels that can be separate or combined to allow for larger or smaller users;
- Identify what the development potential of these parcels is, in various use types (office, light industrial, manufacturing, etc.), with details of realistic plot ratios and floor spaces;
- Identify access / service arrangements, including walking & cycling and greenspace connectivity;
- Identify servicing requirements for the development parcels including power, water, drainage and digital.
- Consider the integration of the rail connection;
- Consider an outline cost plan; and,
- Engagement with stakeholders and reporting of feedback.

1.3
AN EVOLVING TECHNICAL APPRAISAL

STANTEC WERE COMMISSIONED TO PREPARE THE HIGH LEVEL 2017 MASTERPLAN AND PROVIDE TECHNICAL INPUT TO THAT PROCESS. UNDERSTANDING THIS COMPLEX SITE ENABLED A TECHNICALLY ROBUST YET FLEXIBLE DEVELOPMENT STRATEGY FOR THE SITE TO EMERGE FROM THAT EARLIER WORK.

AN APPRAISAL IN THREE PARTS

The 2017 exercise set out the components of an exemplar masterplan, a landscape strategy and design. This appraisal process takes the next step identifying the foundations for and flexibility needed in a development strategy that needs to go further and yet retain a level of flexibility and will need to effectively integrate a variety of building footprints and development sites, hard infrastructure, best practice green, blue, digital and energy infrastructure as well as active travel / health and well-being.

This document summarises development constraints, and provides a technical appraisal of necessary infrastructure demonstrating how the site can be serviced, and rationale behind how the site can be parcelled for subsequent economic development. It also sets out design guidance for potential parcel layouts, the appearance of built form and other considerations.

This document splits the proposal into three sections; 'foundation elements', and 'flexible elements' which is subdivided into 'built form' and 'open spaces'.

Fundamentally, this structure balances the need for certainty in providing a technical baseline appraisal which demonstrates feasibility with infrastructure and servicing, and the extent of development parameters with the flexibility through design guidance for development parcels, urban design and appearance principles.

The aim of the technical appraisal is to also ensure a level of design quality and to assist in achieving a distinct development by means of a system of principles and rules in the built form and public realm.

These will provide the basis for a recognisable architectural language and use of materials to embed the Cockenzie redevelopment in its natural and edge setting.

The three sections are as follows:

- Elements which are constructed, committed or are enabling components for any future development proposal. These include development underway or consented and key pieces of committed infrastructure or infrastructure required to future proof the scheme, development boundaries and platforms (including indicative levels). These are covered in the Technical Appraisal (page 47);
- Elements which remain flexible and responsive to market condition. These areas comprise the content of the main development zones, and details are covered in Design Guidance: Built Form (page 65); and
- Elements which remain flexible and responsive to community engagement and support. These areas comprise green, community and natural spaces which are more variable and community driven and guidance is covered in Design Guidance: Open Space (page 89).

TECHNICAL APPRAISAL

This section which sets out site-wide elements which are considered 'foundation components'. This extends to servicing and accessing development areas and platforms and covers:

- Primary Development Areas
- Committed Development
- Drainage
- Access
- Utilities / Service Strips

"FOUNDATION"

Technical Appraisal (page 47);

DESIGN GUIDANCE

This section which sets out principles / guidance which are considered 'flexible'. This is split into Design Guidance: Built Form and Design Guidance: Open Spaces and outlines best-practice approaches covering:

Built Form (Market Driven):

- Land Use
- Height, Scale & Massing
- Topography
- Access & Movement
- Layout
- Appearance
- Sustainability

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Design Guidance: Built Form (page 65)

Green / Open Spaces (Community Driven):

- Landscape: Key Spaces
- Public Space
- Drainage
- Play
- Public Art

"FLEXIBLE"

Design Guidance: Open Space (page 89)

2 CONTEXT & BASELINE

2.1 SITE LOCATION

SITE LOCATION

Cockenzie is a town which sits adjacent to Port Seton and is located on the Firth of Forth, c.6.5km east of Musselburgh, c.2.7km north of Tranent and c.14km east of Edinburgh City Centre.

The site is bound to the west and east by predominantly residential development consisting of Prestonpans and the community of Cockenzie and Port Seton, respectively. A landscape bund sits within the site at the centre of the western edge. The existing Preston Crescent Gardens also sit within the site at the south of the western edge.

The southern perimeter is defined by the B1361 which runs parallel to the East Coast Main Line to the south. There is a rail spur extending into the site from the south western corner which connects to this and provides direct access. Further to the south the site is increasingly rural and natural in form.

The eastern perimeter is defined by the B6371 and sits adjacent to open fields at its southern half, with its northern half sitting adjacent to predominantly residential development consisting of the community of Prestonpans.

The northern boundary is defined by the Firth of Forth, and features the John Muir Way which runs parallel to the coast in a broadly east - west direction.

SITE DESCRIPTION

The site extends to c.100ha and consists of predominantly made ground, however also features a mix of agricultural fields and open spaces.

North of the B1348 there is an area of open space consisting of Greenhills and Prestonpans Beach to the south, and made ground from the former Cockenzie Power Station to the north. The latter currently accommodates a former emergency response room building, a jetty, and parking. The John Muir Way traverses this part of the site, following the coast.

South of the B1348 there is an existing Scottish Power Grid Connection Substation from which high voltage power lines exit and traverse the western and north eastern edge of the site. Here also sits an access road which runs east - west, then south parallel with the B6371 and is currently within the compound. This connects to the B6371 at the sites eastern boundary.

South of this access road sits the former coal storage and handling area, located c.300m south east of the existing substation. This is bound on all sides by a c.5.5m high earth bund, which to the south east supports the railway spur from the East Coast Main Line. This consists mostly of bedrock and with some scrub and naturally seeding plants / trees on the bunds themselves.

South of the railway spur there is some existing agricultural land which features a number of heritage designations.

There are a number of committed development located throughout the site, predominantly located towards the north, and the proposed Link Road connecting the B1348 with the B6371 (hereafter referred to as the proposed Link Road) consented to run east / west through the centre of the site broadly following the route of the east / west portion of the existing access road.

Figure 1- Site Location Plan

Site Boundary

2.2 SITE HISTORY

THE SITE HAS A VARIED HISTORY, A SUMMARY OF WHICH IS OUTLINED BELOW.

1967 — 2015 — 2017

Cockenzie Power Station

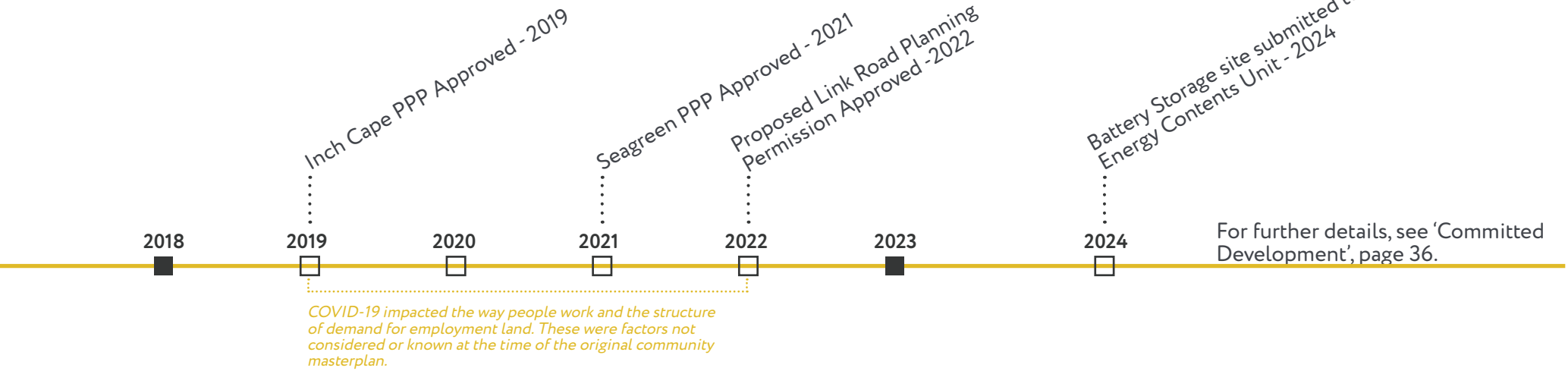
Cockenzie power station was a coal-fired power station which occupied the site and dominated the local coastline with its twin chimneys from 1967 until their demolition in September 2015. Initially operated by the nationalised South of Scotland Electricity Board, it was operated by Scottish Power following the privatisation of the industry in 1991.

The removal of the power station was done in stages with the twin chimneys and turbine hall being demolished in a controlled explosion on 26 September 2015, the front section of the boiler house on 4 November 2015 and the rest of the boiler house on 17 December 2015. This was the last remaining major structure to be removed.

2017 Masterplan

In advance of the expected purchase of the site, in 2017 the Council facilitated the development of a community consulted masterplan, which split it into four 'zones' with a number of potential uses. These included office, retail, cafes & restaurants, community uses, energy and business / industrial units. The masterplan was not formally adopted by the Council but it signaled the aspirational vision for change for the site. However, it did not identify how the site could be technically developed, serviced and arranged into flexible development parcels that could be subsequently marketed by the Council for economic and low to zero carbon energy uses.

The reason the masterplan was not adopted was due to the potential conflict with National Planning Framework 3 (NPF3) and its safeguarding of the site for thermal generation. This restriction has now been removed with the formal adoption of NPF4, which does not include the safeguard and instead NPF4 recognises that Cockenzie benefits from existing assets and infrastructure which can be repurposed to form the basis of new proposals.



For further details, see 'Committed Development', page 36.

East Lothian Council Acquisition

The former power station site was acquired by the council in 2018 to support ambitions to promote economic growth and create employment opportunities.

Levelling Up Funding

The Council was recently successful in round 2 of the Levelling Up Fund in securing £11.3M of funding towards site remediation and preparation works. The funding will be used to:

- Remove the bunds surrounding the coal store to re-grade that area and increase the developable area of Zone 3 by circa 8ha;
- Using around 40% of the bund material to infill the circa 5.5ha 4m deep void in the zone 1 slab where the power station was sited, to create a developable platform level with the rest of the site;
- Make repairs to and possibly raise the level of the sea wall to allow future development of the site;
- Replace a section of the rock armour along the sea wall; and
- Improve the surface of the John Muir Way as passes along the northern perimeter of Zone 1. Re-route part of the JMW to allow the removal of a stepped access bridge.

2017 MASTERPLAN

The 2017 masterplan subdivided the site into 4 zones as per Figure 2 opposite.

Zone 1 is where the main power station building was sited on a concrete slab, 4m below ground level. The Council intends to fill the void to level the site. A large substation and offshore connection infrastructure has been granted planning permission in the westernmost part of the slab (see 'Inch Cape' overleaf). Construction begun in Spring 2023 with completion expected in Summer / Autumn 2025. To the immediate southwest of this was an area of green space adjacent to the coast known as the Greenhills and it is advised that the Greenhills are not developed for economic development uses.

In Zone 2 on the south side of Edinburgh Road, is sited the remaining Scottish Power Grid Connection Substation. This building is being retained to allow offshore energy infrastructure to connect into the national grid. To the west of the grid connection building, planning permission in principle has been granted to Seagreen for a further substation to connect offshore wind power (see 'Seagreen' overleaf). There is an application to the energy consents unit for a battery storage facility sited immediately to the south of the grid connection building, in the space in-between the high voltage lines, (see 'Battery Storage' overleaf).

Zone 3 was the former coal store and is currently surrounded with the coal store bunds. There are no current consents here and the Council sees this area, along with the remainder of Zone 1 as the main remaining developable areas of the site for which are not subject to planned energy-related uses. The proposed Link Road has been granted planning permission that will connect Edinburgh Road with the B6371 and run between zones 2 and 3. The timing of the delivery of this road is dependent on the Seagreen substation being taken forward.

Zone 4 is currently in majority agricultural use and the masterplan did not identify it for future development. Planning permissions have been granted here in the past for unbuilt substations. Zone 4 is bisected by the site's rail connection to the East Coast Mainline and the historic waggonway, which was used to transport coal from Tranent to the coast at Cockenzie. However, this part of the site has potential for development and this potential needs to be explored as part of option-generation to assist future decision-making.

The Council has decided not to take forward port uses and a possible cruise terminal due to technical site constraints.

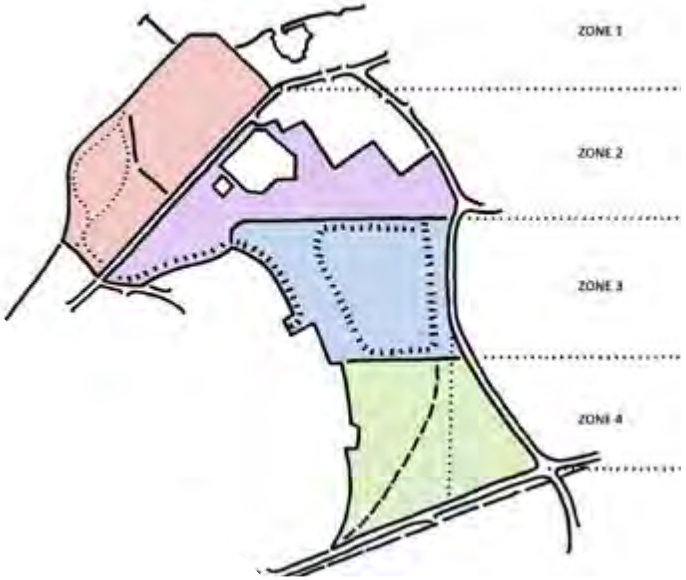


Figure 2- 2017 Masterplan and Zoning Diagram

2.3
SITE ASSESSMENT

THIS SECTION PROVIDES A SUMMARY OF THE SITE-SPECIFIC INFLUENCES THAT WILL UNDERPIN THE FUTURE DEVELOPMENT OF THE SITE.

GROUND CONDITIONS

The site extends to c.100ha and consists of predominantly made ground, however also features a mix of agricultural fields and open spaces. Land north of the B1348 has been constructed upon raised beach deposits and all topographic features have been engineered to suit land use requirements. This is therefore considered made ground. Work is currently underway to infill the circa 5.5ha 4m deep void left by the former Power Station with bund material from land south of the access road to create a developable platform level with the rest of the site. Subject to further investigation, it is likely a there will be a line of differential settlement which will need to be considered at a more detailed stage of design.

Land south of the access road consists of the former coal store area and is also made ground. An Earthworks Bund Assessment was undertaken in 2023 and found the coal store bunds comprised of made ground, primarily reworked natural materials, described as a mixture of shallow granular and deeper cohesive deposits. Below the made ground, the natural deposits were primarily cohesive with sandstone and midstone bedrock below at depths of 7.10m to 9m at the southern end of the site. It is anticipated the 'void' of the bunds is closer to the bedrock than the bunds which surround it. A lack of certainty of the position of the bedrock across this area presents an overall challenge with how best to platform the site.

The site in its entirety is designated as a 'Coal Mining Reporting Area' which indicates there is a known history of coal mining activity and that a coal mining report is required for property transactions and the conveyance process. The Coal Authority system also identifies mine openings / shallow coal mine workings throughout the site, clustered around the north west and the south. These broad areas are also considered a 'Mining: Development High-Risk Area', and whilst this designation does not preclude the potential for development it does denote an area which contains one or more recorded coal mining related feature at surface or shallow depth.

Figure 3- Coal Store Pre SLR Works

Figure 4- Ground Conditions

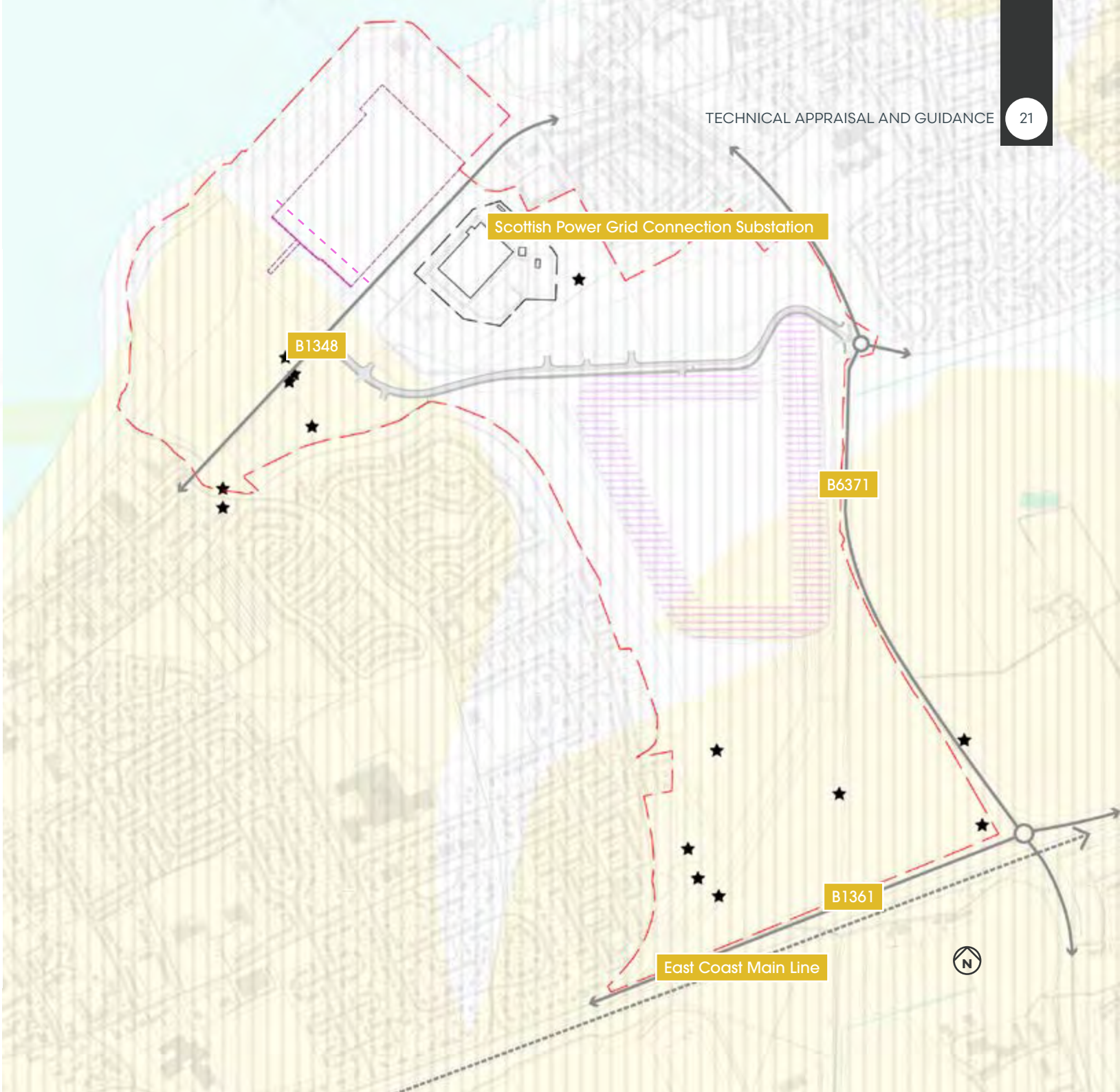
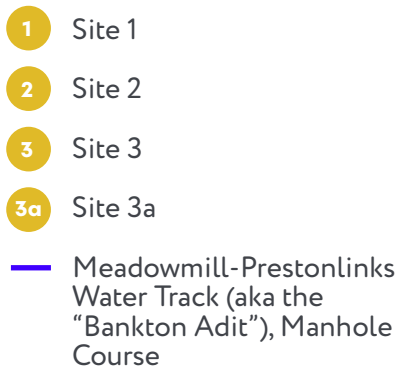


Figure 5- Mine Water District Heating Networks



Mine Water District Heating Networks

A study was commissioned by ELC to explore various options for mine water district heating networks (DHN) at the former Cockenzie power station site, and the benefits that such a DHN could bring for the council, the local area, and the resident populace. The primary aim of such a heat network would be to exploit heat extraction from an existing mine water resource to reduce greenhouse gas (GHG) emissions and alleviate local fuel poverty via reduced energy costs.

The study identified four sites with the potential to extract geothermal heat energy from mine water to supply a district heat network were identified by TRE and SEL. These were as follows:

- Site 1, located above the Prestonlinks colliery in the central Cockenzie site.
- Site 2, located at Blindwells.
- Site 3, located at Bankton.
- Sites 3 (Bankton) and 3a (Riggonhead) operating as a joint system, whereby it was suggested by TRE that mine water abstraction would occur at one site, with reinjection occurring at the other.

The study also identified the existing Meadowmill-Prestonlinks Water Track (aka the "Bankton Adit") broadly following the western site boundary.

To determine general feasibility of heat networks in the area, various potential routes for the heat network were modelled. These routes have focused on site 1, which is believed to be hydrologically separate from the other sites, although this should not be taken to mean that site 2 and site 3/3a are not also potentially viable opportunities.

The qualitative ranking concluded that there were a number of outcomes rated 'High' in terms of overall favourability, with the following ranking 1, 2 and 3 respectively;

- Borehole abstraction with direct discharge into the Firth of Forth serving the existing demands of Prestonpans North
- Borehole abstraction with borehole reinjection serving the existing demands of Prestonpans North
- Borehole abstraction with direct discharge into the Firth of Forth serving the existing demands Cockenzie & Port Seton

There is the opportunity to consider other on-site, renewable, energy generation and the adoption of measures to achieve net-zero carbon. Thse could include:

- Photovoltaic (PV) panels
- Ground source heat pumps
- Sea source heat pumps
- Combined heat and power (CHP) systems


1
3a
2
3

TOPOGRAPHY

Topographic survey information for land north of the B1348 shows perimeter levels of between 4.85 – 5.00m Above Ordnance Datum (AOD), with the footprint of the power station itself sitting at a lower elevation of c1.29m AOD. As this land has been constructed upon raised beach deposits, all topographic features have been engineered to suit land use requirements.

Land south of the proposed Link Road, including the former coal storage area, falls from an elevation of c 34.0m AOD at the southern boundary adjacent to the B1361 northwards to the existing Cockenzie Sub-station which sits at an elevation of c 5.2m AOD. Levels within the former coal storage area fall northwards from 27.4m AOD along the southern edge to 11.5m AOD along the northern boundary.

A Note on Levels and Bedrock

There isn't a full picture of the location or type of bedrock until further assessments have been undertaken, however from investigations to date (notably SLR's recent assessments discussed overleaf) it is a fair working assumption that the bedrock sits c.1m below ground level. As a result any platforms would effectively be fixed at their southernmost point c.1m below ground level and would rise to the same height that the ground drops over the platform length.

Figure 6- Levels Diagram

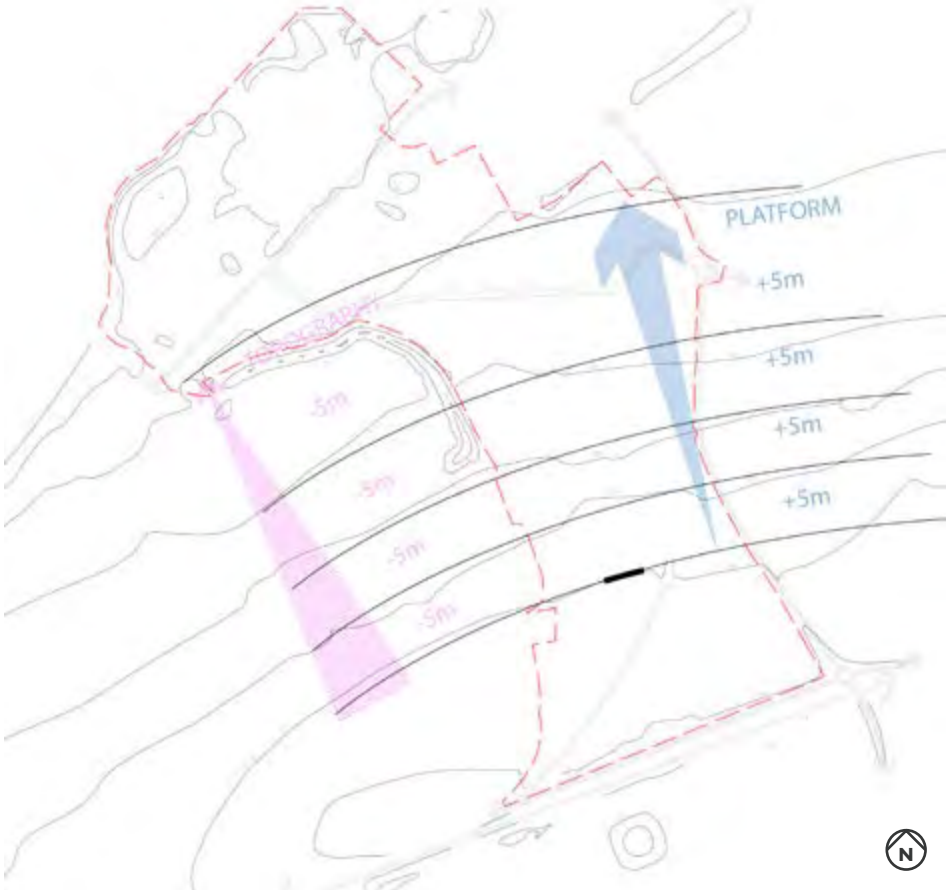
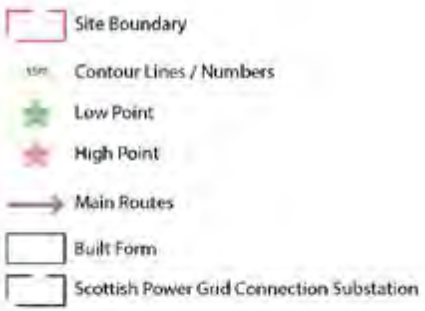


Figure 7- Topography



DRAINAGE

Flooding

According to SEPA flood maps, the site is at limited risk from sea flooding, with the medium / high risk line running parallel with the coastline.

The mapping also identified pockets of surface water flooding within the low lying areas of the former power station footprint, however with work underway to fill this in with the bund material from the south of the site it is anticipated this won't pose a risk to any potential development. Any impact from wave overtopping can be addressed by future works to the sea wall.

A surface water drainage ditch routes north along the western edge of the former coal storage area bund discharging to private surface water drainage in the vicinity of the existing substation prior to discharging to the Firth of Forth.

SuDS

The site predominantly slopes from south to north. The site will use Sustainable Urban Drainage Systems in the form or ponds, basins or swales to attenuate surface water run-off before being discharged at a greenfield run-off rate into the Firth of Forth.

Infrastructure

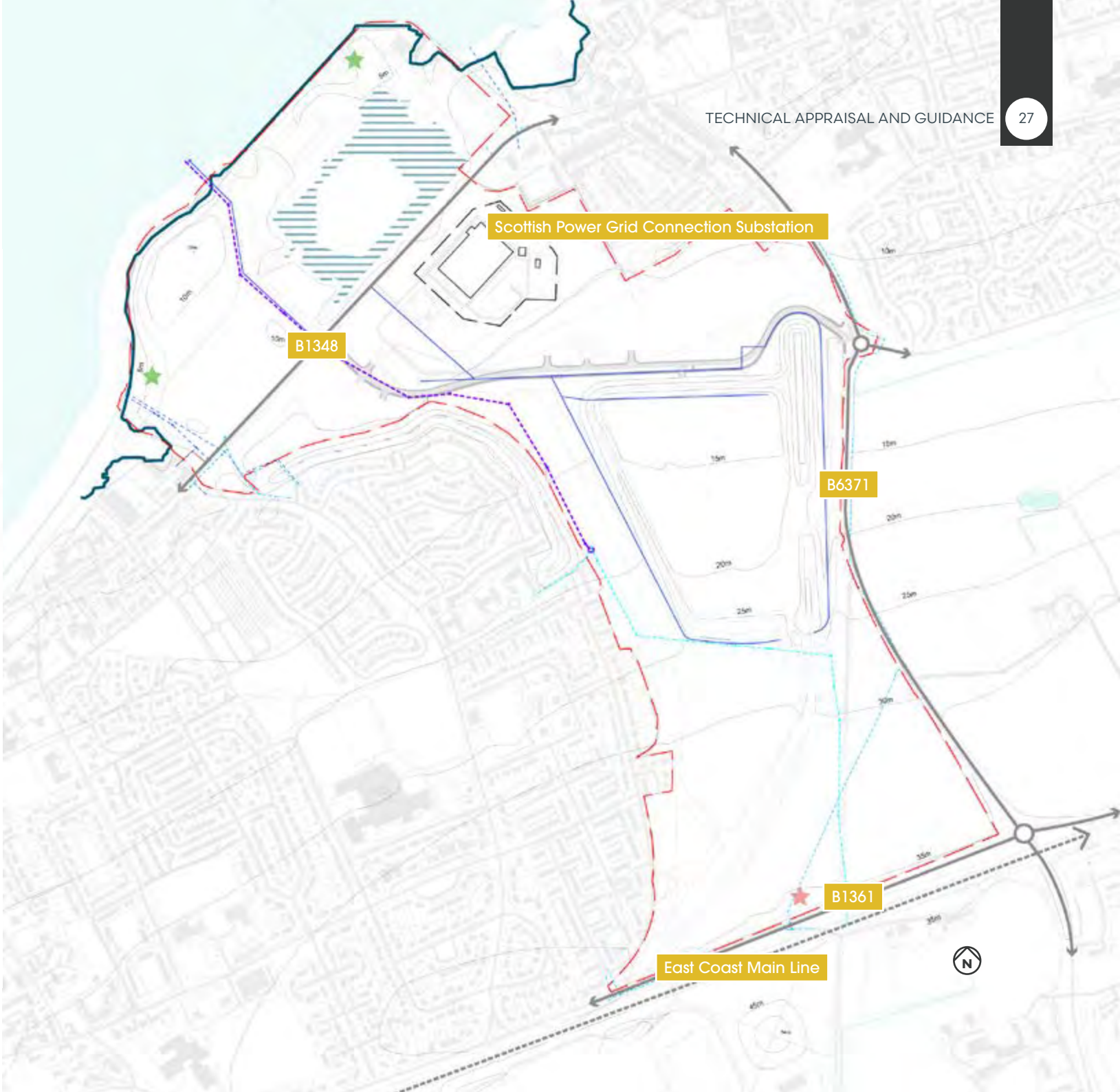
Within the site boundary there are a number of Scottish Water sewers identified, including a combined rising main (Coastal Trunk Sewer) which routes along the B1348, and combined sewer and CSO outfall pipe which is believed to be the route of what is known as the 'Bankton Adit'. These are summarised as follows:

- A 1050mm diameter combined sewer routes north in the south of the site then routes west south of the coal storage area then north along the west boundary with a CSO discharging into the 1050mm diameter surface water sewer which routes north to its outfall in the Firth of Forth;
- A 350mm diameter rising main is located in the north verge of The Edinburgh Road;
- A 10 inch diameter water main is located in the north verge of Edinburgh Road with a 6 inch spur feeding a hydrant south west of Cockenzie substation;
- A 250mm diameter water main crosses the southern margins of the site in a north easterly direction; and,
- A land drain crosses from the southern margins of the site in north easterly direction and discharges to the Firth of Forth, running broadly parallel with the combined sewer outflow.

Figure 8- Drainage

- Site Boundary
- Contour Lines / Numbers
- Low Point
- High Point
- Main Routes
- Built Form
- Scottish Power Grid Connection Substation
- Land Drain (Approximate)
- Sea Flooding Risk
- River Flooding Risk*
- Potable Water Main
- Combined Sewer Main
- Combined Sewer Overflow Main
- Surface Water Main
- Foul Sewer Main

*Due to the absensce of a River in the immediate context, it is considered this is an anomoly, and for the purposes of this assessment has been considered 'Surface Water Risk'.



ACCESS & MOVEMENT

The modes of transport to and from the site have been considered against a hierarchy of solutions. The intention has been to offer the opportunity to access the site via sustainable travel modes over private vehicle use The road user hierarchy defined in the National Transport Strategy applies, which shows walking and wheeling as the highest priority mode of transport, followed by cycling, public transport, taxis & shared transport, then the private car, in that order.

There are a number of Core Paths and informal footpaths surrounding and crossing the site. Pedestrians and cyclists can access the site alongside vehicular access points, and from connections made to existing foot / cycle path provision surrounding the site, notably the 1722 Wagonway and the John Muir Way.

There will be the opportunity for several pedestrian and cycle access points around the site's perimeter as part of a comprehensive active travel network which will integrate and incorporate existing footpaths and connect all areas of the site. It has been identified that there is the opportunity to use the existing railway spur and north / south portion of the existing access road to form a key north / south active travel route; the people mover. This will form the backbone of an active travel strategy which integrates and connects with existing paths and also generally improve east / west active travel connections.

The delivery of the proposed Link Road is a key piece of transport infrastructure. This link road will provide access to the proposed development areas towards the south of the site and will connect with the B6371 with the B1348 to the east and west, respectively.

An access road leading south from the Link Road, running within the pylon corridor to the west of the southern area of the site can provide access to this area. There is the potential to upgrade the north / south portion of the existing access road such that it can also serve as an emergency access from the B6371 to the east. Vehicle access for northern development areas can be served from the B1348.

Figure 9- Core Paths

Figure 10- Access and Movement

HERITAGE

The site has a number of heritage constraints, predominantly focused around its south eastern corner.

Scheduled Monument

There is a scheduled monument (Seton West Mains) in the southern corner of the site, a prehistoric domestic and defensive enclosure. The settlements lie buried beneath the plough soil and are visible as cropmarks captured on oblique aerial photographs.

Battlefield Inventory

The southern portion of the site sits within the Battle of Prestonpans 1745 site. Historic Environment Scotland provide commentary on its status:

"Overall, the semi-industrial character of the battlefield landscape is still predominant. The power station, which is a major feature in the modern landscape, has impacted on the battlefield area with a rail line, coal store and pylons running across the landscape. The battlefield area includes parts of the former mining towns of Tranent, Prestonpans, Cockenzie and Port Seton, while a considerable portion of the land between the main battle site and the old core of Preston village is now occupied by housing".

There is potential for any new development to impact on currently unknown archaeological remains. This will need to be considered as the ambition is taken forward. However, this portion of the battlefield has been heavily impacted by previous industrial activity, notably the bunds creating the coal storage area that is the main focus of the southern portion of these proposals.

Conservation Area / Listed Buildings

The northern part of the site is located adjacent to a conservation area (Cockenzie and Port Seton). There are a number of listed buildings in Cockenzie, Port Seton and Prestonpans and the surrounding area. The nearest listed buildings are 'Seton West Mains Farmhouse With Garden Walls a C-Listed building located c.270m to the east of the site, 'Methodist Chapel With Boundary Walls', a C-Listed Church and 'Cockenzie Harbour', a B-Listed harbour, both c.150m from the north eastern boundary of the site.

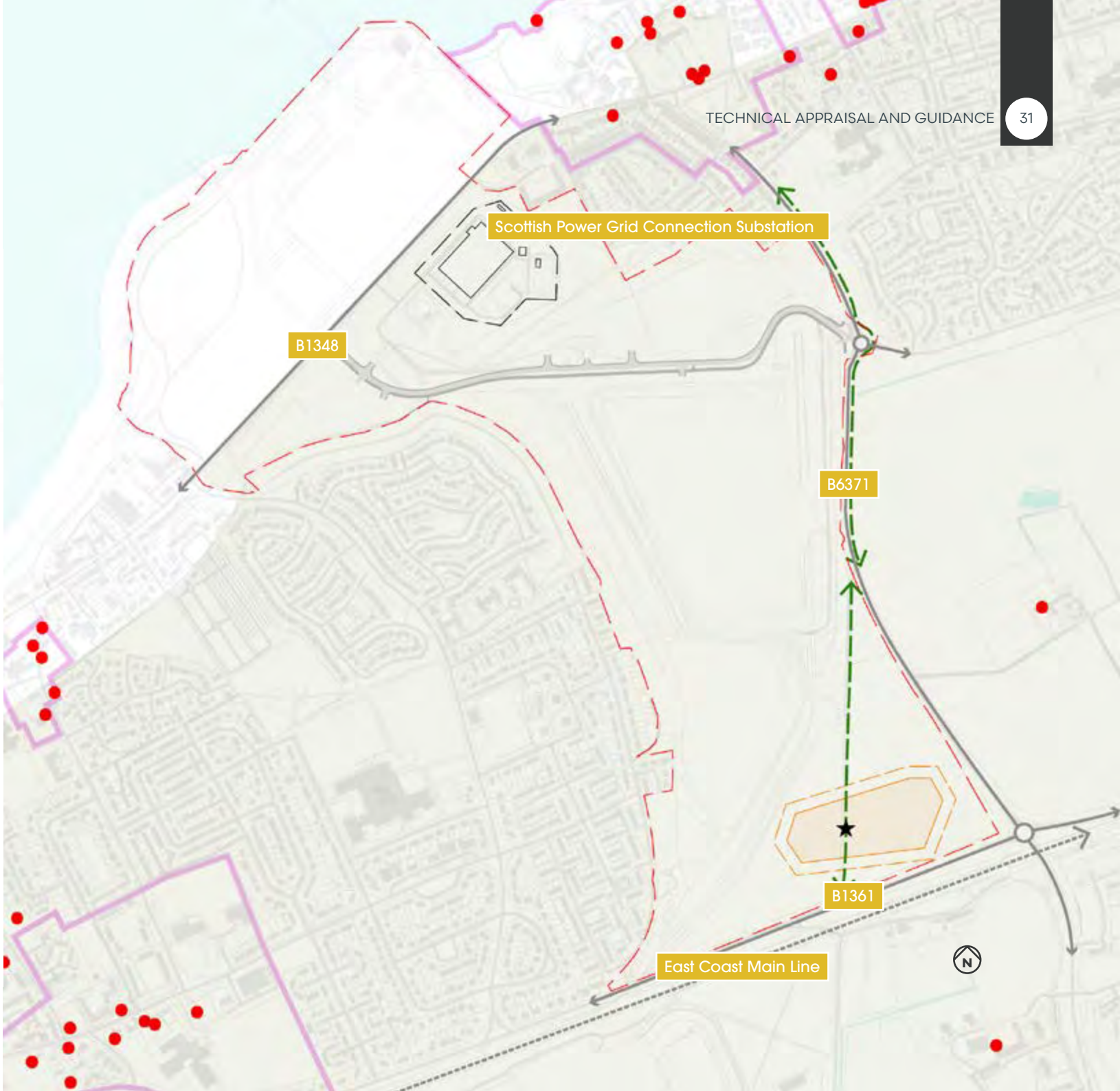
1722 Waggonway

The 1722 Waggonwayis a footpath which follows the route of Scotland's first railway, the Tranent - Cockenzie Waggonway. It is currently designated as a Core Path.

Memorial Tables

In 2018 two memorial tables were installed on the 1722 waggonway which runs through the western part of the battlefield, approximately at the location shown on the adjacent plan. These memorial tables list the regiments and clans which fought at the battle, dedicated to those who fell in the fighting.

Figure 11- Heritage



LANDSCAPE / MARINE

Landscape Features

The site contains an abundance of open space of varying kinds, including woodland, scrub, agricultural land and areas where landscape is beginning to overtake former industrial areas. There is self-seeded scattered planting / scrub present across the site. More mature woodland is present broadly forming two belts, one following the western site boundary, and the other following the eastern site boundary and adjacent to the railway spur.

At the centre of the site's western boundary there is an existing community orchard extending south, following the foot of the bund / fence line. The area immediately to the south west of the former power station building is the "Greenhills" which is open space that is used by the community for informal recreation activities such as dog walking and cycling. The existing Preston Crescent Gardens, Open Space and Play Area is located to the south west of the site.

The coal store bunds and other elevated earth structures are currently in place, however plans are in motion to regrade the south of the site and infill a void in the north of the site with this material.

There is one existing landscape bund following the recent Persimmon development adjacent to the site's eastern boundary, and another is proposed as part of the Battery Storage application north of the Access Road.

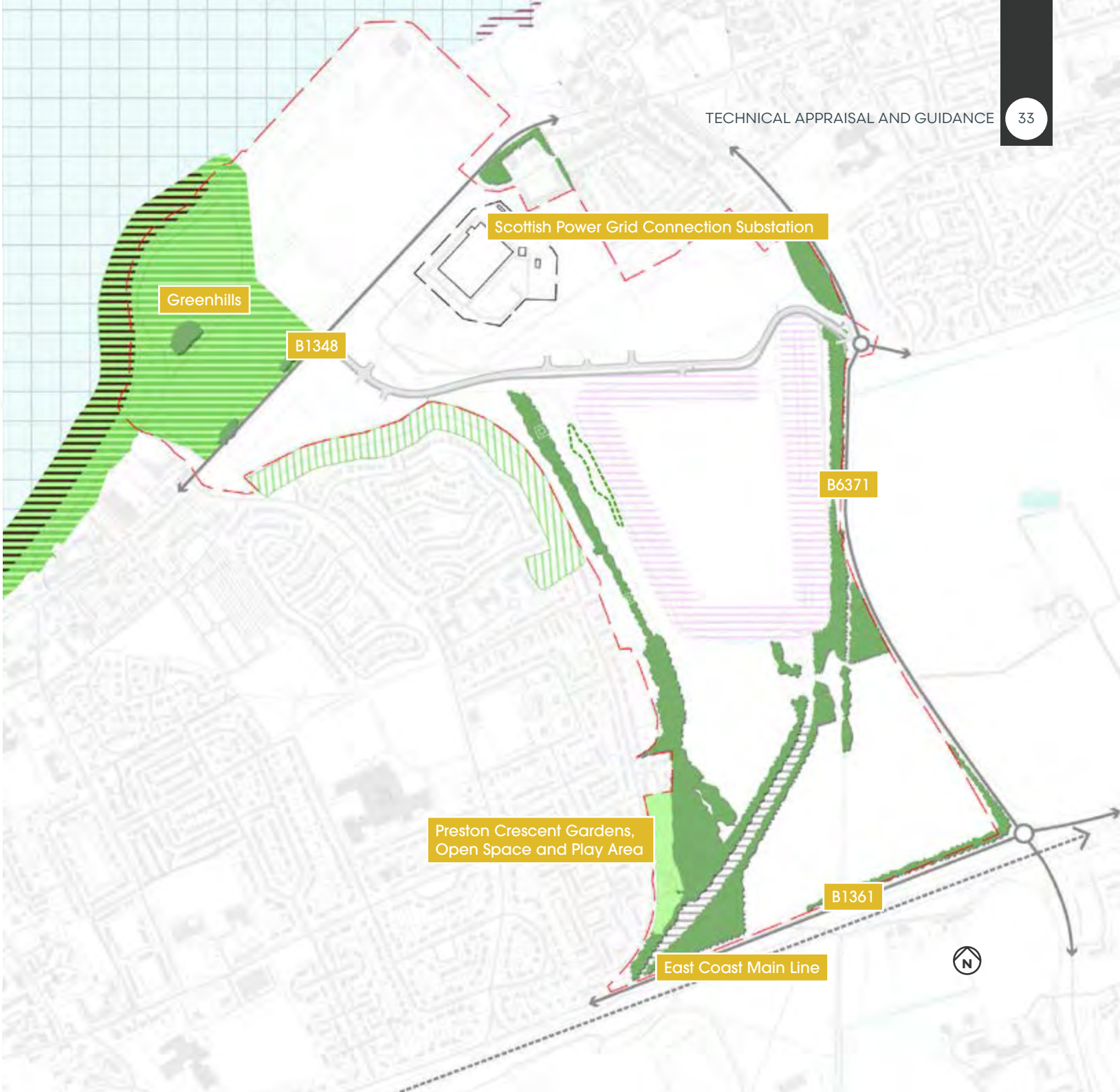
The railway spur enters the site at its south western corner and extends into the middle of the southern part of the site.

Designations

The Firth of Forth is protected by Ramsar Wetland of International Importance, site of Special Scientific Interest (SSSI) and The Firth of Forth Special Protection Area, as well as The Outer Firth of Forth and St Andrews Bay Complex Special Protection Area under the European Wild Birds Directive.

The open space to the south of the SSSI designation, Greenhills, is designated a Special Landscape Area.

Figure 12- Landscape Plan



UTILITIES

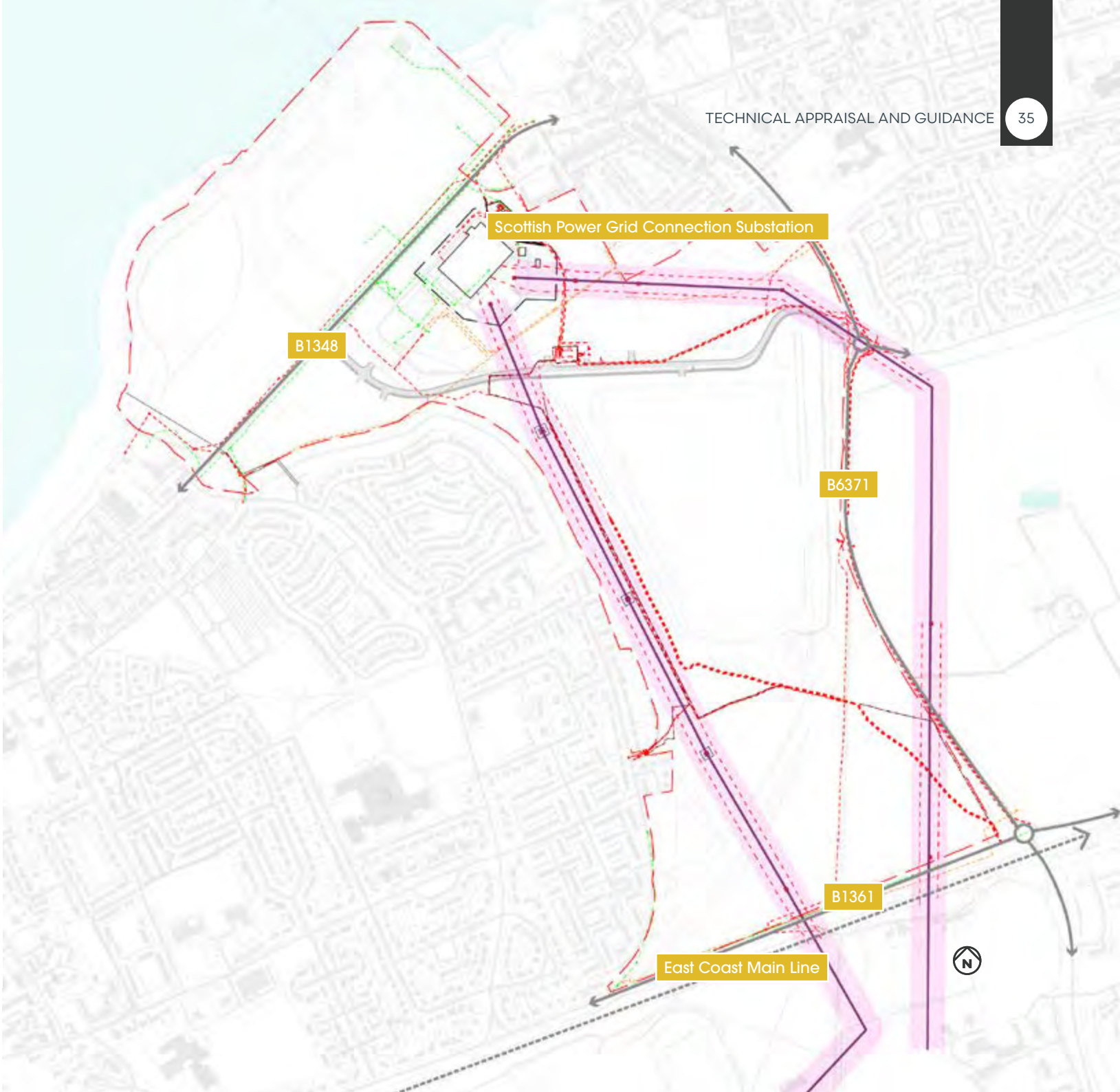
There are a number of existing utilities and services running over and under the site. These can be summarised as follows:

- There is an existing transformer substation within the site, situated to the south of the B1348. This substation forms a significant node in the grid system and has therefore not been demolished as part of the power station redevelopment;
- 275kV overhead cables route from Cockenzie substation south along the western boundary of the site. 33kV cables route north south between the 275kV cables and the former coal storage area;
- 400kV overhead cables route east from Cockenzie substation to the roundabout on the B6371;
- 11kV cables route south from Cockenzie substation to the Prestonpans primary substation, from where cables route east and west to the residential settlement either side of the site;
- Low pressure gas mains route south from the former SGN Gas holder before splitting east and west to the residential areas beyond the east and west boundaries;
- Medium pressure gas mains route south from the former SGN Gas holder before routeing east to the residential areas beyond the east boundary; and.
- BT Openreach cables service the existing substation from Edinburgh Road.

For water/foul utilities, please see 'Drainage'. As there are a number of surrounding applications in the pipeline / in development this baseline may change.

Figure 13- Existing Pylons on site

Figure 14- Utilities



COMMITTED DEVELOPMENT

Inch Cape

Inch Cape was granted planning permission in principle in 2019. This was approved by Scottish Ministers for onshore transmission works associated with off-shore Inch Cape wind farm. Inch Cape Offshore Wind Farm, currently progressing towards full construction, will feature up to 72 turbines sited 15 kilometres off the Angus Coast in the North Sea. The power it generates will be transported 85 kilometres to a new substation at Cockenzie, in East Lothian from where it will enter the national transmission system. This is located north of the B1348 and north east of Greenhills at the centre of the portion of the site which sits north of the B1348.

Seagreen

Seagreen was granted planning permission in principle in 2021. Seagreen is Scotland's largest offshore wind farm. Power for the majority of the turbines is exported from the site via c.19km of underground cables from landfall at Carnoustie through to a new substation at Tealing near Dundee. 36 of the turbines are yet to be built and form part of the Seagreen 1A project which has consent to connect to the National Grid at Cockenzie in East Lothian. Permission was approved to facilitate this with a scheme comprising of onshore substation, underground electricity cables and associated temporary and permanent infrastructure to allow connection of Seagreen 1A offshore windfarm extension to national electricity grid. This is located south of the B1348 and south west of the Scottish Power Grid Connection Substation.

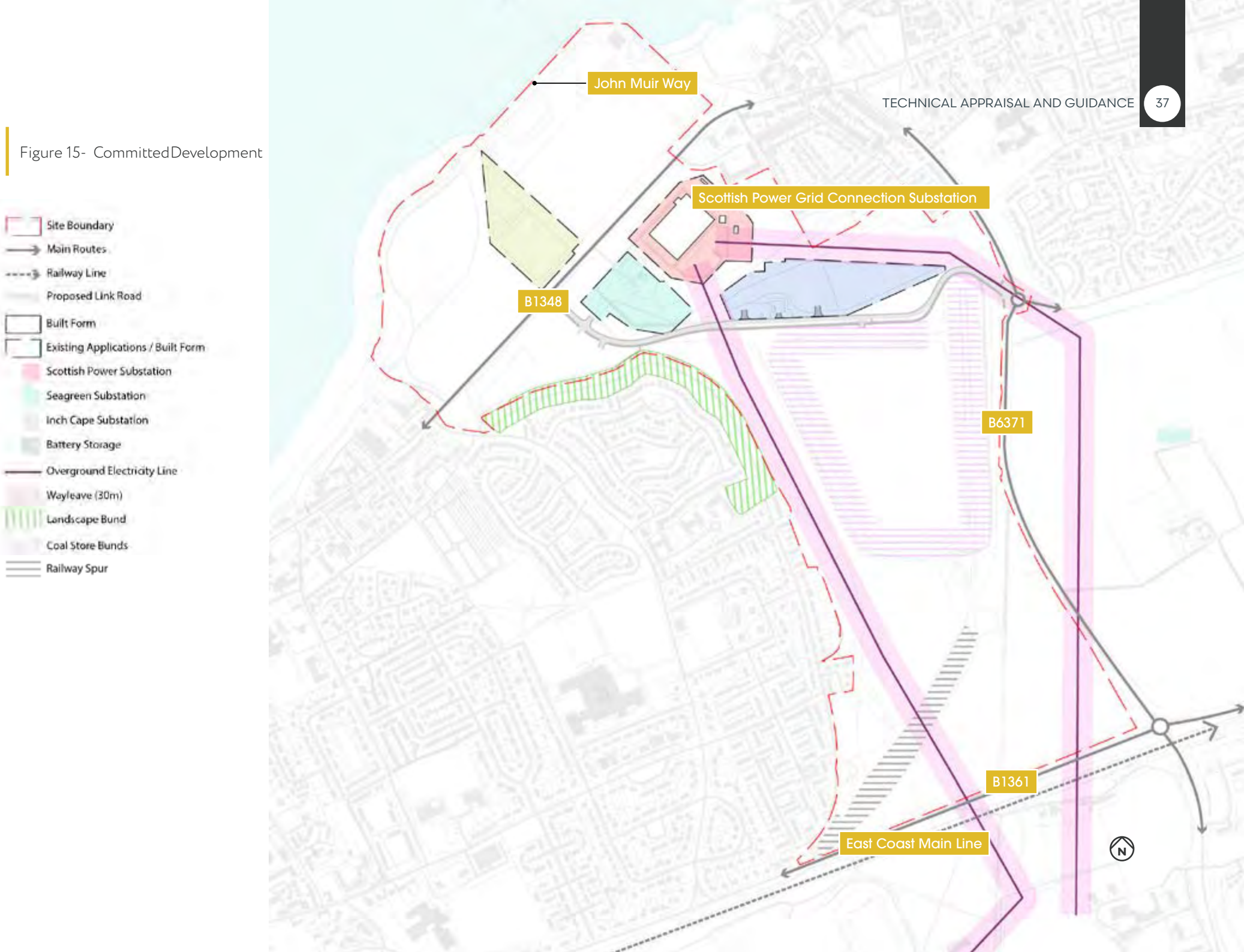
Battery Storage

An application has been submitted to the Energy Contents Unit in 2024. This proposed the construction and operation of a Battery Energy Storage System (BESS) and an associated landscape bund and substations. These ensure that energy generated by renewables can be stored when it is not required, and then used when it is and to provide continuity in energy supply as traditional generation is phased down. This is located south east of the Scottish Power Grid Connection Substation, north of the Access Road.

Proposed Link Road

A Link Road received Planning Permission in 2022 (see overleaf).

Figure 15- Committed Development



Proposed Link Road

A Planning Application for a link road at Cockenzie was submitted by East Lothian Council (22/00440/P) in 2022.

The council's proposal for the formation of a new link road through the site has planning permission, and its delivery will be considered in the wider context of the physical and technical works on the site as set out above.

The road would link the Alder Road junction on the B6371 approach to Cockenzie with the existing B1348 road. Much of the route would follow an existing service road to the former coal plant and be complemented by a pathway, largely set back from the main roadway, to encourage safe walking and cycling.

Figure 16- Link Road Application Drawing

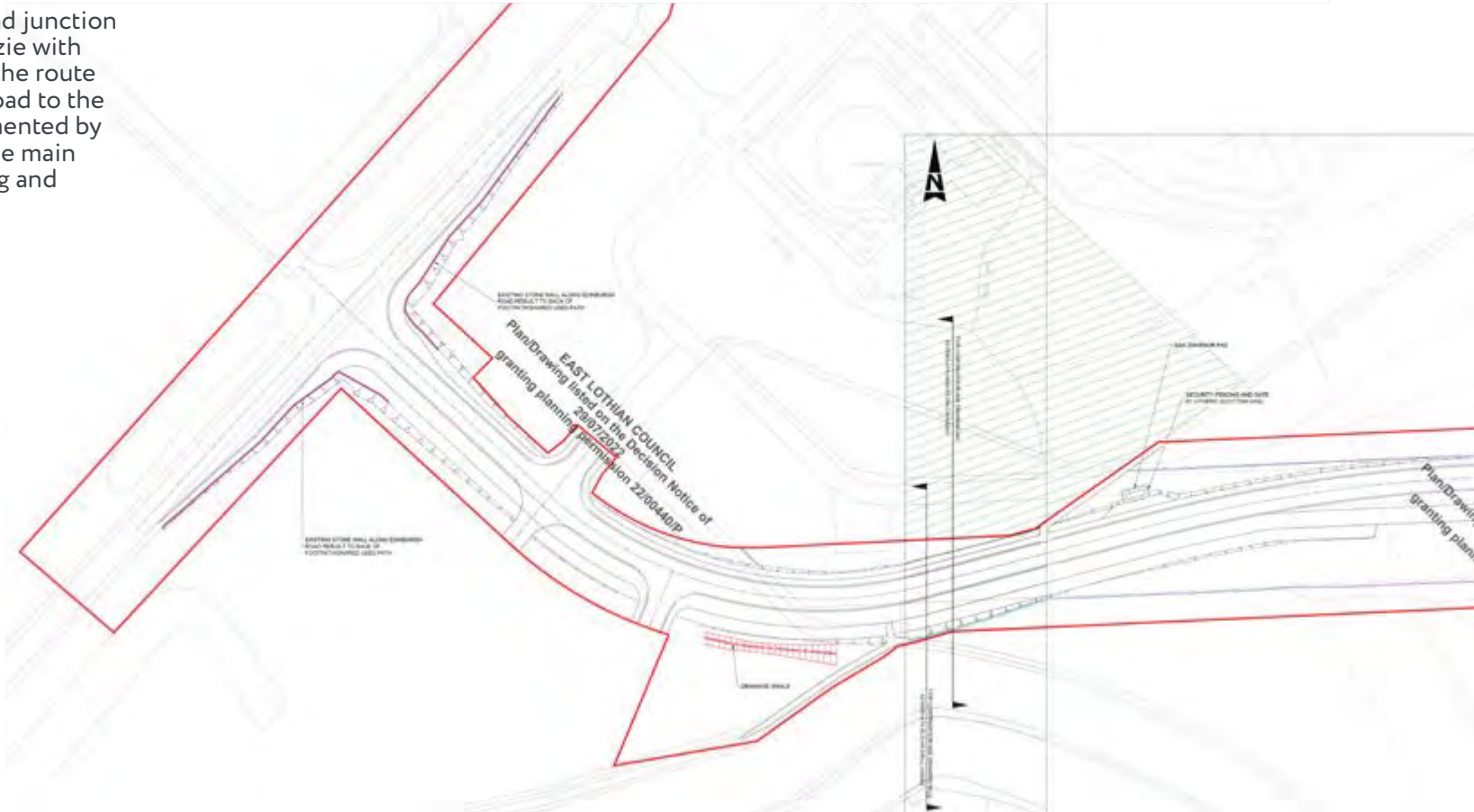
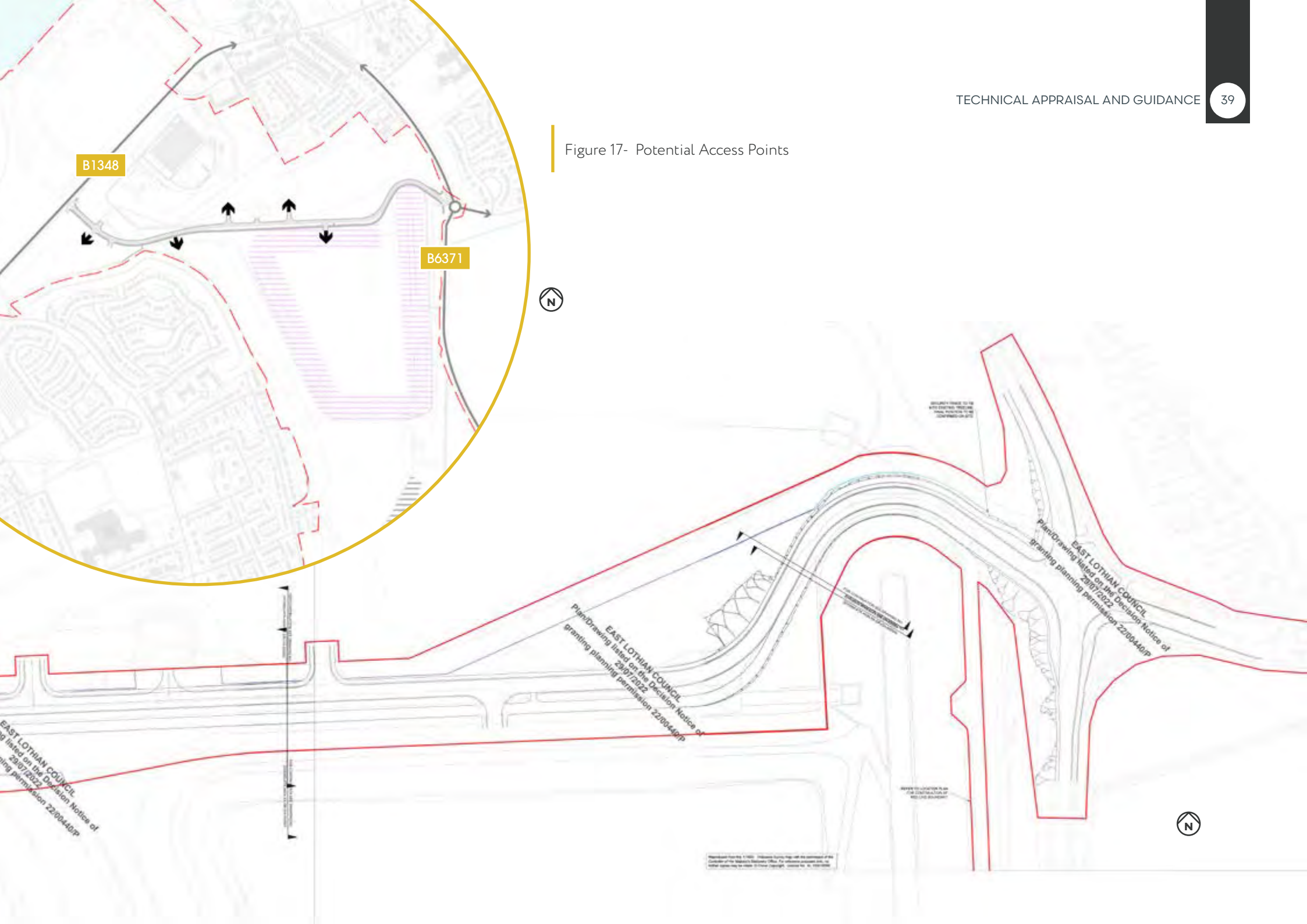


Figure 17- Potential Access Points



SLR WORK

As part of the levelling up funding, East Lothian Council have also commissioned SLR Consulting to provide a technical deliverability and costings analysis in the following specific areas.

Bund Removal & Regrading

The 2017 masterplan identifies that the coal store could accommodate 30,000 sqm of development. However, the bunds surround the coal store are a constraint as they restrict access to the site. As they fully surrounding the store, part of the bunds would have to be removed to allow at least one site access but access and site flexibility would be significantly improved. These restrictions caused by the bunds were identified in the masterplanning of Zone 3; *"The existing bund walls and disused railway infrastructure could be removed and dismantled locally where appropriate to ensure the most flexible use for this area."*

The levelling up bid proposals include the full removal of the 400,000m3 bunds that surround the former coal store on all sides and the railway infrastructure that sits on top of the eastern bund. The site will be regraded using bund material to create a level, developable platform with rail access at grade. This will increase the area of the coal store from and remove the current barriers to access in this area, allowing the land to be accessed from all sides. Removal would both increase the developable area and enable an accessible layout of future development parcels.

Void Infill, Drainage & Grouting

The 2017 masterplan and this technical appraisal naturally proposes that the former power station slab, part of Zone 1 (not including the Inchcape development area), is redeveloped. However, the former power station was built on a sunken slab within this area and demolition has left a void of approximately 55,000sqm that has been excavated to a depth of 4-5 metres below surrounding grade. This area has to be infilled and compacted back up to grade to allow this to be developed otherwise it will be prone to flooding and difficult to develop across multiple levels.

The Council is proposing to use material from the coal store bunds to infill this void. Testing has identified that the bund material is suitable for infill and based on a visual inspection of the trial pits at the earthen bund area, it is expected that the primary fill material will be cohesive with medium shear strength and low compressibility. 167,000m3 of the bund material will be required with the rest used to regrade the bunds. The 167,000m3 will be transported a short distance from the former coal store rather than the alternative of the Council having to purchase material suitable from elsewhere, which would be transported from further distances outside the site with subsequent greater disruption and transportation associated carbon emissions.

Appropriate drainage will need to be incorporated in the filled void to allow water to drain out of the infilled void rather than accumulating above the currently impermeable concrete base.

Sea Wall & Flood Risk

There is an existing sea wall with wave return shaping which runs for approximately 650 metres round the western and northern edges of the power station area. The wall is constructed in six metre length segments and rises to a height of c. 6.2 metres. Wave modelling undertaken by SLR has suggested that the parapet of the sea wall be raised by 500mm to protect against future storm waves as a result of climate change, with a secondary dwarf wall defence on the far side to capture any overflow and channel back to the sea rather than flooding the site.

Whilst a 1960s construction, the sea wall is in generally good condition although sections have eroded and require to be replaced. At the existing shoreline at the base of the wall are boulders forming rock armour. A 30m section of this requires to be replaced standing adjacent to the sea wall to provide additional protection to the wall. Without these works, Zone 1 would be undevelopable due to the projected impacts of climate change.

John Muir Way

The John Muir Way (JMW), one of Scotland's Great Trails, is a 134 mile coast to coast walking and cycling route that runs from Dunbar in East Lothian to Helensburgh on the west coast. A section of it runs along a broken tarmac path alongside the sea wall on the northern edge of the site (see Figure 10). Whilst the coast to coast walk is popular, this section is mainly used by locals for exercise and recreation, including fishing over the sea wall. However, the surface is in poor repair and requires resurfacing. As the sea wall will be raised by 500mm it is proposed that the surface of the JMW along a 480m stretch of the sea wall will be raised by 500mm and resurfaced to allow users to enjoy the coastal panorama over the sea wall. The new surface will increase the usability of the path in this location.

At the north east of the site the JMW crosses a stepped access, plate girder bridge, spanning the former cooling water outlet. The bridge visually detracts from the route, is a long term financial liability and due to its stepped access, prevents wheeled uses from accessing this section of the JMW. It is proposed that the bridge is removed and the JMW would be diverted around the cooling water outlet.

SUMMARY

There are a number of significant constraints across the site and these can be summarised as follows:

- Several large and consented developments in place;
- A new east / west Link Road being constructed;
- Much of the remaining infrastructure is either in place or committed. An increased power supply, gas supply & water supply is required. Just as important, however, is the long term protection of key areas and routes for substations and new connections;
- A network of existing Core Paths and local paths, including the John Muir Way;
- Existing open spaces including Greenhills, Preston Crescent Gardens, Open Space and Play Area and a community orchard;
- Western part of coal store is very useful for access to B6371 but has a great many services requiring relocation;
- Significant constraints throughout; and,
- Topography of land south of the proposed Link Road will demand an approach that involves creation of a number of distinct platforms. Most will require separate access and servicing.

2.4 TECHNICAL STAKEHOLDER ENGAGEMENT: ROUND 1

THIS SECTION PROVIDES A SUMMARY OF THE FIRST TECHNICAL STAKEHOLDER ENGAGEMENT SESSION UNDERTAKEN WHEN ASSESSMENTS INFORMATION WAS BEGINNING TO INFORM PARAMETERS FOR DEVELOPMENT AT AN INITIAL STAGE OF THE PROCESS.

Engagement Round 1

Essential to the technical appraisal process is technical engagement with stakeholders. Two rounds of consultation were undertaken, and this first round was undertaken when assessments information was beginning to inform parameters for development at an initial stage of the process. It was structured over three sessions, with different attendees at each session; the first two were internal stakeholders and the last was external stakeholders.

The format of the event had East Lothian Council (ELC) provide a presentation setting out the background of the project and Stantec providing a presentation of the site assessment information, development parameters and various approaches to platforming the southern plot. An opportunity for questions was made available at the end with answers being provided by Stantec and ELC. It was a well attended meeting and provided an opportunity for stakeholders to ask questions on the proposals and provide advice. These events were held in person at Stantec's office in Edinburgh in September / October 2023.

The presenting parties were:

- Graeme Marsden (ELC), Project Manager – Growth & Sustainability
- Hamish Jack (Stantec), Urban Design Associate
- Stephen Tucker (Stantec), Urban Design Director
- Chris Pittner (Stantec), Director of Civil Engineering and Water Management

Session 1 - Technical (all at ELC)

- Keith Dingwall – Service Manager, Planning
- Robin Edgar – Team Manager, Policy & Strategy
- Emma Taylor – Team Manager - Planning Delivery
- Jamie Baker - Service Manager - Economic Development
- Shona Grant - Team Manager - Public Health & Environmental Protection
- Scott Callow – Contaminated Land Officer
- Peter Forsyth – Project Manager - Growth & Sustainability
- Alan Stubbs - Service Manager for Roads
- Ian Lennock - Team Manager - Assets & Regulatory
- Andrew McLellan - Team Manager – Transport
- Ian Chalmers - Senior Engineer - Flood Protection

Session 2 - Environmental / Community / Place

- Eamon John - Service Manager - Sport, Countryside & Leisure
- Andrew Robertson – Archaeology & Heritage Officer
- Catherine Cumming – Biodiversity Officer
- Sarah Cheyne – Landscape Officer
- Jennifer Lothian - Strategy, Policy & Development Manager (Amenity Services)

- Nick Morgan – Outdoor Access Officer
- Leigh McCrum – Countryside Ranger
- Emma Brown – Connected Communities Manager Preston Seton Gosford (Ward within which the site lies)
- Simon Davie – Connected Communities Manager Tranent/Fa'side Area (Ward Adjacent to the above)

Session 3 - Key Agencies

- Virginia Sharp, Historic Environment Scotland
- Rachel Pickering, Historic Environment Scotland
- Alex Candlish, Scottish Environmental Protection Agency
- Rachel Elliott, Nature Scot
- Peter Noad, Scottish Enterprise
- Lucy Van Der Ven, Scottish Water
- Gordon Morrison, Scottish Water

Summary of Feedback

The sessions recognised and to some extent endorsed the process but it did highlight several key points:

- A number of additional constraints were highlighted, such as optioned cable routes, mining considerations and footpaths;
- Local sensitivities were highlighted regarding the battlefield site and community orchards;
- Feedback was provided regarding public transport connectivity and active travel routes and a general will for these to be well integrated with the site;
- Feedback regarding the future biodiversity strategy with suggestions to include such features as climate forests, riparian planting, shaded seating and recreational woodland;
- Options for funding channels such as the Coastal Adaptation Funding; and,
- Design suggestions such as under croft parking.

3

TECHNICAL APPRAISAL

"FOUNDATION COMPONENTS"

3.1 PRIMARY DEVELOPMENT AREAS

THE BROAD DEVELOPMENT PARAMETERS ARE DEFINED BY THE INVERSE OF THE SITE ASSESSMENT AND THE COMMITTED DEVELOPMENT SET OUT EARLIER IN THE DOCUMENT.

PARAMETERS

Having assessed the site constraints, an exercise was undertaken to identify potential development areas. This has resulted in two primary development plots, one to the north (the northern development area), north of the B1348, and one to the south (the southern development area), which sits south of the Link Road. The northern plot allows 30m for waterfront public realm to the north west and up to 80m to the north east. There is the potential for a secondary plot to the west of the site, south of the B1348 (the western development area).

The approximate areas of these plots are as follows:

- North: c.8.0ha
- South: c.21.0ha
- West: c.1.85ha

PLATFORMS

The northern and western development areas have little or no sloping ground and as a result will not need platformed.

Due to the topography of the southern plot this area will need platformed to allow level development areas which step down the slope. These platforms will need space between them to accommodate a maximum 45 degree slope, space for utilities, access and drainage. As a result, the actual developable area will reduce from the numbers outlined above as the technical assessments are considered. This will be summarised at the end of this chapter.

Figure 19- Constraints Defining Parameters

3.2 FOUNDATION COMPONENTS

THIS SECTION SETS OUT ELEMENTS WHICH ARE CONSTRUCTED, COMMITTED OR ARE FOUNDATION COMPONENTS. THESE INCLUDE DEVELOPMENT UNDERWAY OR CONSENTED AND KEY PIECES OF COMMITTED INFRASTRUCTURE OR INFRASTRUCTURE REQUIRED TO FUTURE PROOF THE SCHEME.

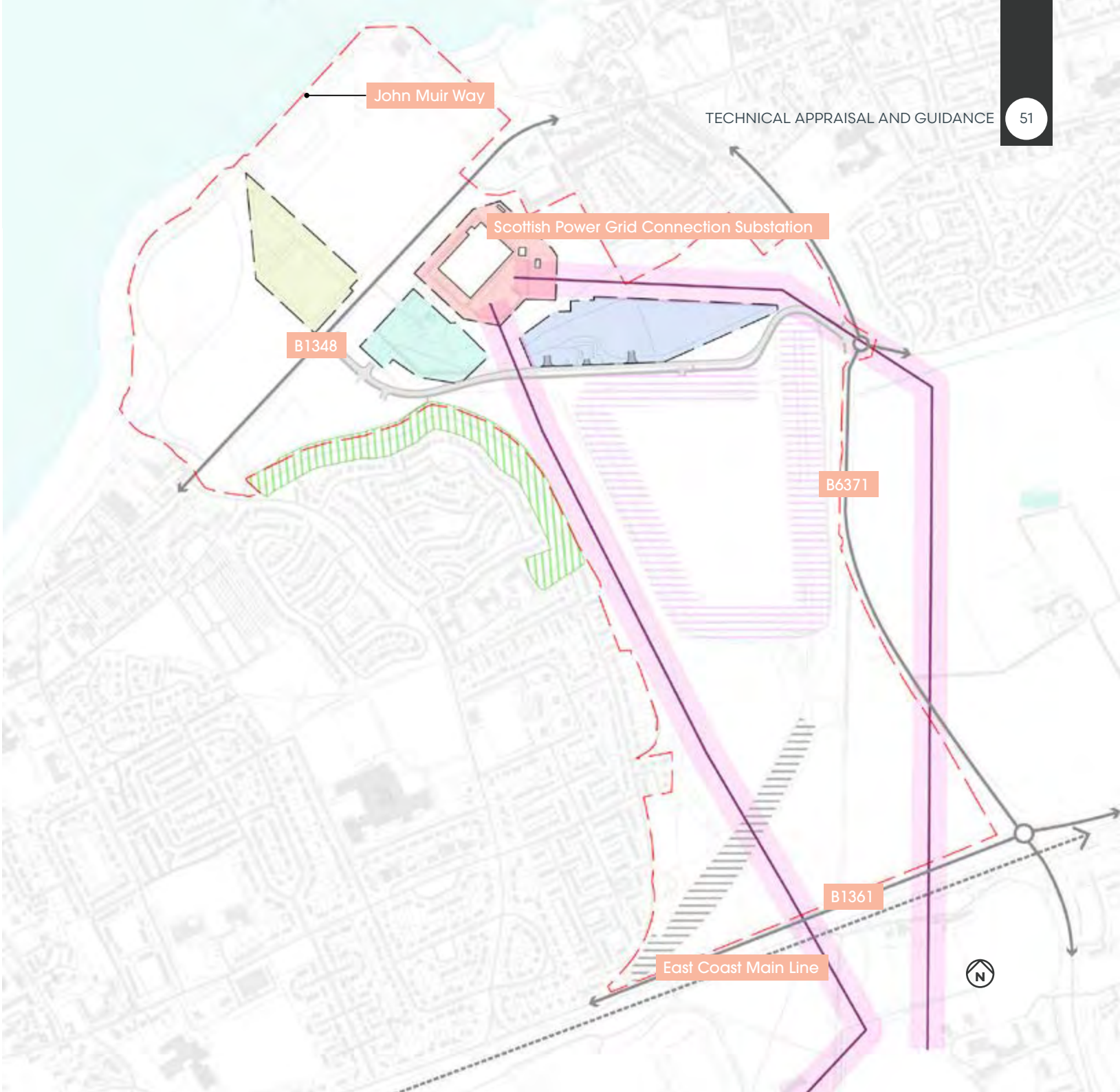
COMMITTED DEVELOPMENT

There are a number of existing committed developments within the site and a number of existing utilities and services running over and under the site. These can be summarised as follows:

- Inch Cape was granted planning permission in principle in 2019;
- Seagreen was granted planning permission in principle in 2021;
- The Battery Storage site has submitted an application to the Energy Contents Unit in 2024;
- A Link Road received Planning Permission in 2022;
- The existing transformer substation within the site, situated to the south of the B1348;
- 275kV overhead cables route from Cockenzie substation south along the western boundary of the site. 33kV cables route north south between the 275kV cables and the former coal storage area; and,
- 400kV overhead cables route east from Cockenzie substation to the roundabout on the B6371.

For more details on all of the above please refer to Chapter 2.

Figure 20- Committed Development



DRAINAGE

SEPA's CAR guidance advises that SuDS treatment is not required when discharging surface water to coastal waters, depending on the classification of the water environment. Whilst the coastal waters adjacent to the site have no SEPA bathing water classification, coastal waters at Seton Sands and Longniddry are both classified as 'Good'. The Cockenzie shoreline also has SPA and SSSI status, accordingly, SuDS treatment should be provided at the site.

The proposed surface water drainage network servicing each zone of the proposed development will comprise of a network draining surface water runoff from roofs and other impermeable areas to source control SuDS. These features will provide treatment of surface water prior to discharge to site and regional control features which in turn will discharge to the water environment.

With the likely requirement to platform the site, this strategy assumes 90% impermeable platforms draining to 4m wide secondary swales with 1:4 side slopes, in turn draining to 6m primary swale, at the point it will carry more than one platforms drainage (again 1:4 side slopes) which is draining to pond/basin with large flow discharging to sea either through existing CSO or parallel new pipe, or swale to be assessed at a later stage of detail.

Assessment of potential treatment volumes was undertaken and for high level estimated employment areas and these are as follows:

- Area north of B1348: 9.3ha, Treatment Volume Vt (m3): 1,030
- Area south of proposed Link Road: 22.1a, Treatment Volume Vt (m3): 2,447

Within each area, these volumees can be accomodated within one or more ponds / features.

A swale would carry the drainage volume from the SuDS pond to final discharge. The benefits of pipe-free networks include provision of increased capacity of flow compared to the cost of equivalent piped drainage, which in turn leads to savings in construction costs. The open nature of a pipe-free network becomes, by its nature, part of the blue green infrastructure providing habitat and increasing biodiversity. In addition, where failure occurs either through cross connections or hydraulic weakness, this becomes immediately apparent and will be easier to remedy than a piped network.

A well-connected green network of pipe-free SuDS needs to be able to reach beyond the confines of the immediate vicinity and needs therefore to have adequate permeability to allow species migration to the wider reaches of the site and beyond. The configuration and layout of pipe-free networks can easily lend itself to help support protected species such as water vole and great crested newts even within an urban setting.

There is also existing infrastructure which could carry this volume by pipe. This includes a 1050mm diameter combined sewer overflow or a land drain which follows a similar route, both of which discharge to the Firth of Forth. However, other users of such infrastructure needs to be considered to assess if its suitable for the volumes required and this would not provide the aforementioned biodiversity / amenity benefits.

There is the opportunity to integrate the main ponds or basins and primary swale with a potential mine water abstraction and discharge system, with treatment if necessary. This, alongside potential other solutions, could be investigated to test their viability at a more detailed stage of design.

The strategy involves the following elements:

A Main Ponds or Basins

- A pond capable of accommodating a 1000 l/s flow with an area of 6500m2, depth of 1.5m, and volume of of 8520.5m3. This can be accommodated accross one or more ponds. The 'Pond/Basin' (A1) shown opposite meets these size requirements alone, and a potential alternaltive location has also been shown; 'Optioal location' (A2).
- Placed in strategic open space as part of amenity; and,
- Can be fairly small as attenuation not required, however if discharging into existing pipe, this may need to be restricted.

B Primary Swale

- The primary swale should be 4m wide from its southern point to the connection point with the middle platforms secondary swale. From this point north, to discharge, the primary swale should be 6m wide and 0.6m deep. This will be accommodated within the verge of the access road (see overleaf);
- Integrated with amenity space & active travel route and receives runoff from secondary swales and some direct runoff from adjacent roads/yards; and,
- Gentle meanders following the SuDS philosophy to "mimic natural drainage".

C Secondary Swale(s)

- Secondary swales will sit to the north of each platform and drain the relative platform to the primary swale. These swales should be 4m in width and 0.5m deep; and
- Generally along open green routes, receiving runoff from minor roads, roofs and yards.

Figure 21- Drainage Strategy

ACTIVE TRAVEL

A comprehensive active travel network has been proposed to address the identified opportunities for improving east-west connectivity and integrating with existing Core Paths and informal paths in and around the site, while also meeting key National Planning Framework 4 (NPF4) policies. The network will prioritise walking, cycling, and other sustainable modes of transportation, creating a more accessible, healthier, and socially connected environment for all users, in support of NPF4's Policy 13, which advocates for sustainable transport and active travel.

Policy 13 also emphasises the importance of reducing carbon emissions and fostering sustainable communities. The proposed active travel network has considered onward access to existing local and regional transport routes, such as nearby bus stops. Additionally, there is potential to provide bus stops/routes within the site, though these will be explored at a more detailed design stage. Two additional bus stop locations have been identified, well-integrated with the active travel network: one along the Link Road and another on the B6371.

The proposals are informed by NPF4's Policy 14, which highlights the need for sustainable, low-carbon places that enhance well-being and resilience. The proposed network will include well-lit pathways, dedicated cycling lanes, and convenient connections to encourage employees and visitors to choose greener, more active forms of travel, while promoting inclusivity by ensuring that everyone, regardless of age or ability, can move around safely and comfortably.

The network comprises a primary active travel route that forms a framework around the proposed development area and makes key connections to existing Core Paths and adjacent main routes. It also integrates with the Secondary Informal Path Network, which seeks to incorporate existing informal paths and provide additional connections where possible to create a comprehensive network across the site.

The network aims to:

- Connect foot and cycle paths along the B1348 to the west with the B6371 to the east, with a dedicated foot/cycle route following the Link Road;
- Provide two north-south foot/cycle routes. One is located to the east of the site connecting with adjacent Core Paths, Waggonway, and the B6371, following the route of the existing access road and railway spur; ; "The People Mover". The other one is lcoated to the west of the site and connects with adjacent Core Paths, Preston Crescent and the people mover.
- Connect the north-south foot/cycle routes through the potential development area in multiple locations to enhance permeability east / west; and
- Provide enhanced connections through Greenhills to the north to link the John Muir Way to the wider network, and through proposed open spaces to the south of the site to connect all paths.

The network provides onward connections to Prestonpans and services/ facilities along the High Street; Prestonpans Local Centre and education facilities; Prestonpans Railway Station; routes to Meadowmill Sports Centre and Tranent; routes to Cockenzie and Port Seton and services/ facilities along Links Road; and local bus stops. It also provides a potential connection to the adjacent future Blindwells development.

The social benefits of the active travel network are significant, focusing on creating healthy, safe, and resilient communities, in line with NPF4's Policy 20. By improving access to local amenities, schools, and community spaces, the network will enhance the quality of life for residents, making it easier for people to engage in daily activities without relying on a car. This increased accessibility will also strengthen social ties within the community by encouraging more face-to-face interactions as people walk or cycle through shared spaces.

Finally, the network will serve as a vital community resource, creating opportunities for social interaction and fostering a stronger sense of community cohesion, as envisioned in NPF4's Policy 16, which supports the creation of connected, thriving places.

Figure 22- Active Travel Network

VEHICLE ACCESS

Northern Primary Development Area

An existing vehicle access point exists of the B1348 to the north of the site providing access to the existing car park and emergency response room. A further access exists to the west of the Inch Cape site. A secondary access into the northern development site will likely be provided and the optimum location for this has been assessed and is shown opposite.

Southern Primary Development Area

Access options for the southern development area can be provided from the proposed Link Road which runs east - west across the centre of the site connecting the B3148 and the B6371. It is likely that access north / south through the centre of the southern development area will be challenging relative to topography and platforming. Access from the east or west will be challenging but will result in more flexibility within the platforms. The proposed strategy is formed of the following elements:

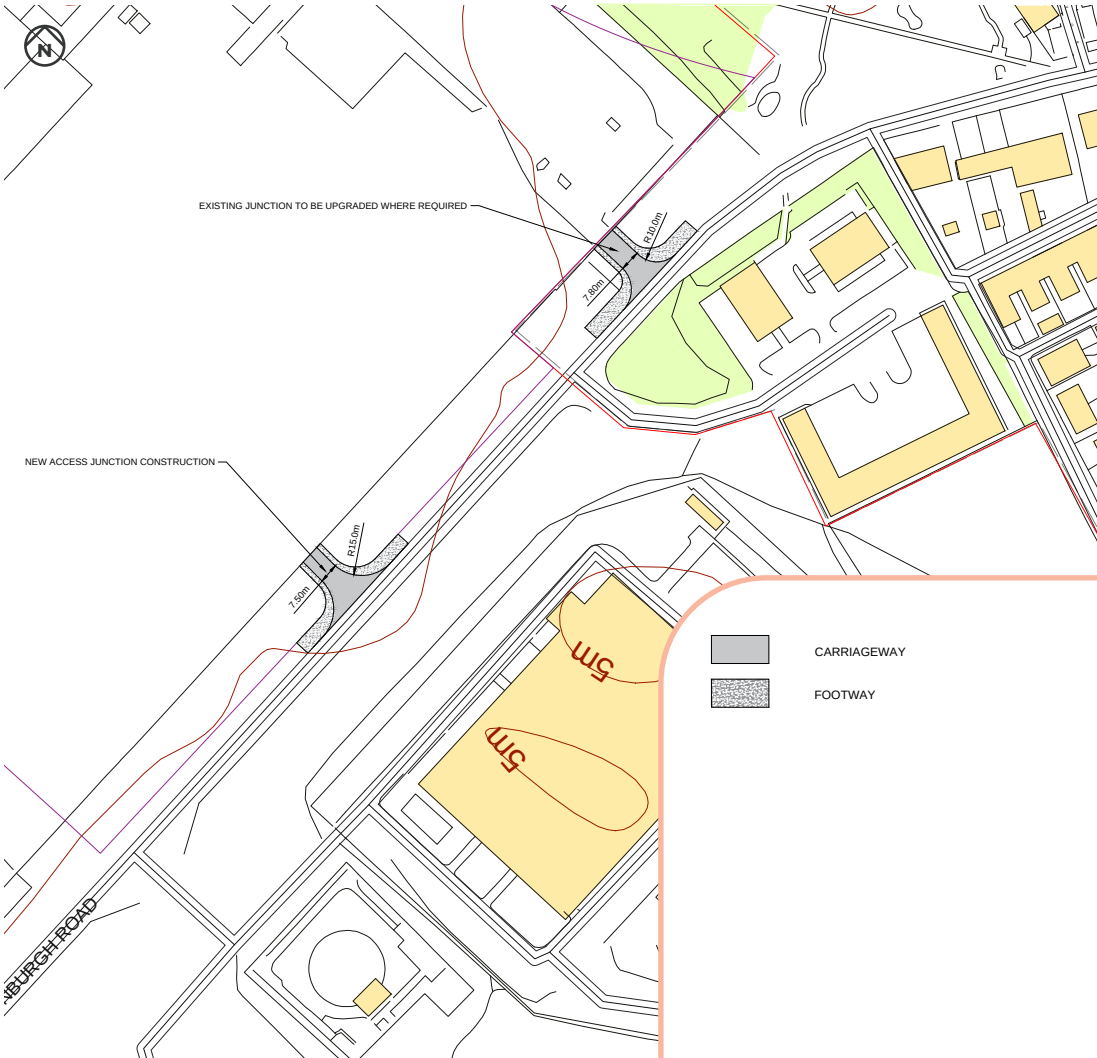
- A 7.2m wide carriageway with 9m radii to accommodate HGVs;
- Cut and fill adjacent to the road to accommodate (based on existing levels);
- Suitable offsets from the pylons;
- A 3m foot / cycle way on one side of the carriageway;
- A 4m swale following the southern half, increasing to 6m in the northern half; and
- A less than 1:20 slope, meeting each of the platforms at a fixed level. 30m for the platform to the south, 23m for the middle platform and 17m for the platform to the north.

A western vehicle access road is the preferred vehicle access option. Alternative access road solutions have been tested in a non-technical capacity to demonstrate their potential impact on development. These are set out in appendix 9.1.

Western Secondary Development Area

It is anticipated access could be facilitated from the B1348 or ELC Link Road. This can be investigated as the proposal develops to a greater level of detail, if the principal of development here is established.

Figure 23- Access Points North of B1348



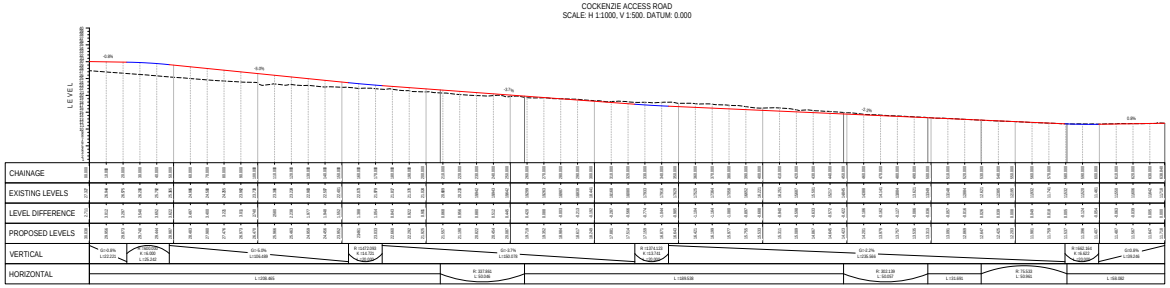
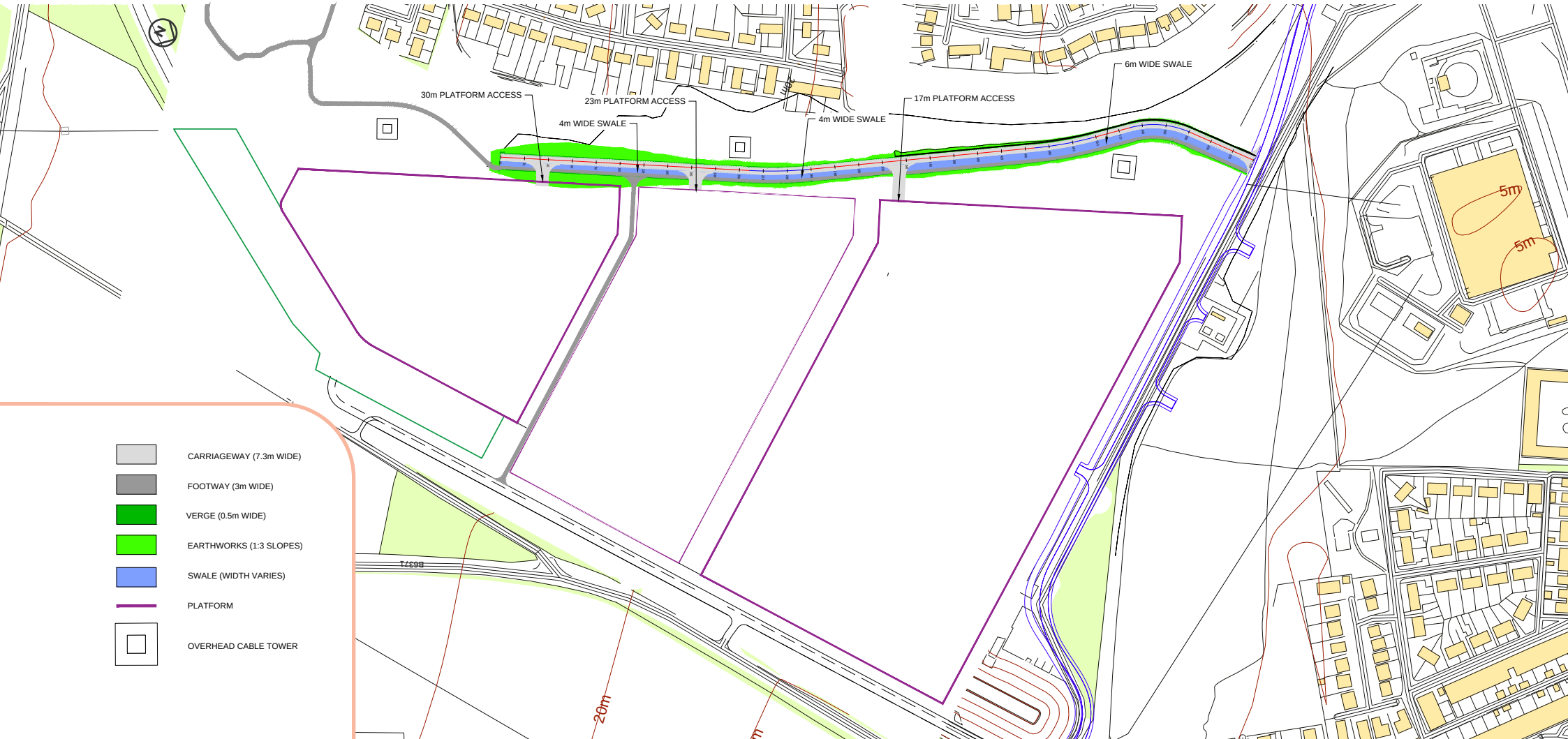


Figure 24- Access Road South of Link Road



UTILITIES

A service strip has been designed which follows existing underground cables immediately south of the Link Road. From approximately the middle platform, to the south, these will need diverted and a corridor has been provided south, through the platforms to the west and south again where they will rejoin their existing position.

The utility corridor (light blue) is 7m wide, and the utilities new supply corridor (dark blue) is 2.1m wide, totalling 9.1m.

Land has been allocated for a substation on each platform, at an indicative 25x25m. These are located to the west of the platforms to be near the utilities corridor / new supplies corridor.

The combined sewer will not be redirected. Ground sitting above this will need to be kept clear of built form, but could accommodate a road / parking area.

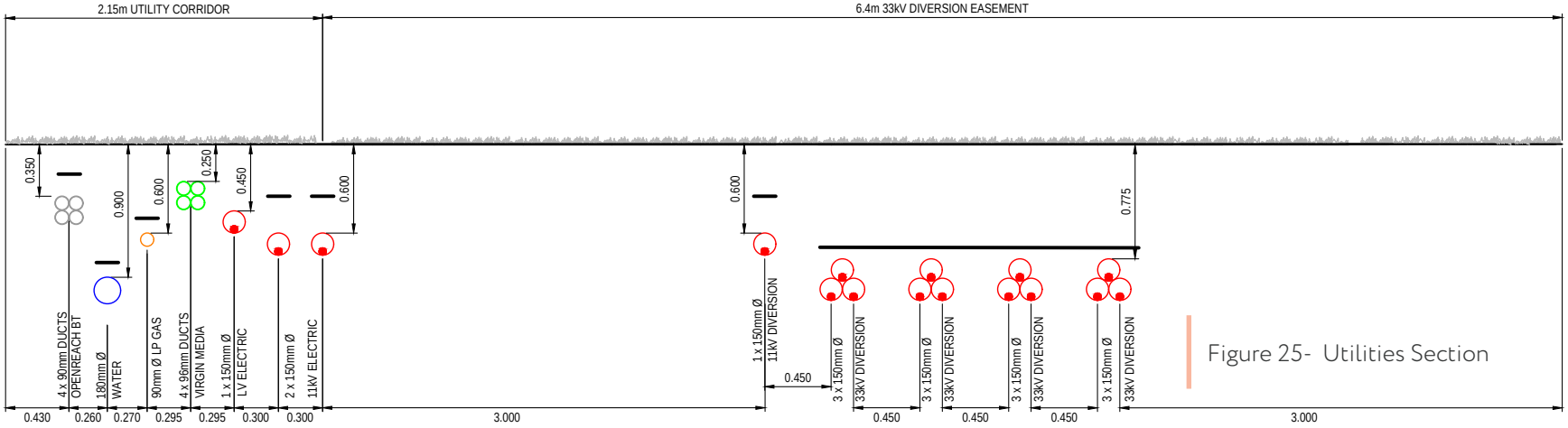


Figure 25- Utilities Section

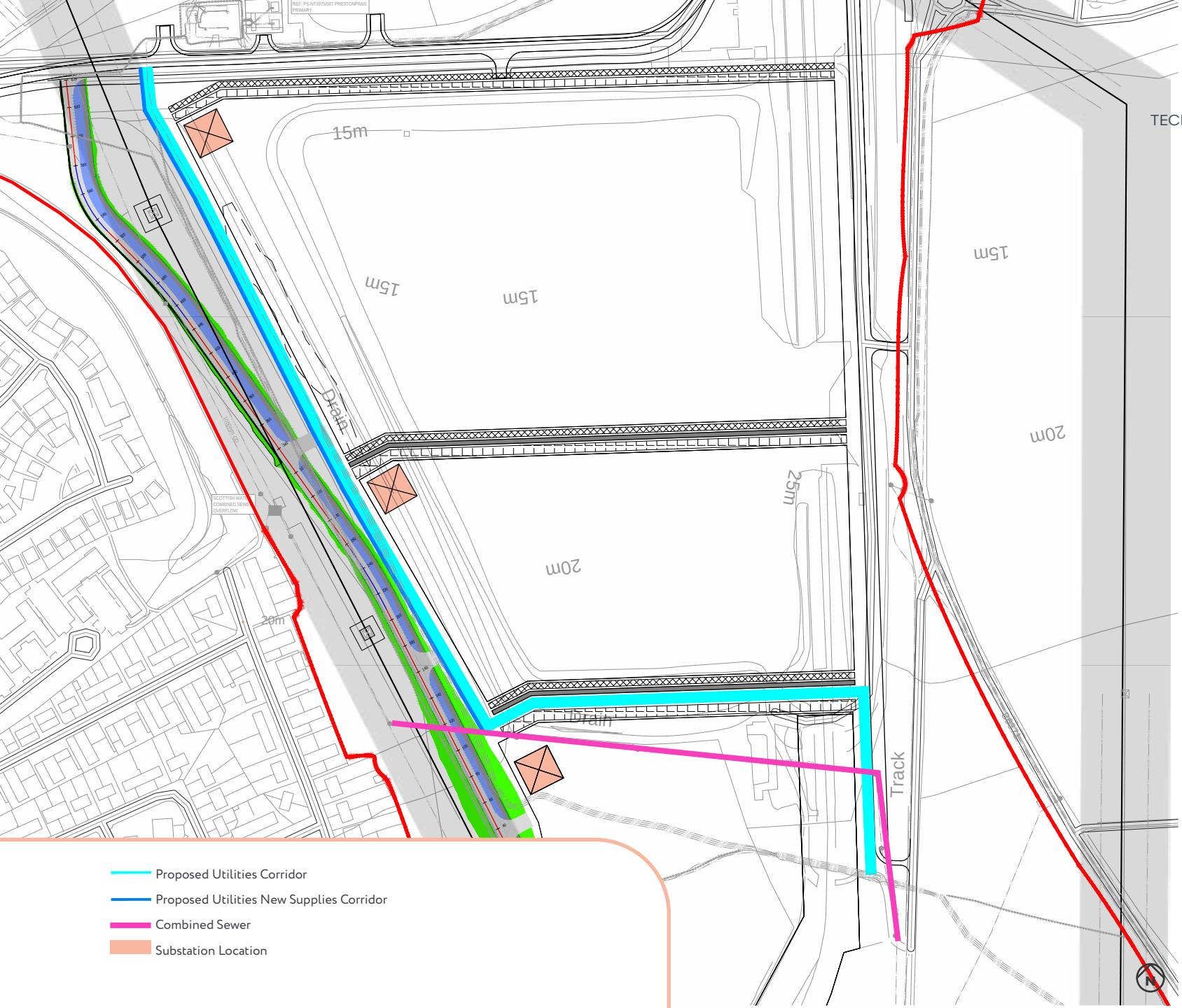


Figure 26- Utilities Corridor

3.3 FOUNDATION COMPONENTS SUMMARY

THE ASSESSMENTS UNDERTAKEN AS PART OF ESTABLISHING THE EXTENT AND LOCATION OF THE FOUNDATION COMPONENTS HAS REFINED THE DEVELOPABLE AREA. THIS, ALONGSIDE THE COMPONENTS, ARE SUMMARISED HERE.

As Existing / In Progress

- **A** Main Existing Routes + Railway
- **B** Railway Spur
- **C** Active Travel Corridor
- **D** Local Prestonpans Substation
- **E** Existing Pylons
- **F** ELC Link Road
- **G** Key Active Travel Route: “The People Mover”

As Proposed

- **1** Southern Access Road
- **2** Northern Access Points
- **3** Service Strip
- **4** Swales & Attenuation SuDS
- **5** 4 Primary Development Areas + Potential Secondary Development Area

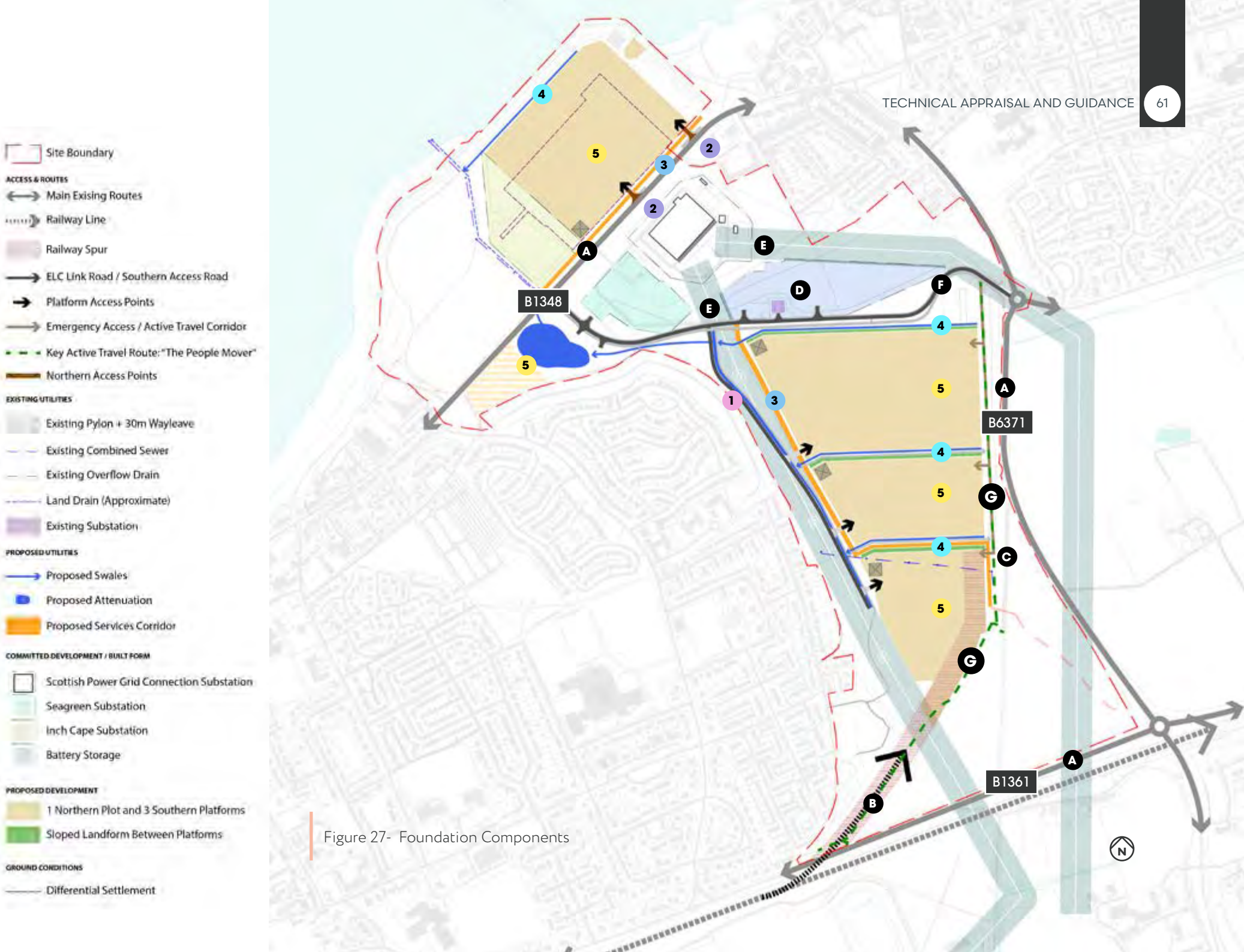


Figure 27- Foundation Components

3.4
TECHNICAL STAKEHOLDER ENGAGEMENT: ROUND 2

THIS SECTION PROVIDES A SUMMARY OF THE SECOND TECHNICAL STAKEHOLDER ENGAGEMENT SESSION UNDERTAKEN WHEN THE PROCESS REACHED A GREATER LEVEL OF DETAIL, INCLUDING BUILDING FOOTPRINTS AND OPEN SPACE STRATEGIES AND PUBLIC REALM OPPORTUNITIES.

Engagement Round 2

Essential to the appraisal process is technical engagement with stakeholders. Two rounds of consultation were undertaken, and this second round was undertaken when the process reached a greater level of detail. It was structured over two sessions, with different attendees at each session. Each session was a mix of internal / external stakeholders, similar to session 1.

The format of the event had East Lothian Council (ELC) provide a presentation setting out the background of the project and Stantec providing a refresh of the site assessment information, then an introduction to the open space strategy and approach to biodiversity, various approaches to footprints and building layouts, public realm opportunities and potential phasing. An opportunity for questions was made available at the end with answers being provided by Stantec and ELC. It was a well attended meeting and provided an opportunity for stakeholders to ask questions on the proposals and provide advice. These events were held digitally on Microsoft Teams in February 2024.

The presenting parties were:

- Graeme Marsden (ELC), Project Manager – Growth & Sustainability
- Hamish Jack (Stantec), Urban Design Associate
- Stephen Tucker (Stantec), Urban Design Director

Session 1

- Ray Montgomery, Development at ELC
- Colin Clark, Public Health & Env Protection at ELC
- Peter Forsyth, Development at ELC
- Ian Lennock, Transportation at ELC
- Marshall Greenshields, Transportation at ELC
- Ian Chalmers, Flood Protection at ELC
- Jenny Hargreaves, Countryside at ELC
- Jen Newcombe, Countryside at ELC
- Debbie Livingtsone, Transport Scotland
- Gordon Morrison, Scottish Water
- Lucy Van Der Ven, Scottish Water
- Dave Bisset, Scottish Water

Session 2

- Andy Stewart, Development at ELC
- Daryth Irving, Development Management at ELC
- Robin Edgar, Policy & Projects at ELC
- Marek Mackowiak, Policy & Projects at ELC
- Leigh Taylor, Policy & Projects at ELC
- Sarah Cheyne, Landscape at ELC
- Jennifer Lothian, Sports, Countryside & Leisure at ELC
- Nick Morgan, Access at ELC
- Virginia Sharp, Historic Environment Scotland
- Simon McGrory, Historic Environment Scotland
- Frazer McNaughton, Nature Scot

Summary of Feedback

The sessions recognised and to some extent endorsed the process but it did highlight several key points:

- Flexibility and ability to respond to market conditions is of value long term. Several of the options identify the opportunity to response differently over time, with measured investment up front. These were favourable.
- Suggestions for community involvement in the development of the open space strategy;
- The northern site offers good potential for mixed use and some community facilities - the public realm will rely on activity and this should be recognised in options;
- Considerations for land ownership when considering additional potential works outside the site boundary;
- Community engagement is essential for the green spaces / public realm in particular;
- Feedback regarding public art strategies and play strategies and the will for these to be in place. Further suggestions regarding the integration of allotments and food growing potential;
- Opportunities to market the site around green corridors should be investigated further; and,
- Suggestions for consideration of ongoing management of open spaces and what the structure of this may look like.

4

DESIGN GUIDANCE

"FLEXIBLE ELEMENTS"

BUILT FORM

4.1 LAND USE

THE FOLLOWING PARAMETER PLANS PROVIDE A FRAMEWORK FOR FUTURE DETAILED PROPOSALS AND SETS OUT HOW THE SITE COULD POSSIBLY COULD LOOK IN FUTURE AND SEEKS TO PROVIDE GUIDANCE RATHER THAN A FULLY FORMED STRATEGY.

LAND USE

The distribution of the proposed land uses is shown opposite, and the indicative maximum area associated with each land use area is detailed in Figure 27. While this demonstrates potential land use areas, it should be noted that a percentage of the area will be used to accommodate car parking and servicing as well as additional landscape. Green space includes service strips for utilities and swales / ponds for green/blue infrastructure for drainage.

EMPLOYMENT

The primary land use for the site will comprise employment and economic development uses and associated infrastructure, up to approximately c.29.18ha. This can accommodate up to approximately 999,000sqtf of gross internal floorspace split between a mix of Class 4/5 (Business & Industry), Class 6 (Storage & Distribution), Technology and Net Zero Infrastructure (Ambiguous), and Class 1A (Retail).

The employment units may be accompanied by a smaller ancillary office component bolted on to the main operational area (for example 5%-10% of the total GIA) but may be contained within the main building and on mezzanine levels. The offices will be diminutive in size compared with the rest of the unit.

OPEN SPACE

51.68 ha of the site will consist of existing and enhanced open spaces, landscaping and planting. Green infrastructure indicatively comprises the following components:

- Earth form revisions;
- Strategic drainage provision and green / blue infrastructure;
- Retained trees and hedgerows where possible;
- New planting, including orchards, woodland and meadows;
- Recreational / play opportunities;
- Active travel routes and connections, and,
- Open space for ecological protection and mitigation areas.

Further landscape design principles are provided in Chapter 5.

ACTIVE TRAVEL

The parameter plan identifies active travel connections across the site integrating surrounding Core Paths / local paths connecting all parts of the site to each other. These deliver a key active travel route north / south, “The People Mover”, and improve east / west connections throughout the development area.

Figure 28- Land Use Table

Land Use	Ha	Notes
Committed Development	**10.98**	
Development in Pipeline	*7.78*	
Inch Cape	2.47	
Seagreen	1.87	
Battery Storage	3.44	
Existing Development	*3.2*	
Substation	3.2	
Infrastructure	**4.30**	
Existing	0.98	
Northern Access Point	0.05	*One vehicle access point is existing and outside the site boundary, this is the figure for the southern optional access point*
Link Road	1.7	
Southern Access Road	1.02	
Emergency Access / Active Travel Route	0.55	
Development	**29.18**	
Primary		
North	8	
South 1	9.27	
South 2	4.58	
South 3	5.05	
of which Rail	*1.46*	*Figure included in ‘South 3’*
Other Rail	1.3	
Secondary		
West	0.98	
Public Realm	**2.95**	
Frontage/ Community Space	2.95	
Open Space	**51.68**	*Includes drainage infrastructure (swales / ponds) and utilities corridors*
Open Space	51.68	
Site Total	**99.09**	

Figure 29- Land Use Plan

4.2
INDICATIVE HEIGHT PARAMETERS

THE SITE HAS BEEN INDICATIVELY ZONED IN TO A SERIES OF MAXIMUM HEIGHT PARAMETER AREAS, GUIDED BY THE SITE APPRAISAL PROCESS, INCLUDING ASSESSMENT OF POTENTIAL VISUAL IMPACT, AND MARKET ANALYSIS RELATING TO POTENTIAL OPERATORS ACROSS THE RANGE OF USE CLASSES.

While the adjacent plan attributes a potential height to the total indicative developable area, a percentage of the area will be used to accommodate car parking and servicing as well as additional landscape. This approach gives flexibility as to the final position of buildings to respond to operator requirements which will be confirmed at a later stage of more detailed design appraisal and design work.

Context

Historically the chimneys of Cockenzie Power Station were c.150m. Of existing and consented development on the site, the Scottish Power Grid Connection Substation is c.30m high, the Inch Cape substation is c.12m high and the Battery Storage site is expected to be c.14m high at its highest point. Whilst consented development is not yet in place, it is important to consider this potential future context when zoning the site for building height and mass parameters.

BUILDING HEIGHTS

The following indicative principles are set for the component land uses within the scale parameters of the site:

- Class 4/5 will be smaller in scale (up to c.8m in height);
- Class 1A, Class 6 and Technology and Net Zero Infrastructure uses will be up to c.25m; and,
- Any utilities or ancillary buildings associated with the Class 1A, Class 6 and Technology and Net Zero Infrastructure units will be a more human scale up to the equivalent of approximately 4 commercial storeys.

All building heights are to eaves or to the top of the roof, if flat. The plan opposite shows the maximum height for building components, actual buildings heights will be formed at a more detailed stage of design be subject to their own visual impact analysis.

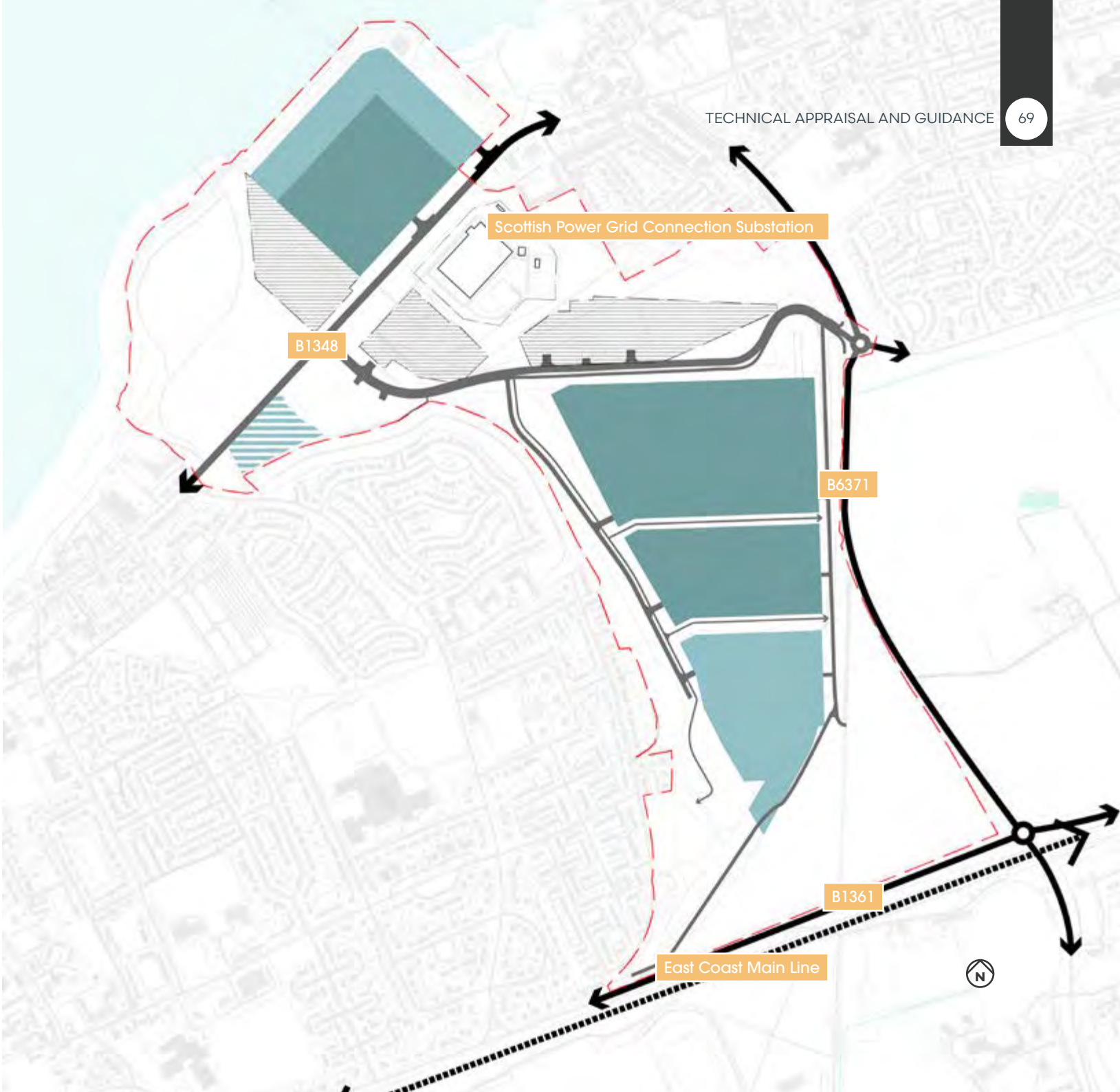
The building heights set out opposite take consideration of the likely required platform heights, to recognise the potential constraint of visual impact. The platform heights are set out overleaf.

BUILDING MASS

The mass of the buildings will be largely guided by internal space requirements of each operator dependent on the operational requirements govern the overall mass of the built form. This will therefore need to be determined at a later, more detailed, stage of design.

Appearance principles set out later in this chapter confirm that some variation in the treatment of the building elevations coupled with the distribution of building massing can add additional visual interest, articulation and rhythm to the overall impression of building massing from both views into and within the site.

Figure 30- Building Heights



4.3 TOPOGRAPHY

THE SECTION SETS OUT THE PLATFORM CONSIDERATIONS, TO ACCOMMODATE LARGE FOOTPRINT EMPLOYMENT BUILDINGS.

PLATFORMING

The northern primary is considered relatively level and although the western secondary developable area is slightly raised above road level with an undulating form, neither are likely to require any significant platforming or earthworks. The southern developable area, however, forms a long and gradual slope and will require to be platformed to a greater or lesser extent.

There isn't a full picture of the location or type of bedrock until further assessments have been undertaken, therefore the working assumption at this level of detail is that the bedrock sits c.1m below ground level. It has therefore been assumed that cut will form a minimal part of the approach to platforming the southern developable area.

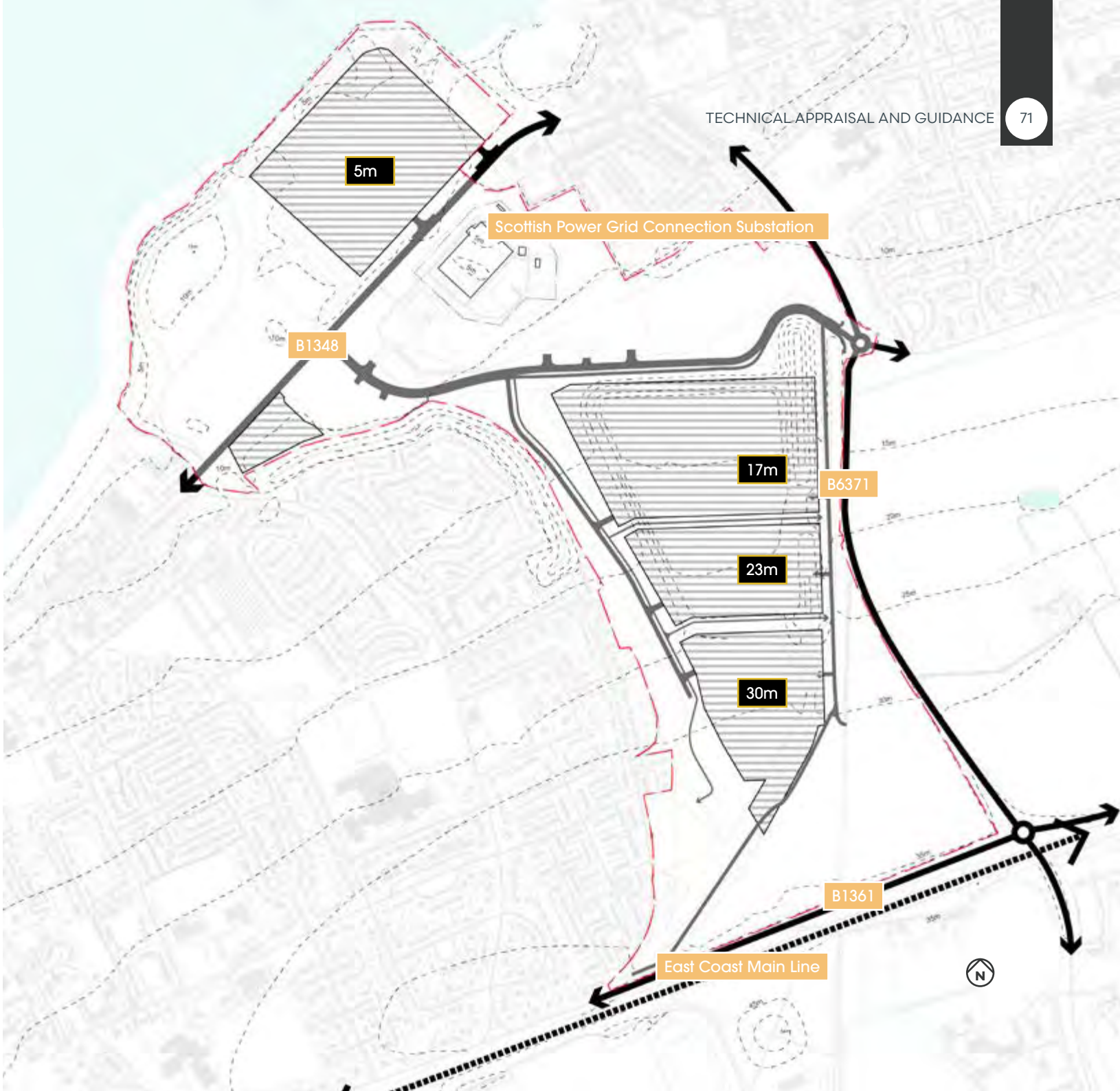
Indicative platform heights have been set which balance the impact of topography and the forming platforms of a suitable scale and dimension to accommodate the necessary land uses.

At this less detailed design stage, platforms are shown to step down the slope from south to north with 45 degree slopes between them.

Of the southern developable area, the northern platform sits at c. 17m AOD, the middle platform sits at c.23m AOD and the southern platform sits at c.30m AOD.

Figure 31- Existing Topography

Figure 32- Platform Heights



4.4 ACCESS & MOVEMENT

THE ACCESS AND MOVEMENT STRATEGY FOR THE SITE HAS BEEN PREPARED IN LINE WITH NATIONAL AND LOCAL POLICY GUIDANCE, AS WELL AS BEST PRACTICE GUIDANCE AND IS SET OUT BELOW.

The modes of transport to and from the site have been considered against a hierarchy of solutions. The intention has been to offer the opportunity to access the site via sustainable travel modes over private vehicle use The road user hierarchy defined in the National Transport Strategy applies, which shows walking and wheeling as the highest priority mode of transport, followed by cycling, public transport, taxis & shared transport, then the private car, in that order.

PEDESTRIAN ACCESS

The proposal would see the permeability of, and access to, the site increase significantly. As such, pedestrian access points and routes will remain as existing for the most part, but supplemented with a primary active travel network which addresses an existing lack of east - west active travel connections and delivers a key north / south active travel route: "The People Mover".

To ensure that the greatest benefit can be made of this access, high-quality pedestrian infrastructure will be provided across the site. The primary active travel network connects east - west at two points through the southern development area, connecting a 3m active travel route which follows the Southern Access Road to the active travel corridor to the east. A 3m active travel route also follows the proposed Link Road east - west to the north of the southern development area.

Within the green infrastructure areas, additional informal footpaths will be provided offering potential for recreation, access to open spaces, development plot access and access to woodland areas in accordance with the Council's recently-approved Tree & Woodland Strategy. Many of these routes are as existing, but key additional connections have also been proposed to facilitate safe routes to Preston Lodge High School from Cockenzie / Port Seton and connections to the south to provide off-road routes to Prestonpans Railway Station.

PUBLIC TRANSPORT

In future there is the potential for key routes through the site to accommodate public transport provision. It is suggested that at a more detailed design stage, the developer works with the public transport operators and the authority to provide the opportunity and infrastructure required to allow buses to divert through the site, this includes:

- Suitable widths and radii along the proposed Link Road / southern access road to accommodate buses;
- Bus lay-by(s) to be provided on proposed Link Road / southern access road or suitable agreed location;
- New bus shelters provided on both sides of the road to provide shelter from the weather for those waiting for buses;
- Bus shelters to include information, lighting and seating to provide a comfortable waiting environment; and
- Level access kerbs and associated tactile paving to be provided at bus stops on site.

INCLUSIVE ACCESS

The proposed development layout should be designed to ensure inclusive access to all users, regardless of age, disability, or mobility. For pedestrians, this involves providing clear and well-maintained pathways, tactile paving for visually impaired individuals, ramps with appropriate gradients, and sufficient lighting. Vehicle access should consider the needs of disabled drivers, including adequate parking spaces with appropriate widths and clear signage. Additionally, the development should facilitate safe and accessible routes for cyclists and pedestrians, encouraging sustainable transport options.

Figure 33- Active Travel Plan

It is also acknowledged that the site's location, the potential shift patterns operating from the site, and the wide catchment area for staff will require a level of access by private vehicles. Steps have, therefore, been taken to address this need.

Guidance set out here aims to achieve a clear and legible network of vehicle routes from the primary movement corridor (which consists of the proposed Link Road and the Southern Access Road) to each of the development plots. Clear route markings for HGVs (if required) will avoid conflict between car parking areas and the HGV service areas.

Internal movement speeds will be restricted to 20mph through the use of signage but also traffic calming design techniques such as the use of pedestrian refuges/ islands to create horizontal deflections.

VEHICULAR ACCESS

The principle vehicular access to the proposed development will be provided from the B1348 (for the northern primary development area and the western secondary development area) and the proposed Link Road (for the southern primary development area).

The detail of access points from the B1348 to the northern development area have been set out previously in the Technical Appraisal chapter. The location and design of these seek to provide two suitable vehicle access points for all potential vehicles.

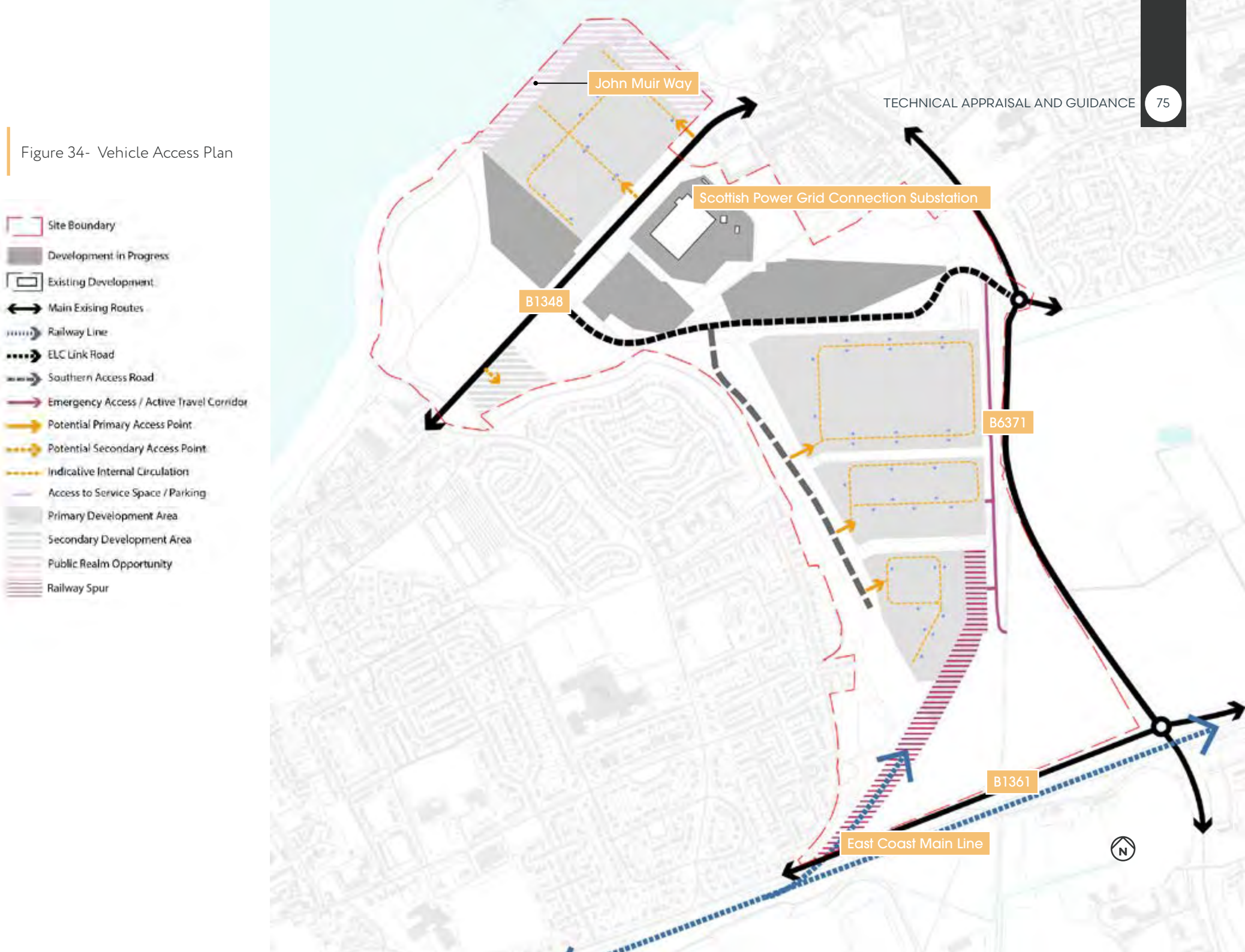
The detail of the Southern Access Road design, providing access to the southern development area, has been set out previously in the Technical Appraisal chapter. The design seeks to incorporate landscape features, drainage features and safely avoid existing infrastructure / structures on site, whilst making use of otherwise undevelopable land within the electricity pylon wayleave.

Emergency access points are always advisable where practicable; this is a designated route or entrance specifically designed to allow emergency vehicles to quickly and safely access the development are in case of an emergency, or were the primary vehicle access point to be obstructed. There is the potential for an emergency vehicle access point for the southern development area from the B6371 to the east. The primary function of this, however, would be as a north / south active travel route, as only emergency vehicles would have access and this would only be in the unlikely case of an emergency.

There is the opportunity to provide measures to aid traffic calming and road safety over and above what has been proposed. This can be achieved by the following methods:

- Additional traffic islands; and
- Reduction in the speed limit locally.

Figure 34- Vehicle Access Plan

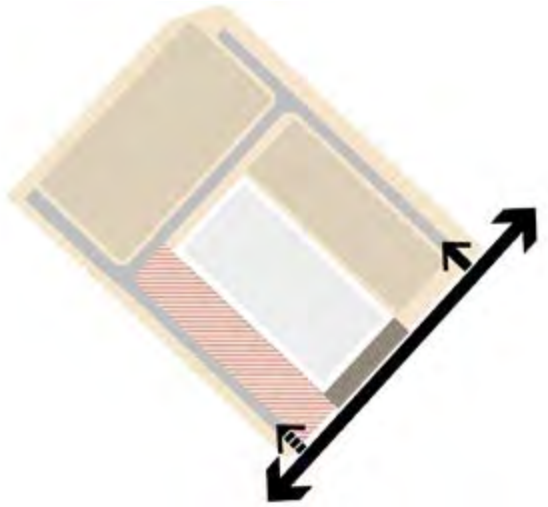


4.5 LAYOUT

THIS SECTION SETS OUT SOME GENERIC DESIGN PRINCIPLES RELATING TO THE POSITIONING OF BUILT FROM, PARKING AND MOVEMENT BETWEEN THE PUBLIC REALM AND BUILDING ENTRANCES FOR EACH OF THE LAND USE TYPES WITHIN THE SITE.

At the end of this section the indicative site layout shows interpretations of these layout principles alongside the design principles established by the land use distributions, scale and landscape strategies set out in other sections of this document.

For the purposes of providing these generic design principles, the use classes are based on size and don't necessarily represent the preferred uses for the site.

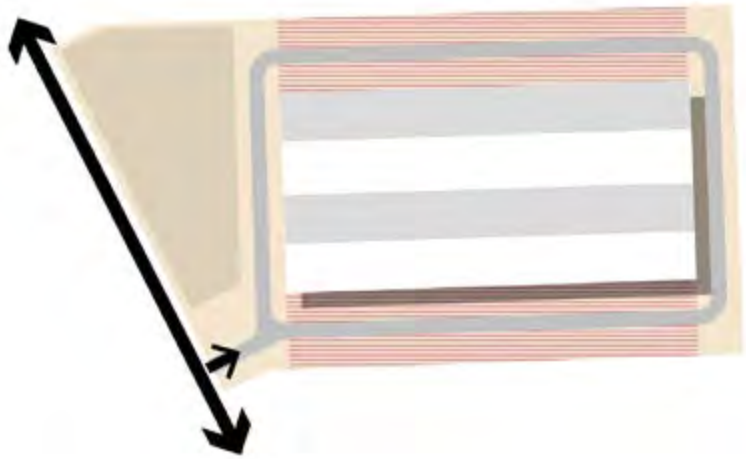


Class 1A (Retail)

- Typically a single, larger footprint;
- 20m depth of HGV access at one long edge for servicing, to rear;
- Up to 30% footprint to plot, 60% parking to plot, 10% access / ancillary to plot;
- Typical largest footprint c.100,000sqft (excluding servicing);
- Road at 10m, 9m radii corners for HGV use, with circulation infrastructure no closer than 10m to built form; and,
- One vehicle access point, with option of 2nd. Loop not necessary but beneficial.

Class 4/5 (Business & Light Industry)

- Typically multiple, smaller footprints;
- HGV servicing limited; requirements specific to industry, some plots with, others without;
- Up to 40% footprint to plot, for footprints less than c.250,000sqft, 10% access / ancillary to plot;
- Buildings spaced a minimum of 10m a part, 30m if also accommodating a road;
- One third of the footprint accommodated elsewhere for parking;
- Road at 10m, 9m radii corners with circulation infrastructure no closer than 10m to built form; and,
- One vehicle access point. Loop necessary.



Class 6 (Storage & Distribution), and Technology and Net Zero Infrastructure (Ambiguous)

- Typically a single, larger footprint;
- 20m depth of HGV access at two long edges for servicing with additional 20m depth of servicing circulation / storage at two long edges;
- Up to 50% footprint to plot, for footprints greater than c.250,000sqft, 10% access / ancillary to plot;
- One third of the footprint accommodated elsewhere for parking, typically on the short edge;
- Road at 10m, 9m radii corners for HGV use, with circulation infrastructure no closer than 10m to built form; and,
- One vehicle access point. Loop necessary.

FRONTAGES / PERMEABILITY

Key frontages should be emphasised along the primary streets, key spaces and the north eastern edge should consider its permeability given its interface with public space.

Key frontages will consist of a variety of treatments such as materiality, elevation treatment, boundaries and landscaping. There should be consideration of interaction between placement of parking / servicing areas and publicly visible areas to ensure that vehicles do not dominate.

Clear consideration should therefore be given to the distinction between public and private space, fronts and backs and create legible and permeable environments.

Primary: Proposed Link Road / Southern Access Road / B1348

The proposed Link Road makes an important east / west connection, and the Southern Access Road performs an important access function to the southern development area. These should be defined by overarching placemaking principles:

- Positive frontage where possible;
- Feature buildings / details terminate key vistas;
- Buildings lines to vary;
- Incidental open spaces created as pockets of green to allow for planting and or seating; and,
- Integrated blue/green infrastructure (swales and street tree planting).

The character of these routes will vary relative to whether it is in-cut or raised and whether tree planting is provided close to the road for screening. Therefore, whether the proposed development faces out, gables on or turns its back to primary routes will depend on the above considerations but any of these approaches when taken together with the landscape strategy will ensure that a high-quality and distinct edge is presented to new infrastructure.

Secondary: Key Spaces and Paths

Positive frontage should be encouraged at all key spaces and paths to provide active and passive supervision.

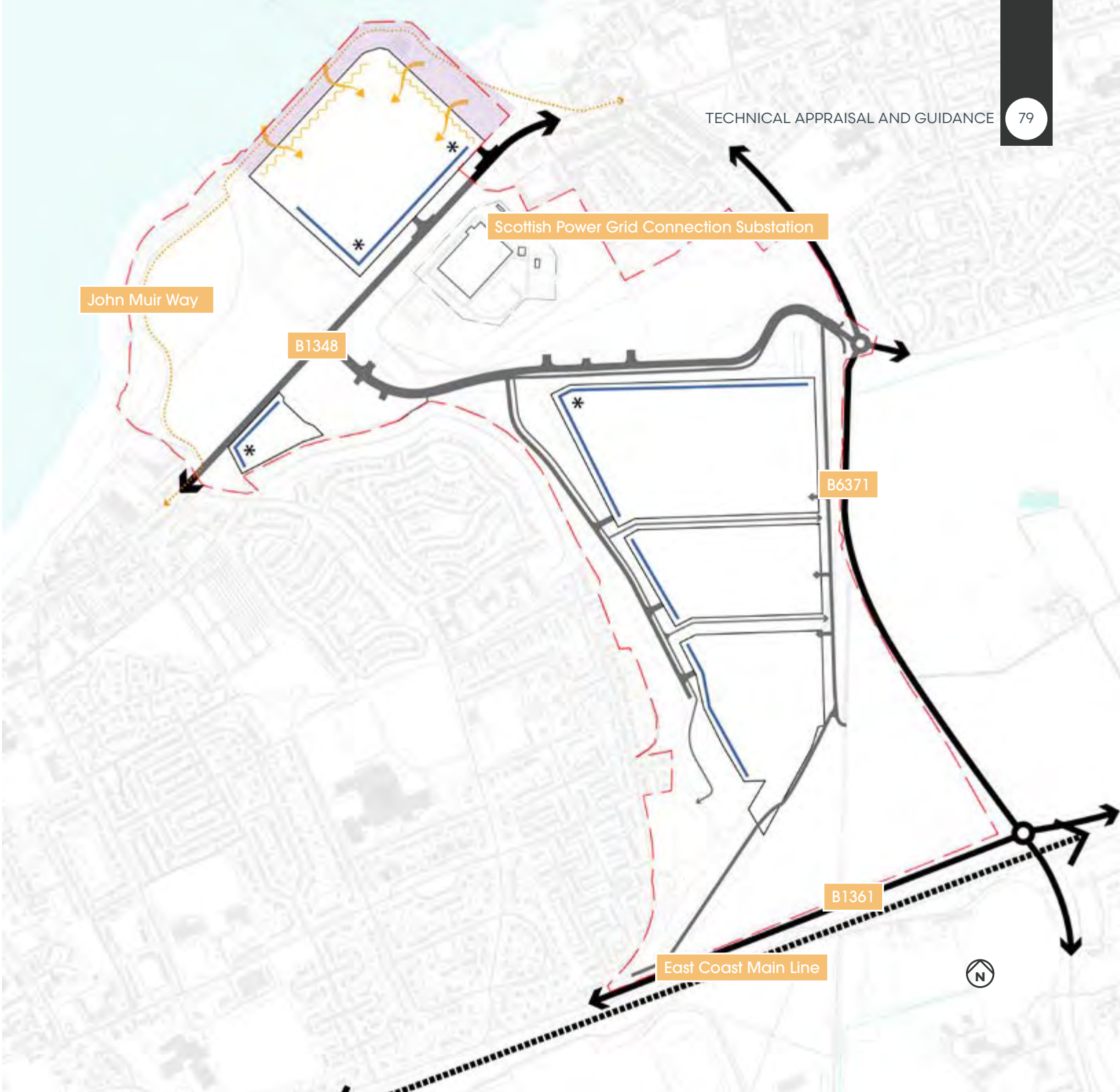
KEY FEATURES

Key features are visible areas from surrounding infrastructure and should be given additional consideration. These may take the form of feature buildings, architectural details or landscaping.

Feature buildings (defined by scale, detailing and materials) will emphasise spaces and routes, supporting the legibility of the site. These buildings will also be used to terminate vistas and in street scenes.

Where building lines can vary, they can expose feature gables which can also be activated by using additional or larger windows.

Figure 35- Urban Form



4.6 APPEARANCE

THIS SECTION PROVIDES GUIDANCE ON THE PROPOSED ARCHITECTURAL APPROACH, WHICH IS INTENDED TO PERMIT VARIETY AND INDIVIDUALITY, SUPPORTING THE ACHIEVEMENT OF A COHERENT BUILT ENVIRONMENT.

The architectural approach for any proposed development will need to be contemporary in line with potential employment uses proposed for the site.

It provides an architectural framework to support the future more detailed design of the proposal. It is not intended to stifle architectural creativity but provide some comfort for decision makers about the potential quality that can be achieved on this site.

The architectural principles have been influenced by the following factors:

- Creating a sense of distinctiveness and place appropriate to the nature of the uses, and with reference to national and international best practice examples of large scale employment use buildings;
- The scale and uses proposed by the application parameters;
- The environmental context of the development; and
- Providing sustainable buildings to reduce energy consumption and minimise waste both during construction and future operation.

The overarching principles are to achieve high-quality, distinctive and sustainable architecture appropriate to the end use of the buildings. The table opposite provides a series of appearance principles and the following pages of precedent images demonstrate how the principles can be interpreted to achieve a high-quality development response.

Figure 36- Light Industry and Warehousing Example Approaches

	Class 1A, Class 6 and Technology and Net Zero Infrastructure	Class 4/5
References	**National and international Best Practice Examples**	
Building Form		
Building Types	Large footprint, single span warehouse buildings. Architecture will provide devices to reduce the visual scale of the buildings in wider landscape views.	Small - medium footprint, single span warehouse buildings. Architecture can include more variation and detail due to the smaller scale.
Building Heights	25m maximum to building ridgeline or top of roof if flat.	8m maximum to building ridgeline or top of roof if flat.
Elevations	These are large scale 'pavilion' structures. All publicly visible elevations to be enlivened through regular variation in material, expression of building grid or structure, fenestration, doors or service openings thereby creating a rhythm to the elevations.	Architecture will provide devices to introduce variety of form, massing and roofline to provide visual interest on key elevations. All publicly visible elevations to have a regular vertical rhythm through the use of fenestration, changes in materials and the use of architectural details. Front doors to be clearly articulated and legibly located in relation to main arrival points.
Corners	Architectural expression may be encouraged at building corners to reinforce the structure and function of the building.	To assist with the building's legibility architectural expression or a small increase in height can be encouraged at building corners.
Details		
Roof Types	Flat, barrel, or shallow pitched roofs will all be acceptable.	
Openings	Areas of glazing and regular openings along primary route elevations, punctuating the elevation cladding and setting a rhythm.	Large areas of glazing or more domestic scale openings or a combination of the two will be acceptable providing it compliments the architectural style for the building.
Roofs	Preformed metal roofing systems, green roofing or similar.	
Ventilation & Servicing	Ventilation will be designed as an integrated feature of the architecture, and roofscape, but should be well screened from public view.	
Walls	Occasional stone elements, predominantly steel, glass, preformed cladding systems	Elements reflecting local vernacular will be appropriate teamed with steel, glass, preformed cladding systems or similar to reflect the more domestic nature of this unit.

MATERIALS

At this stage, the use of hues rather than reference to specific materials will give some required flexibility. This flexibility is necessary for a contemporary and sustainable approach to design. An initial reference baseline colour palette is summarised in the table below which has been informed by reference to the local as well as national best practice building precedents. It is not unusual for buildings of the nature proposed to adopt some reference in the architectural palette from their corporate colour palette. This will only be known at a later stage of design, but should be given careful consideration in the decision making process.

The use of a colour palette for the site will enable some additional variety to be introduced , particularly where landmark features are to be included further assisting legibility.

Public Realm

A consistent approach to the treatment of the public realm will be adopted across the development. High-quality materials and variations in the design of key areas within the site will signify changes in priority, or uses.

Boundary Treatments

The boundary treatments will be informed by the end user. However, where security fencing is to be installed, a landscape buffer will also be required to restrict and soften views of the fencing.

Where security fencing is not required, boundary treatments should be verdant and contain significant areas of low to mid level landscape treatment, reflecting the landscape character of the site and its surroundings.

Lighting and Street Furniture

The signage, street furniture and lighting will have a contemporary appearance. The emphasis will be on avoiding clutter, and providing a public realm design which is integrated with building and urban form. The impact of lighting on the surrounding ecology and countryside will be carefully considered in terms of type of lamp and fitting. Energy efficiency will also be an important requirement. Further details as to the specifications will follow at a later stage of design.

Surface Materials

The strategy throughout the development will be specified to reflect the nature of the spaces. Within public spaces where pedestrians are to have priority, distinctive, high-quality materials will be utilised to highlight the importance of the spaces. The materials will contrast, as a clear indication to vehicles that spaces have pedestrian priority.

Table 7: Indicative Material Palette

	Walls	Roofs
Predominant	White/off white True White, Light Grey, Cool Grey	Slate Grey, Cool Grey
Occasional	Colour Coated Panels in a range of colours including: Light Blue, Light Green, Orange / Red	True White

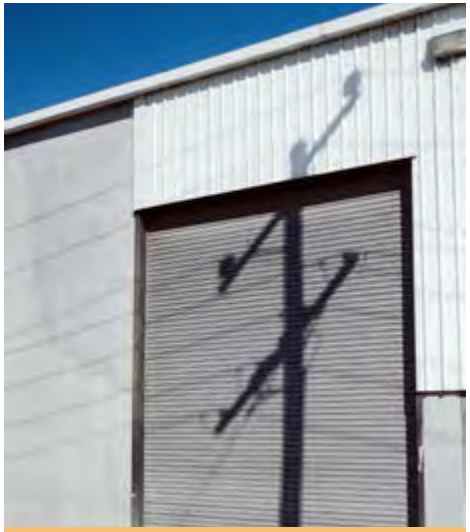
Stairtowers or vertical fenestration in elevations provides opportunities for changes in direction, and scale

Services carefully designed and integrated into the architectural solution

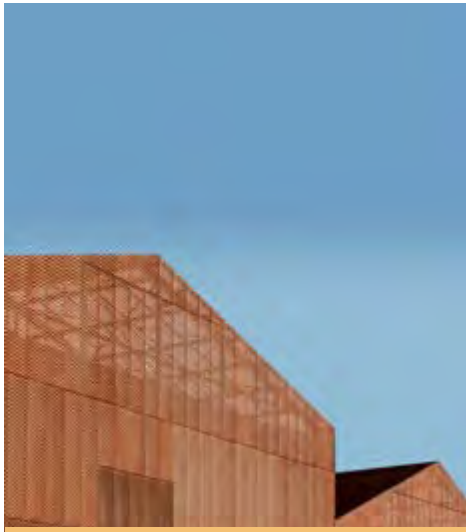
Consideration of appearance at night is an important factor in the architectural response

Using materials to visually blend the elevations and scale with the sky

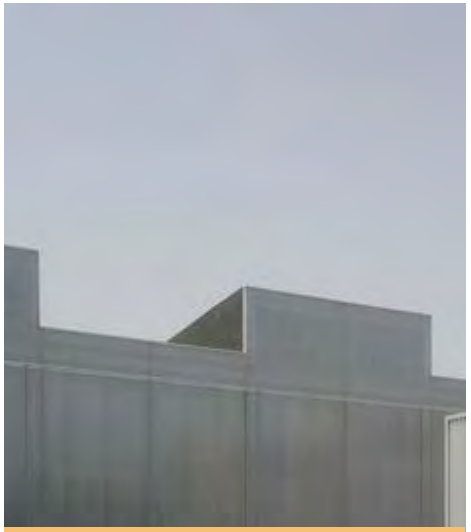
Glazing can be used functionally as well as an architectural feature



Simple and attractive industrial architecture



Unifying materials adds cohesion to elevational treatments, and varying rooflines ads character and vibrancy



Variation in massing to break up the overall scale and differentiate between uses within the building

4.7 SUSTAINABILITY

SUSTAINABLE CONSTRUCTION

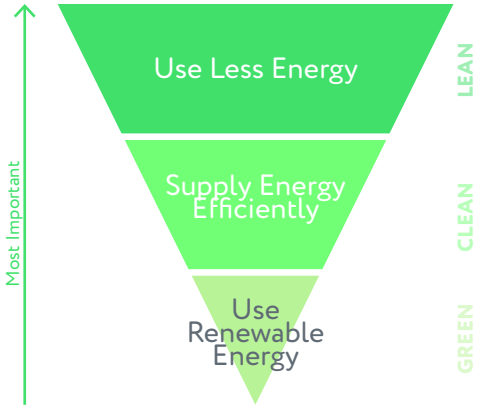
Good design helps meet the challenges of climate change through the use of well-planned layouts and methods for heating, cooling and optimising water and energy use. While the majority of sustainable construction requirements are now addressed through Building Regulations, there are best practice principles. These are as follows:

- Through maximising use of sustainable construction methods and material;
- The creation of a community of users that is flexible and adaptable to a changing climate and the changing needs of occupants and users;
- High-quality design and the use of good quality materials that secure the long-term resilience of the development and minimise the need for ongoing maintenance;
- The re-use and recycling of building materials wherever possible, to avoid material importation and encourage working with the existing site asset, including retained habitats, existing substrates and utilisation of inert materials to create low fertility and lower maintenance landscapes;
- The incorporation of water saving measures including the use of grey water recycling systems within all buildings and the provision of water butts within the curtilage of each dwelling to encourage the use of rainwater for gardening etc; and,
- Long term energy benefits are realised through reducing the inherent energy demand of the buildings and these measures are outlined below.

THE ENERGY HIERARCHY

The Energy Hierarchy shown below encourages development to come forward in a way that seeks to reduce energy demand and comply with carbon emission targets. It requires proposals to:

- Be lean: use less energy
- Be clean: supply energy efficiently
- Be green: use renewable energy



Be lean

The application of passive design principles including:

- Optimal layout and orientation to benefit from solar gain and maximise daylight
- Fabric first approach that makes effective use of thermal mass and facilitates natural ventilation strategies to reduce peak internal temperatures;
- The integration of a comprehensive green and blue infrastructure network;
- The provision of post occupancy training material; and
- The creation of a walkable neighbourhood that reduces the need to use the private car.

Be clean

The efficient supply of energy could be achieved through the use of:

- Highly efficient boilers
- Controls to optimise and compensate for heating variations
- Zonal control of heating to supply different parts of a building via a building management system
- Time and thermostat control of hot water
- High efficiency lighting
- Daylight and passive infra-red motion detection systems to lighting to common areas in order to ensure they are only operated when required
- Ensuring white goods, where supplied, are suitably rated or alternatively, information is provided on selecting energy rated appliances
- Reject heat capture and re-use, especially from HVAC systems and (yet to be defined) commercial/ industrial activities

Be green

The third step in the hierarchy requires the use of on-site, renewable, energy generation and the adoption of measures to achieve net-zero carbon. In doing so proposals should aim to adhere to the sustainable principles of NPF4. Proposals should incorporate the following where possible:

- Photovoltaic (PV) panels
- Ground source heat pumps
- Sea source heat pumps
- Combined heat and power (CHP) systems
- Heat Networks exploiting heat extraction from existing mine water resources

5

DESIGN GUIDANCE

"FLEXIBLE ELEMENTS"

OPEN SPACES

5.1 LANDSCAPE

AREAS OF GREEN INFRASTRUCTURE ARE REQUIRED TO INTEGRATE NECESSARY ACCESS INFRASTRUCTURE, AREAS OF PUBLIC OPEN SPACE, STRUCTURAL PLANTING, RETAINED HEDGEROWS AND TREES, SUDS AND ECOLOGICAL MITIGATION MEASURES TO CREATE A POSITIVE, LEGIBLE LANDSCAPE STRUCTURE THAT PROVIDE GREEN AND BLUE NETWORKS ACROSS THE SITE. THIS SECTION SETS OUT POLICY REQUIREMENTS, KEY PRINCIPLES AND BEST PRACTICE EXAMPLES FOR HOW THE SITE COULD POSSIBLY COULD LOOK IN FUTURE AND SEEKS TO PROVIDE GUIDANCE RATHER THAN A FULLY FORMED STRATEGY; THE STRATEGY SHOULD NOT BE CONSIDERED FIXED.

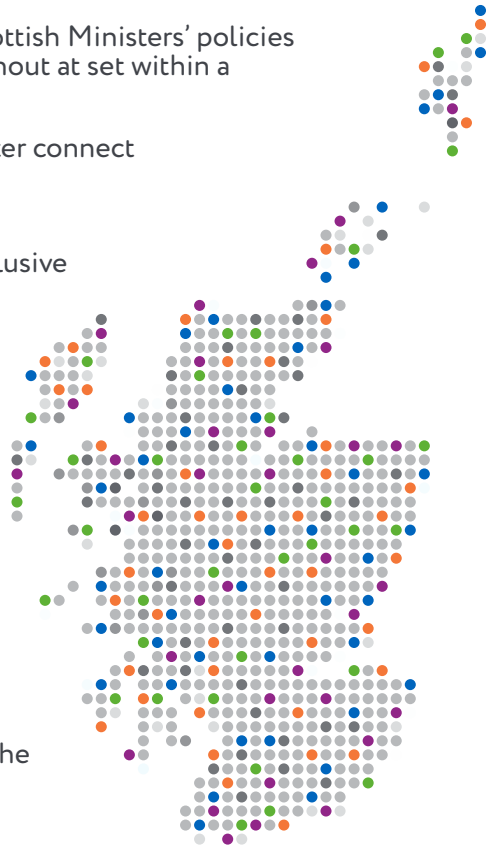
NPF4

NPF4 is part of the statutory development plan and sets out the Scottish Ministers' policies and proposals for the development and use of land. Policies throughout at set within a spacial strategy which support the planning and delivery of:

- **Sustainable** places, where we reduce emissions, restore and better connect biodiversity;
- **Liveable** places, where we can all live better, healthier lives; and
- **Productive** places, where we have a greener, fairer and more inclusive wellbeing economy.

In NPF4 Cockenzie is sited as *"benefiting from existing assets and infrastructure that can be repurposed to form the basis of new proposals. At Cockenzie, work is ongoing to develop an opportunity for a Climate Evolution Zone to generate employment and provide essential infrastructure for net zero, linked with the potential to expand the new sustainable settlement at Blindwells, within the Greater Blindwells Development Area. There is scope to build on the strategic location and rail connectivity of Longannet to benefit local communities around this part of the Forth".*

This Appraisal has identified there is an opportunity to deliver an exemplary Climate Evolution Zone, and key to this is the strategic open space network which will serve to draw the proposals various components together and provide a significant landscape asset for the sub regional area.



BIODIVERSITY AND NPF4

- Policy 3 intends to protect biodiversity, reverse biodiversity loss, deliver positive effects from development and strengthen nature networks.
- This sets out that in the first instance proposals should conserve, restore and enhance biodiversity, including nature networks so they are in a demonstrably better state than without intervention, including management.
- In complementing this, or mitigating any loss, nature-based solutions should be integrated and made best use of such that significant biodiversity enhancements are provided, in addition to any proposed mitigation.
- Measures should be proportionate to the nature and scale of development and local community benefits of the biodiversity and/or nature networks should be considered.
- Measures should also take into account the need to reverse biodiversity loss, safeguard the ecosystem services that the natural environment provides, and build resilience by enhancing nature networks and maximising the potential for restoration.

In order to achieve this it should seek to embody the following overarching principles of the landscape and ecology strategy guidance:

- To create an attractive and pleasant setting for the proposed development that is in keeping with the character of the surrounding landscape and which supports attractive natural and built spaces;
- To integrate the landscape enhancements with the hydrological and ecological mitigation strategies including green and blue infrastructure;
- To protect biodiversity, reverse biodiversity loss, deliver positive effects from development and strengthen nature networks.
- To encourage the provision of suitable native planting and landscape features to reinforce identity;
- To ensure the open space network facilitates safe recreation and activity to support physical and mental health;
- To ensure a well-connected series of open spaces which can support comprehensive active travel networks that make moving around easy and reduce car dependency
- To support the efficient use of resources that will allow people to live, play, work and stay in their area, ensuring climate resilience and integrating nature positive biodiversity solutions;
- To minimise adverse effects on visual amenity; and
- To enhance and extend the existing landscape framework as far as possible, given the development proposal requirements, where this enhances the quality and character of the local landscape.

These principles seek to provide a framework to allow for the delivery of best practices and to ensure delivery in line with key policies at a national level.

These principles can be applied in a number of ways, however an example has been provided to demonstrate these in context. This shows:

- The retention and enhancement of existing landscape features, where possible, to protect biodiversity;
- Significant areas of ecological enhancement and green and blue infrastructure throughout the site, notably running north / south following the western boundary and north west / south east through the northern half of the site to incorporate the drainage strategy;
- A series of connected spaces, each with distinct characters and inclusion of a comprehensive active travel network to ensure each are accessible. These spaces are summarised overleaf;
- An emphasis on biodiversity through delivering positive effects from development and strengthen nature networks with a comprehensive and integrated approach to planting and landscaping;
- Opportunity to provide a sculpture trail / public art throughout the network of open space and to improve access to woodland in accordance with the Council's recently-approved Tree & Woodland Strategy alongside inclusive and accessible path networks, play spaces, opportunities for community food growing, and shared seating and social areas;
- Tree avenues following primary access infrastructure, such as the B1348, the proposed Link Road and the Southern Access Road;
- Generous verges along the Southern Access Road to be defined by formal landscaping, including avenue tree planting and grassed swales;
- Open spaces south of the railway spur to remain more wild in character to preserve the setting of the scheduled monument. There is the opportunity for community driven spaces here, which retain this character;
- Native and locally appropriate species should be selected for the landscape proposals;
- The development plots will include street tree planting to car parking areas, with tree groups to break up very large car parking areas;
- Where car parks front onto the street they will be bounded by significant hedgerow and tree planting;
- Spaces adjacent to platforms will include landscaped swales; and,
- Where levels require, landscaped terraces will address level changes between development platforms.

1. Wetland Park + Boardwalk
2. John Muir Promenade & Community Market / Event Space
3. Linear Orchard
4. Climate Woodland
5. Community Green Space
6. Retained Greenhills & Preston Crescent Gardens

Figure 37- Landscape Strategy

1 Wetland Park

- The Wetland Park sits on either side of the B1348, the western extent of this occupying the south eastern corner of Greenhills, covered separately at the end of this section.
- A SuDS feature is proposed at its southern edge, south of B1348. There is the opportunity for this to be a well integrated hydrological feature. This can be enhanced to provide woodland and suitable planting and consideration given to its safety as a public space.
- The habitat rich parkland will comprise a variety of sizes and are included within the development to provide the opportunity for social interaction as well as local areas of play and education opportunities.
- There is also the opportunity to consider corridors for animal movements between the wetland park and other open space for animals such as frogs, newts and toads.
- These formal open spaces comprise SuDS ponds / basins, wildflower grassland, native trees and shrubs and herbaceous planting to create high value natural open spaces. Formal play areas can be incorporated within these areas providing a key benefit to future residents and the wider public.
- SuDS basins designed as a attenuation / treatment areas are incorporated with wetland habitat to create a rich biodiverse landscape feature. The landscape character zone will incorporate:
  - » Native canopy trees;
  - » Wildflower grassland;
  - » Marginal planting;
  - » Island loafing areas; and,
  - » Raised boardwalks.

Figure 38- Wetland Park

2 John Muir Promenade / Community Market / Event Space

- There is an opportunity for improvements at the north western and north eastern edge of the Northern Development Area, to enhance placemaking and provide high-quality public realm for visitors and residents.
- A c.30m area of land to the north west of the Northern Development Area is envisaged as a distinctive vehicle free promenade to provide a memorable feature on the John Muir Way.
- This connects with a Community Market / Event Space with a similar aesthetic and is envisaged as a key local space adjacent to the harbour for weekly markets / community events. A mix of soft and hard landscape materials, providing space to dwell. Materiality will be sympathetic to existing characteristics and there is the opportunity for seating, street furniture as required and wayfinding / information boards.
- This semi-formal / formal could include avenue trees, native and ornamental tree planting, planters and / or a mixture of native hedgerows.
- The landscape character zone will incorporate:
  - » Native canopy tree planting;
  - » Reed beds and marginal planting;
  - » Planters with native species rich grassland;
  - » Footpath linkages; and,
  - » Opportunity for creation of focal point (public art or similar).

Figure 39- John Muir Promenade / Community Market / Event Space

3 Linear Orchard

- It takes the form of a green corridors comprising hydrological mitigation (drainage swales), extensive orchard planting, wildflower grassland and shrub / grove planting to provide a habitat rich environment, foraging opportunities for local wildlife and to enhance biodiversity.
- The space seeks to expand an enhance the existing Community Orchard. (see overleaf).
- The Linear Parkland provides an important active travel function north / south through the site and connects with routes east / west also and serves to connect all existing and proposed open spaces.
- There is the opportunity for informal play spaces, community food growing, allotments, shared seating and social areas adjacent to inclusive and accessible path networks alongside the opportunity to minimise adverse effects on visual amenity of adjacent development with a considered and appropriate planting scheme.
- The landscape character zone will incorporate:
  - » Heritage orchard planting;
  - » Species rich wildflower grassland;
  - » Shrub / grove planting;
  - » Community growing areas / allotments;
  - » Footpath network;
  - » Informal play areas; and,
  - » Opportunity for creation of focal points throughout (public art or similar).

Figure 40- Linear Orchard

Community Orchard Planting

Orchards provide an important role for the community, but also biodiversity. There is the opportunity for community involvement as the shape and location of the orchards develop.

- Servicing requirements (existing electricity cables), and drainage requirements mean that the existing community orchard is likely to be impacted, although the extent of this won't be known until a more detailed design stage.
- Where possible, all existing Community Orchard trees will be retained. Where this is not possible, a series of options will be explored in order, either relocation of the existing trees or propogation of new trees from the existing trees.
- In all cases propogation will take place to ensure the entire proposed Community Orchard is directly related to the existing trees.
- There is the opportunity to introduce complementery heritage apple varieties.
- This approach will also enhance biodiversity and contribute to the landscape's visual and ecological quality, providing an enriched habitat for wildlife and an expanded sustainable green space for the community to enjoy. Set in a more significant area of open space, there are opportunities for educational boards, shared seating and social areas. Their location adjacent to the inclusive path network also ensures its more accessible, available and of more benefit to the wider community.
- The opportunity to preserve and enhance the legacy of the Community Orchard as an integral part of this development is significant, ensuring its value is not only protected but also strengthened for years to come, ensuring its legacy for future generations.

1

RETENTION

- Wherever feasible, existing apple trees will be retained in situ, integrated into the overall landscape design.
- To ensure their long-term health, any retained trees will be assessed by an arboricultural specialist, with appropriate care and maintenance provided during and after the development process.

2

RELOCATION

- In cases where trees cannot be retained due to development constraints, we will work to relocate the trees.
- Relocation involves carefully excavating the tree, preserving the root system as much as possible, and replanting it in a suitable location nearby. This process requires expert handling and is generally best done when the tree is dormant (late autumn to early spring).

3

PROPOGATION

- In cases where trees cannot be relocated due to development constraints, we will work to propagate new saplings from them.
- Propagation will involve taking cuttings or grafting material from the existing trees to create new saplings that preserve the genetic heritage of the orchard.
- Propagation is a straightforward process commonly used for apple trees and ensures the unique characteristics of the heritage apple varieties are retained.

4 Climate Woodland

- A significant area of new woodland creation is proposed to the south of the linear park, and combined with existing planting on site. This will form an important part of the biodiversity strategy for the site, and a visual screen to the Southern Development Area from adjacent streets / road network from the west.
- The Climate Woodland comprises shelter belts designed as an interface with adjacent existing open spaces such as Preston Crescent Gardens.
- There is the opportunity for play spaces, community food growing, orchards, shared seating and social areas adjacent to inclusive and accessible path networks.
- This well traversed belt will provide a footpath/cycle connections from Preston Crescent Gardens, Open Space and Play Area and the existing network following the B1361 and its connections to Prestonpans Railway Station.
- The railway spur which bisects the Climate Woodland provides a key active trave route north / south; “The People Mover”. There is also the opportunity to include potential allotments or community growing areas adjacent to paths to provide activity / surveilance.
- A green corridor will enhance biodiversity and increase habitat value.
- The landscape character zone will incorporate:
  - » Native tree planting; and,
  - » Species rich meadow

Figure 41- Climate Woodland

5 Community Green Space

- This zone has a much more open character and respects the setting of the Scheduled Monument and the 1722 Waggonway.
- There is the opportunity for this to become a Community Green Space and develop in line with community will.
- An area more wild in character will enhance biodiversity and increase habitat value.
- There is the opportunity for community food growing, shared seating and social areas adjacent to inclusive and accessible path networks.
- Some enhanced woodland planting to the north of this area will help screen the Southern Development Area from the adjacent B6371.
- The landscape character zone will incorporate:
  - » Species rich meadow;
  - » Footpath network;
  - » Species rich wildflower grassland;
  - » Native tree planting (to the north only); and,
  - » Opportunity for creation of focal points throughout (public art or similar).

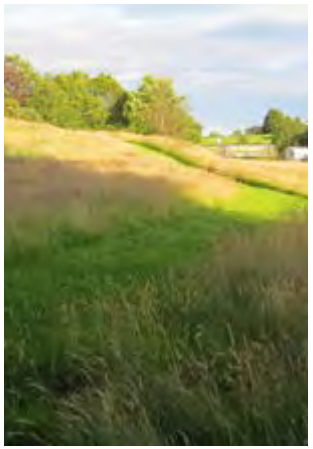


Figure 42- Community Green Space

6 Greenhills & Preston Crescent Gardens

- The open character of Greenhills will be preserved at the waterfront to minimise adverse effects on visual amenity.
- Greenhills & Preston Crescent Gardens are well used and enjoyed local existing open spaces and any change would involve community involvement.
- There is the opportunity for tree planting, play spaces, community food growing, shared seating and social areas adjacent to inclusive and accessible path networks alongside opportunities for upgrading / making improvements to existing play facilities at this location.
- Preston Crescent Gardens remains as existing, with a woodland edge proposed to its eastern perimeter. Proposed active travel connections through this, to the wider network and site will improve accessibility.

Figure 43- Greenhills

Figure 44- Preston Crescent Gardens

5.2 SUSTAINABILITY

A COMPREHENSIVE AND CONSIDERED APPROACH TO THE GREEN AND BLUE INFRASTRUCTURE WILL DELIVER A BIODIVERSE SERIES OF INTERCONNECTED SPACES AND WILDLIFE HABITATS WHICH REINFORCE AND CELEBRATE THE EXISTING RICH NATURAL ASSETS OF THIS SITE.

Sustainability underpins the overarching aims of the landscape and ecology strategy in order to encourage, promote and facilitate development that minimises emissions and adapts to the current and future impacts of climate change and the proposals resilience to them. Additional opportunities outwith the formal open space network for enhancement of existing, and the creation of new, habitats which provide opportunities for biodiversity enhancement should also be considered.

The key to the provision of such spaces is that they form integrated and multi-functional nature networks with suitable management arrangements for their long-term retention and monitoring. The following principles should be considered in the first instance, in order to minimise adverse impacts on biodiversity:

- Retaining existing valuable habitats and species, and avoiding their fragmentation with a view to conserving, restoring and enhancing biodiversity, including nature networks, so they are in a demonstrably better state than without intervention; and,
- Avoiding any deterioration in the quality and function of existing habitats.

Where impacts are unavoidable appropriate mitigation should:

- Minimise any risk of harm to species, habitats and ecological connectivity;
- Form nature-based solutions that appropriately integrate with existing biodiversity;
- Be proportionate to the nature and scale of development; and,
- Consider local community benefits.

In order to biodiversity enhancement in addition to retention and mitigation, a range of additional features / considerations could include:

- The creation of additional/ replacement habitats and features to 'offset' any loss with consideration of native plant species to support local biodiversity and ecosystem function;
- Where any impacts are temporary, the full and comprehensive restoration of habitats;
- Integral bee bricks and bat boxes;
- The of use existing inert and low fertility substrates for species rich grassland/ wildflower meadows and ecological niche habitats such as bee banks and other nature rich design features;
- Rain gardens to manage stormwater runoff, create wildlife habitats, and improve water quality;
- Swales as part of an integrated green and blue infrastructure approach;
- Stand alone bat houses, bee towers positioned in strategic locations;
- Wildlife corridors where practicable to connect green spaces to create larger habitat areas
- Green roofs used where possible; and,
- Pollinator gardens to provide food sources for pollinators; and
- Bug hotels and stacked positioned along woodland edges to promote wildlife habitat growth.

Wetlands and ponds

Green roofs

Productive hedgerow

Bug hotels

Orchard planting

Bee houses and bricks

Bat houses and boxes

5.3 COMMUNITY GROWING / ALLOTMENTS

ALLOTMENTS SHOULD BE AN INTEGRAL PART OF THE LANDSCAPE STRATEGY FOR THE PROPOSED DEVELOPMENT, PROVIDING ACCESSIBLE AND WELL-DESIGNED SPACES FOR COMMUNITY FOOD GROWING. THEY SHOULD BE ACCESSIBLE AND INCLUSIVE, CATERING TO A RANGE OF USERS, FROM EXPERIENCED GROWERS TO BEGINNERS, AND OFFER OPPORTUNITIES FOR SOCIAL INTERACTION, EDUCATION, AND WELLBEING.

The inclusion of allotments should complement other open space uses and be located in areas that are accessible to the local community, with direct links to footpaths, cycle routes, and public transport networks. Allotments should benefit from good levels of natural light, appropriate drainage, and protection from adverse weather conditions.

The proposed development will provide opportunities to incorporate allotment spaces in a variety of forms, such as:

- Formal allotments: Designated plots with defined boundaries and supporting infrastructure such as water points, composting areas, and storage sheds;
- Community growing areas: Flexible spaces for collaborative growing projects, suitable for schools, community groups, or local organisations; and,
- Informal edible landscapes: Integration of fruit trees, herb gardens, and edible plants within broader green spaces to encourage casual foraging and community engagement.

Proposals for allotments should consider the following best-practice principles:

- Accessibility: Allotments should be located within walking distance of residential areas, with step-free access and facilities for people with limited mobility;
- Supporting infrastructure: Provision of communal facilities, such as water supply, tool storage, composting areas, and sheltered seating;
- Safety and security: Clear boundaries, fencing, and lighting to provide a safe and welcoming environment;
- Community engagement: Opportunities for residents to be involved in the design, management, and ongoing maintenance of the allotments; and,
- Biodiversity and sustainability: Use of native planting, pollinator-friendly species, and organic gardening practices to enhance biodiversity and environmental sustainability.

Allotment spaces should also align with local authority recommendations, including those outlined in the Allotments and Community Growing Strategy, to ensure they address the growing demand for local food production, promote healthy lifestyles, and foster community connections. Proposals should be designed to accommodate future flexibility, allowing spaces to adapt to changing community needs over time.

Community engagement

Allotment layout

Raised beds

Planting to help enhance biodiversity

Poly tunnels and additional beds

Water supply

Sheds and Composting Units

5.4
PUBLIC SPACE

THE NORTHERN EDGE OF THE SITE FRONTS THE FORTH AND ACCOMMODATES THE JOHN MUIR WAY. THERE IS AN OPPORTUNITY FOR HIGH-QUALITY PUBLIC REALM WHICH MEETS THE NEEDS OF THE COMMUNITY, VISITORS AND END USERS. A CONSISTENT APPLICATION OF PRINCIPLES THROUGHOUT THE SITE WILL HELP TO DELIVER A COHERENT AND LEGIBLE PUBLIC REALM.

STREETS AND COMMUNAL SPACES

The landscape strategy includes an area for a community market / event space and the John Muir Promenade, located adjacent to Cockenzie Harbour, following the coast to the north.

This will providing a space for the community to gather, and spaces to stop and settle provides the opportunity to enhance the northern edge of the site with a mix of soft and hard landscape materials for the wider community benefit.

Contemporary principles of urban design, landscape design and architecture that is sympathetic to existing characteristics but at the same time achieves its own complementary architectural style that exemplifies best practice.

Aesthetic appearance and ongoing maintenance of hard landscape materials should be considered together with the cost and construction. This balance will vary according to the use and function of the different streets and spaces and highways standards must be met for both adopted and unadopted spaces.

A consistent application of principles throughout the site will help to deliver a coherent and legible public realm. It will be preferable to avoid wide expanses of plain tarmac and there are opportunities to use block paving in key spaces.

Within public spaces where pedestrians are to have priority, distinctive, high quality materials will be utilised to highlight the importance of the spaces.

The materials will contrast, as a clear indication to vehicles that spaces have pedestrian priority.

The signage, street furniture and lighting will have a contemporary appearance. The emphasis will be on avoiding clutter, and providing a public realm design which is integrated with building and urban form. The impact of lighting on the surrounding ecology and countryside will be carefully considered in terms of type of lamp and fitting. Energy efficiency will also be an important requirement.

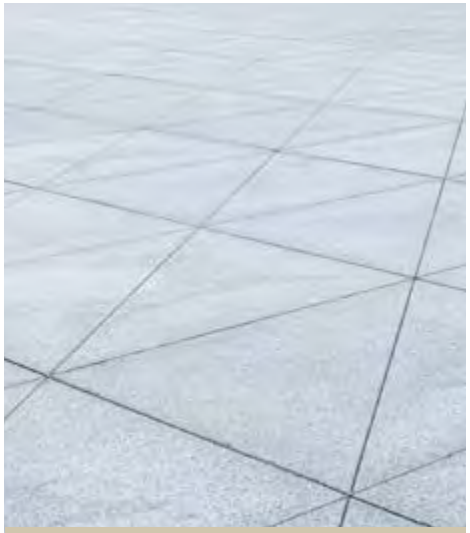
A permeable northern edge to more human-scale employment uses within the northern development area facilitates access to these spaces from industrial units and could also provide the opportunity for visitors to access a cafe or similar facility.

STREET FURNITURE AND WAYFINDING

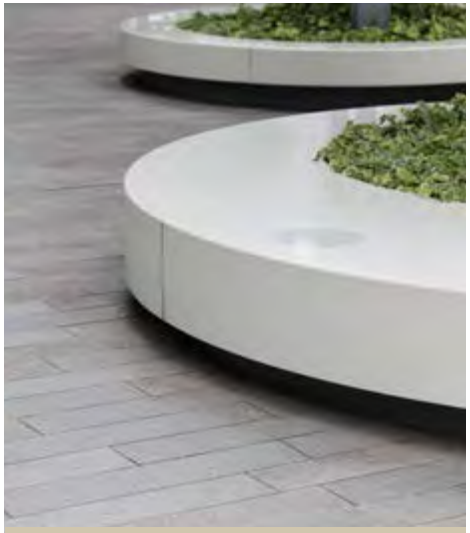
The site wide strategy is to create a clear and robust design language, which is easily interpreted and with strong longevity. The use of sustainable, durable timber for benches and bins and contrasting metal corten or similar for signage. Lighting will be designed around its location with tall columns along main urban routes with smaller lower level lighting for key pedestrian routes. Consideration should be given to the site's coastal setting in making a choice of material for street furniture and wayfinding features.

Boundaries and hard landscape will be hierarchical and selected to suit its appropriateness and appearance. Integration of landscape features with public realm aid placemaking, health & well-being and climate resilience. These can include planters, tree planting and soft landscaping and guidance should be referred to in 'John Muir Promenade / Community Market / Event Space' section.

High-quality and unimposing seating



Contemporary paving arrangements



Seating incorporated with planters and landscaping

Paving which aids drainage and provides a more green aesthetic

Integrating information or signage into paving

Sensitive lighting

Use of consistent materiality can unify a space

Signage / wayfinding

5.5 DRAINAGE

THE WATER AND DRAINAGE STRATEGY FOR THE PROPOSED DEVELOPMENT SHOULD ENSURE THAT THE PROPOSAL WILL NOT ADVERSELY IMPACT ON THE OPERATION OF DRAINAGE SYSTEM IN THE AREA, OR INCREASE THE RISK OF FLOODING ON THE SITE OR ELSEWHERE.

Drainage systems should collect and manage surface water flows from source to discharge point. They include Sustainable Drainage Systems (SuDs) using a combination of the following features:

- Rain gardens;
- Swales;
- Storage ponds; and
- Aquatic and wetland habitat.

These features should form a comprehensive and integrated SuDS network. This reinforces the sustainable credentials of the site, contributes to open space, creates wildlife habitats, improves water quality and delivers a rich and varied series of habitats.

The overall strategy should focus on integration and interaction, with features being part of the landscape strategy rather than standalone systems. This can be achieved by ensuring features are interactive, such as with interactive wet swales / ponds, including rain gardens as part of public spaces and ensuring ponds wetlands are accessible.

Pipe-free networks also include provision of increased capacity of flow compared to the cost of equivalent piped drainage, which in turn leads to savings in construction costs.

The open nature of a pipe-free network becomes, by its nature, part of the blue green infrastructure providing habitat and increasing biodiversity. In addition, where failure occurs either through cross connections or hydraulic weakness, this becomes immediately apparent and will be easier to remedy than a piped network.

Interactive wet swales

Interactive wet ponds

Ponds

Rain gardens

GREEN & BLUE INFRASTRUCTURE (GBI)

Small-Scale GBI

Recent developments in the field of urban GBI have led to a renewed interest in the multi functionality and associated benefits of small-scale GBI, such as community green spaces, pocket parks, rain gardens, or temporary recreation spaces along streets. Such small-scale GBI make an important contribution to the daily life of urban residents and meet people's functional needs, providing places for leisure, relaxation, and socialising. Thus, small-scale GBI have the potential to complement the health impacts and social functions of larger scale sites. More recently, research has heightened awareness of the need for community participation and engagement in the co-production of small-scale GBI projects, demonstrating how this can enhance sites and provide opportunities to build community cohesion.

Large-Scale GBI

The availability and accessibility of green space is particularly important for large-scale GBI, which can play a role in physical and mental health, exercise, and social interaction. The benefits of all large-scale GBI are maximised if:

- They are close to areas of deprivation, enabling easy access for local people, and include a range of facilities (e.g. walking trails)
- The spaces are protected and managed carefully so that they provide both ecological value and high-quality natural experiences. Care needs to be taken not to compromise the positive health benefits that green spaces offer to urban residents.
- They achieve naturalness without compromising safety and security. Thought needs to be given to use, sight lines, and provision of a variety of spaces, so that people can enjoy the GBI. Local residents are involved from the design and planning stages.

Linear GBI

Linear GBI can be used to connect green areas, creating corridors for the movement of both wildlife and people through an urban area. Examples include rows of street trees, hedgerows, and urban streams. Linear GBI can improve access between different green spaces within the development, or between green spaces in the development and the surrounding landscape. It offers opportunities to develop blue-green routes for walking and cycling, which contribute towards a healthy and sustainable transport plan.

Within the site, green corridors linked with watercourses and other blue infrastructure (SuDS) provide connections across the site linked to active travel routes. Use of sterile areas where existing overhead and below ground infrastructure should be used to maximise implementation of GBI.

Community Involvement

GBI may provide attractive places for social contact and interaction, which can promote a sense of community.

Studies have indicated that residents living in areas with a greater variety of natural open spaces had an increased sense of community and a stronger attachment to their community.

Embedding green space in an urbanised environment may be associated with increased social and psychological benefits also, including sense of pride in the neighbourhood, motivation, and a more positive attitude .

Maintaining access through GBI features

Well integrated GBI

multi-functional GBI

Interactive GBI

5.6 PLAY

PLAY PROVISION IS AN IMPORTANT PART OF THE LANDSCAPE STRATEGY TO ENCOURAGE ACTIVITY, RECREATION AND ENHANCE OPEN SPACES.

PLAY PROVISION

Play provision for children and young people should be well-integrated into the landscape strategy for the proposed development and be accessible to users / surrounding residents. Provision should include a diverse range of safe, attractive and stimulating spaces, catering for all age groups and abilities.

Formal play provision should be complemented by natural play spaces, alongside direct links to the countryside to provide children with a varied environment to explore. Where possible, play spaces should be integrated with other formal or informal open spaces and be located in key locations off the main primary and secondary streets. They should be located in traffic free areas and be in close proximity to footpaths and cycle routes.

The proposed development will provide a number of green spaces which can accommodate a series of formal play spaces such as:

- Neighbourhood Equipped Areas for Play (NEAP);
- Local Equipped Areas for Play (LEAP); and,
- Local Areas for Play (LAP).

They can also accommodate a series of informal play spaces such as:

- Natural informal play;
- Landform play in meadows and parkland; and,
- Interactive play using information boards.

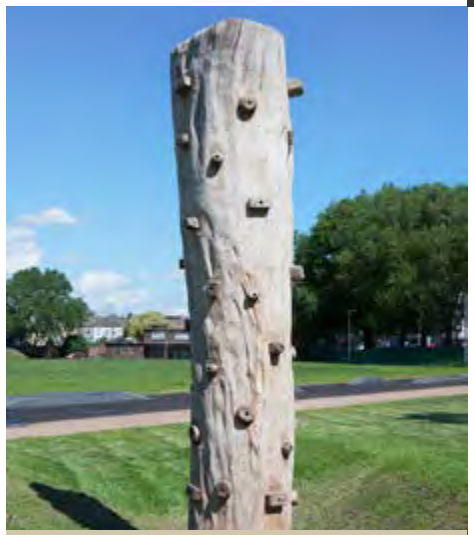
Proposals should be considerate of the key recommendations from the East Lothian Play Sufficiency Assessment Report. This acknowledged an excellent quantity of play provision in East Lothian and recommended future focus areas consider:

- Increasing opportunities for sensory, creative and nature-based play;
- Increasing all play opportunities for the 12-17 year old groups;
- Increasing opportunities for calm, quiet play and for social play;
- Increasing ‘hang out’ spaces for the 12-17 year old age groups;
- Increasing the variety of play space surfaces and including a wider variety of inclusive fixed equipment;
- Integrating inclusive play opportunities into the main play space;
- Including features to support play for children with a wider variety of disabilities;
- Improving safe, accessible routes into play spaces; and,
- Embedding lived experience into play space design.

Natural play equipment

Natural play equipment

Informal play opportunities



Informal play opportunities

Interactive play

Utilising local materials

Considered placement of varied type / styles of equipment

Non-typical play equipment adds variety

5.7 PUBLIC ART

PUBLIC ART

There are a number of places within the network of open spaces where public art / sculpture would enhance the character and cohesiveness of the proposed development. Any Public Art Strategy would be developed in consultation with East Lothian council and the local community / key stakeholders. It is likely that public art at a variety of scales could be provided at the following locations:

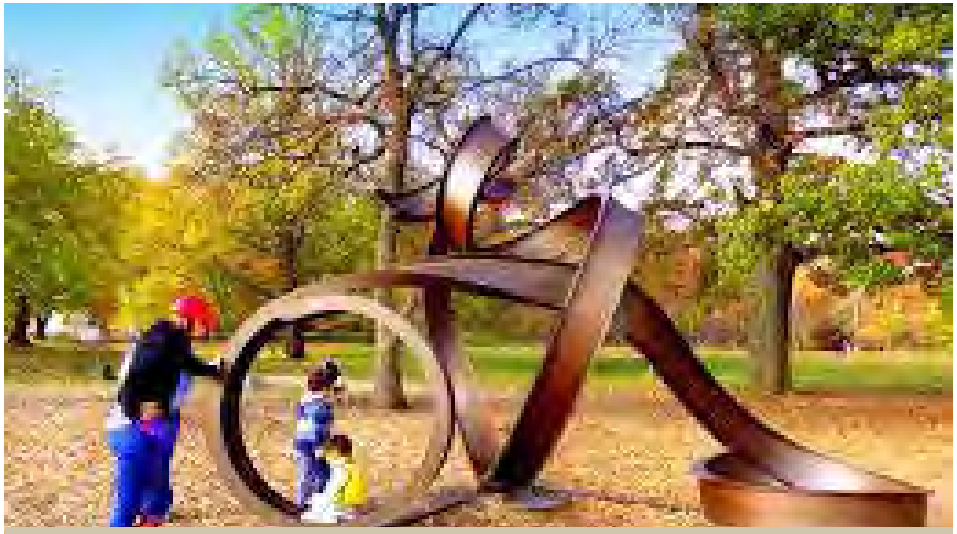
- John Muir Promenade / Community Market / Events Space;
- Wetlands Park / Greenhills;
- North of Linear Park;
- South of Linear Park;
- Community Open Space to East; and,
- Eastern Gateway from B6371.

Figure 45- Public Art

Considerate placement / materiality of public art

Use of natural materials

Integration of signage and enhancement of ‘destination’



Interactive sculpture

6 OPTIONS SUMMARY

6.1 INDICATIVE LAYOUT 1

This spread sets out a potential indicative layout which demonstrates how the observation of the principles set out within this document could manifest themselves.

The proposed distribution of land uses and application of the design principles set out in this document are shown on the plan opposite (Figure 48) and the table below. The plan demonstrates the potential distribution of land uses Class 4/5 (Business & Light Industry), Class 6 (Storage & Distribution), and Technology and Net Zero Infrastructure (Ambiguous) alongside ancillary facilities.

The layout opposite shows these incorporated with the foundation components from the Technical Appraisal section and set within a comprehensive landscape and active travel strategy. There is additional scope within the development areas to provide biodiversity enhancement within the public realm and in adjacent areas.

Land Use		Platform Area	Indicative Footprints
North			
	Class 4/5 (Business & Light Industry)	c.4.5ha	c.153,000sqft
	Class 6 (Storage & Distribution)	c.3.5ha	c.134,000sqft
South			
	Technology and Net Zero Infrastructure (Ambiguous)	c.13.85ha	c.534,000sqft
	Class 4/5 (Business & Light Industry)	c.5.05ha	c.178,000sqft

Figure 46- Layout 1 Indicative Footprints

Figure 47- Layout 1

6.2 INDICATIVE LAYOUT 2

This spread sets out a potential indicative layout which demonstrates how the observation of the principles set out within this document could manifest themselves.

The proposed distribution of land uses and application of the design principles set out in this document are shown on the plan opposite (Figure 50) and the table below. The plan demonstrates the potential distribution of land uses Class 1A (Retail), Class 4/5 (Business & Light Industry), and Class 6 (Storage & Distribution) alongside ancillary facilities.

The layout opposite shows these incorporated with the foundation components from the Technical Appraisal section and set within a comprehensive landscape and active travel strategy. There is additional scope within the development areas to provide biodiversity enhancement within the public realm and in adjacent areas.

Land Use		Platform Area	Indicative Footprints
North			
	Class 1A (Retail)	c.4.5ha	c.100,000sqft
	Class 4/5 (Business & Light Industry)	c.3.5ha	c.130,000sqft
South			
	Class 4/5 (Business & Light Industry)	c.9.63ha	c.328,000sqft
	Class 6 (Storage & Distribution)	c.9.27ha	c.380,000sqft

Figure 48- Layout 2 Indicative Footprints

Figure 49- Layout 2

6.3 INDICATIVE LAYOUT 2A

This spread sets out a varient of Layout 2, however introduces a residential component adjacent to Cockenzie Harbour. This option would be driven by viability, and would provide a means to raise funds for the repair and restoration of the harbour, harbour walls and deliver a community park extension at the heart of the community.

The proposed distribution of land uses and application of the design principles set out in this document are shown on the plan opposite (Figure 50) and the table below. The plan demonstrates the potential distribution of land uses Class 1A (Retail), Class 4/5 (Business & Light Industry), Class 6 (Storage & Distribution) alongside ancillary facilities, and c.181,000sqft Class 3C (Residential). Assuming 3 storey appartments with undercroft parking, this would indicatively provide around 190 apartments.

The layout opposite shows these incorporated with the foundation components from the Technical Appraisal section and set within a comprehensive landscape and active travel strategy. There is additional scope within the development areas to provide biodiversity enhancement within the public realm and in adjacent areas.

Land Use		Platform Area	Indicative Footprints	Indicative Units*
North				
	Class 1A (Retail)	c.4.5ha	c.100,000sqft	
	Class 4/5 (Business & Light Industry)	c.3.5ha	c.130,000sqft	
	Class 3C (Residential)	c.2.78ha	c.181,550sqft	c.190
South				
	Class 4/5 (Business & Light Industry)	c.9.63ha	c.328,000sqft	
	Class 6 (Storage & Distribution)	c.9.27ha	c.380,000sqft	

*Assumes 3 storey appartments with undercroft parking to provide an indicative figure.

Figure 50- Layout 2A Indicative Footprints

Figure 51- Layout 2

6.4 HIGH LEVEL COSTING

A HIGH LEVEL COSTING EXERCISE HAS BEEN UNDERTAKEN FOR THE KEY ENABLING INFRASTRUCTURE FOR THE SITE.

NORTHERN ACCESS POINTS & SOUTHERN ACCESS ROAD COSTING

The costing exercise has considered the access to the two primary development areas, which for the purposes of this report will be named site A and site B. Site A is located on the coastline between the Firth of Forth and B1348 (Northern Development Area). Site B is located South East of site A, across the B1348 (Southern Development Area). The details of these are outlined on pages 56 and 57.

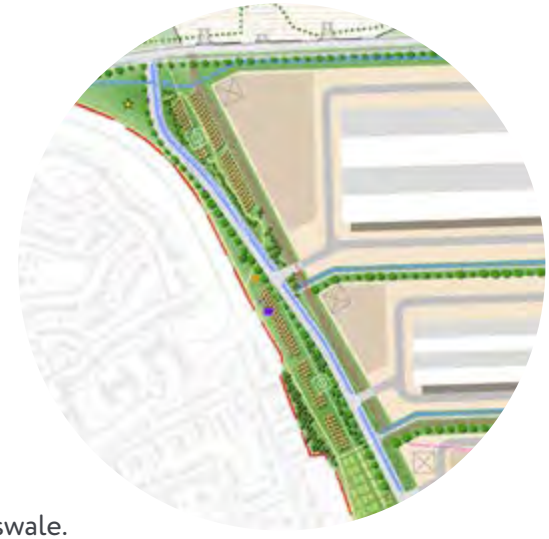
Site A:

Two Junctions designed to provide access to the two parts of this site, southern site and northern site, from the B1348.

The junction spacing of the southern site access was reviewed against the other existing junctions on the unnamed access road off the B1348 Edinburgh Road. The minimum junction spacing required for Non-Residential Access Streets is 40m, from East Lothian Council's Standards for Roads.

At the northern site, two access junctions were required off the B1348 Edinburgh Road. On review of the existing road layout, the existing access junction appears to be in good condition and suitable for use in this project. There may be minor upgrades required such as widening based on the type of vehicles expected to access the site, resurfacing and the addition of tactile paving across the mouth of the junction for pedestrian movements. An additional access junction was positioned at an appropriate spacing from the existing junction as a second access point to the site.

The cost estimate for the two proposed junctions for site A is £248,000. This included 45% optimism bias.



Site B:

Main access road designed to enter site B from the existing (unnamed), private access road which connects to B1348 to the West and B6371 to the East. The proposed main access road runs along the West of site B feeding three access roads, one for each of the three platforms.

Three platforms have been given the levels from South to North 30m, 23m and 17m. The Southern Platform is 30m as this is close to existing elevation in the area, may be a little higher in places, this would require some fill. The rail halt is at an elevation of around 30m so this elevation will be similar to that and eliminate any requirement for cut in that area. The Northern Platform has been set at 17m as this is reasonable with the existing ground levels here, it will require some fill and not too much cut at the high spots that it would undermine the rail halt to the East. The Middle Platform has been set at a height of 23m.

Through an iterative process this level has been found as it is between the two, Northern and Southern platforms, and ties in to the Main access road at levels which the main road can achieve with required standard gradients, vertical and horizontal curvature.

The Main Road runs along the West of the platforms from the highest level, 30m where it can tie into the Northern Platform access and runs downhill to the site Entrance tie in with the public road. The main road run down to meet the platform tie ins and with it's steepest gradient 5%, this is a reasonable gradient for a private industrial road, it is well within the DMRB standards, it a little more forgiving than the standards as it will be used by large heavy vehicles.

The Main Road kicks out to the West to curve around an electrical tower at Ch. 520m. The road cannot fit to the East of the tower, between the tower and the Northern platform. There is not enough space to fit the platform earthworks, the footway and swale. Around Ch. 520 the road levels are similar to the electrical tower to minimise earthworks to not undermine the tower and to keep the infrastructure and earthworks as far from the tower as possible.

The main road is a typical 7.3m wide, two-way road, 3.65m width of each carriageway. There is a 0.5m verge along the West of the road and a swale along the East. The swale is designed to provide a natural drainage system where water can soak through the grass and soil into the ground water and the excess in periods of high rainfall will run downhill alongside the road to outfall into the drainage network at the site Entrance. It starts with a width of 4m which continues to the Northern Platform Access Road at around Ch. 330m, after this access it widens to 6m to accommodate the potential higher volumes as water accumulates downstream. The swale will also act as a buffer separating the vehicles on the carriageway and pedestrians on the footpath, which runs along the East of the swale. The footway is 3m to accommodate pedestrians with space for a low volume of cycles and a 0.5m verge alongside it's Eastern edge. This gives a full cross section width of 15.3m from (start) Ch. 0m to Ch. 330m and a cross section width of 17.3m from Ch. 330m to 638.84m (end).

The cost estimate for the access road and associated works for site B is £3,897,840. This includes 45% optimism bias.

SUDS COSTING

Costs stated here are purely indicative at this stage and would need to be assessed in further detail before any more accurate costs can be provided. These costs relate to the Drainage Strategy set out on Pages 52 and 53.

Assumptions

Swales	
Bed width	0.5m
Ave depth	0.6
Side slopes	1:4

Detention Pond	
Surface area	6,500m2
Depth	1.5 – 2.5m (permanent pool depth)
Side slopes	1:4
Liner	Butyl rubber

Connecting Pipework	
Diameter	600mm
SuDS outfall	Bankton Adit culvert

Earthworks	
Arisings	Retained on site

Costs

Item	**Quantity**	**Unit Rate**	**Cost**
Swales	2,017m	£104/m	£209,768
Detention Pond	6,500m^2	£98/m	£637,000
Pipework	492m	£299/m	£147,108
1800mm Dia Manholes	6 nr	£4,222/nr	£25,332
Headwalls	16 nr	£5,000/nr	£80,000
Sub-total			£1,099,208
Prelims & Contingencies	30%		£329,762
TOTAL			**£1,428,970**
Green Book Optimism Bias	40%		£571,588

OVERALL TOTAL			**£2,000,558**

WATER COSTING

Capacity Assessment

Scottish Water has carried out a Capacity review and we can confirm the following:

- There is currently sufficient capacity in the Castle Moffat Water Treatment Works to service the proposed development; and,
- There is currently sufficient capacity in the Edinburgh PFI Waste Water Treatment works to service the proposed development.

Network Assessment

A Water Impact Assessment will be required to determine if our existing network can adequately service the demands of the proposed development, or if any mitigation/enhancement is necessary.

There are other proposed developments in this area and therefore the strategic study model reference NIA0031 should be utilised to carry out this assessment and scoped to include the other proposed developments.

The cost estimate for a Water Impact Assessment is £8,533.44 (inc vat).

SERVICE CORRIDOR / REDIRECTION COSTING

Costs stated here are purely indicative at this stage and would need to be assessed in further detail before any more accurate costs can be provided. These costs relate to the Utilities Corridor / Diversions set out on Page 58 and 59.

The budget estimate is £275,708 (exclusive of VAT) for diversion of the HV and EHV cables for the proposed development.

This budget estimate does not include for any excavation, backfill, or reinstatement of cable track and joint bays as this will be the responsibility of the Customer. These costs are indicative and are given only as a basis for further discussions and may vary considerably from any further budget estimates or the price in any formal offer.

Please be aware that this budget estimate is only based on a preliminary assessment carried out as a desktop exercise and does not include any detailed design work or site specific considerations.

ELECTRICITY COSTING

Costs stated here are purely indicative at this stage and would need to be assessed in further detail before any more accurate costs can be provided. Option 1 refers to Indicative Layout 1 as set out on page 120, and Indicative Layout 2 as set out on page 122. The figures have been repeated for reference.

Option 1 Circa 80MVA

Unfortunately, there is no current demand available on the existing network to cater for such a demand and therefore major Transmission & Distribution works would be required.

The distribution costs for such a connection could be in the region of £15M.

This would include a new Transmission/Distribution 33kV GSP Board, 33kV Cabling to the site and then a new 33kV metered Multi-panel board on site. This would not include any potential NGESO/Transmission upgrade or reinforcements works to the Transmission nettwork.

Land Use		Platform Area	Indicative Footprints
North			
	Class 4/5 (Business & Light Industry)	c.4.5ha	c.153,000sqft
	Class 6 (Storage & Distribution)	c.3.5ha	c.134,000sqft
South			
	Technology and Net Zero Infrastructure (Ambiguous)	c.13.85ha	c.534,000sqft
	Class 4/5 (Business & Light Industry)	c.5.05ha	c.178,000sqft

Figure 52- Layout 1 Indicative Footprints

Option 2 Circa 12MVA

Due to capacity ,this would be like the above, however based on your application of 21 connections, SPEN would likely require a new Primary Substation, instead of the 33kV Option above, which would need to be connected currently out of a new or upgraded GSP .

The costs based on the12MVA demand & Primary solution would be in the region of circa £10M.

This is based on a standard arrangement with 2 x 20MVA 33/11KV Transformers. The 21 units would then be supplied via a 11kV infrastructure and approximately 5 x 1MVA secondary substations along with 2 x HV Supplies. This would not include any potential NGESO/Transmission upgrade or reinforcements works.

Land Use		Platform Area	Indicative Footprints
North			
	Class 1A (Retail)	c.4.5ha	c.100,000sqft
	Class 4/5 (Business & Light Industry)	c.3.5ha	c.130,000sqft
South			
	Class 4/5 (Business & Light Industry)	c.9.63ha	c.328,000sqft
	Class 6 (Storage & Distribution)	c.9.27ha	c.380,000sqft

Figure 53- Layout 2 Indicative Footprints

6.5 INDICATIVE LAYOUT SUMMARY

KEY FEATURES

The layout opposite shows how the site could be developed with the 'foundation components' in place for successful access / servicing arrangements and following the principles and guidance set out in the later chapters of this document.

The principal elements of the proposed development are:

- A Southern Access Road providing access to the Southern Development Area from the ELC Link Road, within the pylon wayleave to the west of the development area, and integrating drainage features and active travel routes;
- A platformed approach to the southern development area with each platform serviced and drained via utility corridors and a network of swales / ponds discharging to the Forth;
- A Northern Development Area with consideration of adjacent uses, such as the John Muir Promenade and a Community Market / Events space;
- A comprehensive, integrated and improved active travel network connecting every area of the site and integrating existing Core Paths, informal paths and the John Muir Way;
- A sensitive landscape approach consisting a network of spaces consisting of over 50% of the site, each with different characters. Underpinning these, however, is a desire for significant biodiversity / ecological enhancement, retention of existing landscape features where possible and areas of new planting;
- A significantly expanded and enhanced Community Orchard;
- A sensitive response to Scheduled Monuments and features of cultural significance such as the 1722 Waggonway; and,
- A flexible approach which can respond to future needs, market conditions and circumstances.

Figure 54- Indicative Layout

7 PHASING

7.1 PHASING

PHASING IS AN IMPORTANT CONSIDERATION FOR MAINTAINING FLEXIBILITY FOR THE FUTURE DEVELOPMENT OF THE SITE. A HIGH LEVEL PHASING STRATEGY IS SET OUT HERE.

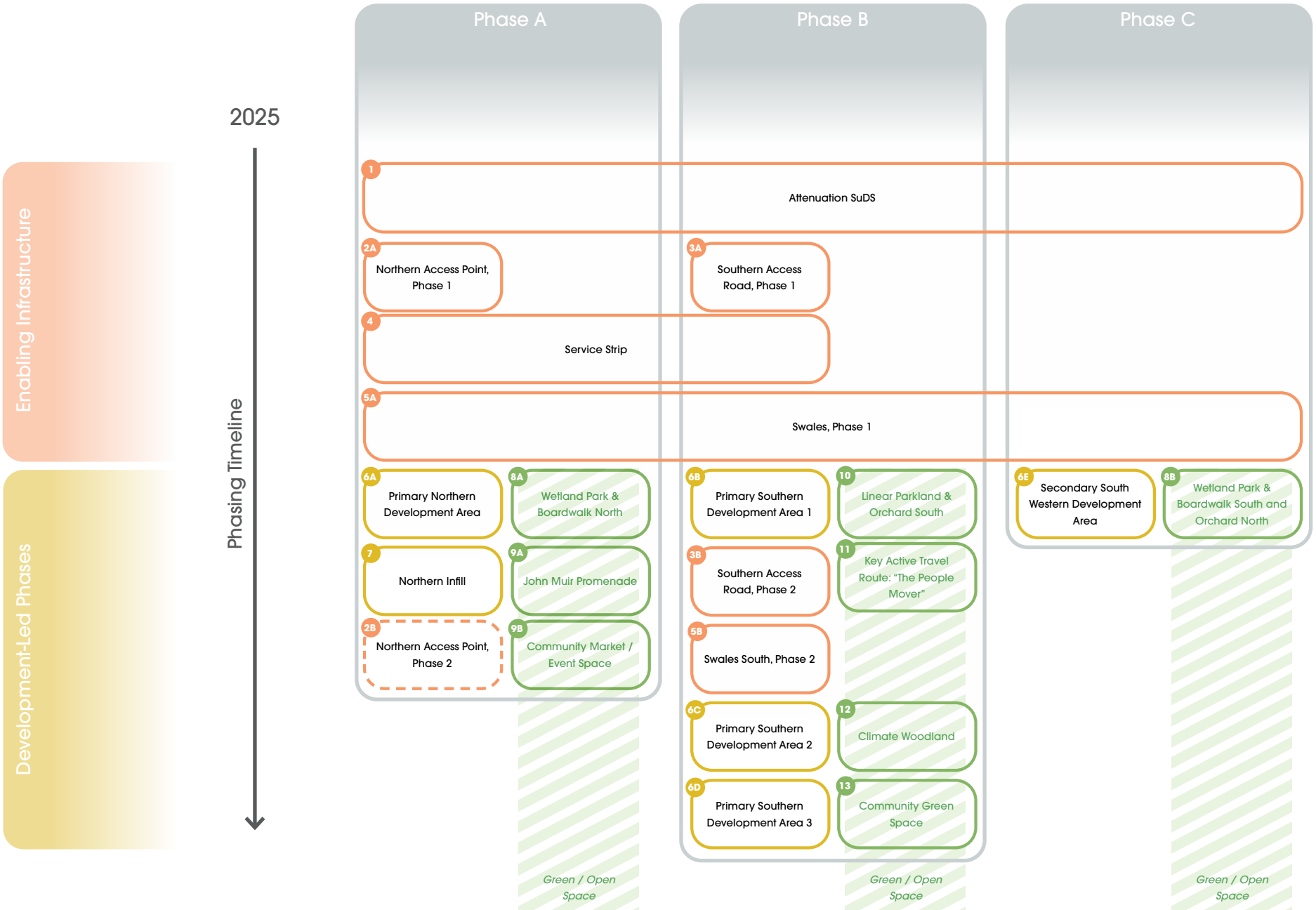
The phasing strategy seeks to establish enabling infrastructure / servicing first, and then allow for a flexible approach to phasing development, led by market conditions.

Phase A, B and C group components of the site into three key areas, the Northern Primary Development Area (A), the Southern Primary Development Area (B) and the Secondary South Western Development Area (C). These grouped phases can be developed concurrently or separately, in any order, given the enabling infrastructure is established first.

Where practicable the active travel network should be established at an early stage, and open spaces will be brought forward alongside the relevant grouped phases, after their development areas have been established. Were phasing to come forward as described consistency of design approach and delivery standards between green and blue infrastructure / open spaces should be considered.

This approach assumes the consented ELC Link Road is in place when phases begin.

Figure 55- Enabling, Development-Led Phases and Landscaping


Enabling Infrastructure
Development-Led Phases
2025
Phasing Timeline
Phase A
Phase B
Phase C
1
Attenuation SuDS
2A
Northern Access Point, Phase 1
3A
Southern Access Road, Phase 1
4
Service Strip
5A
Swales, Phase 1
6A
Primary Northern Development Area
8A
Wetland Park & Boardwalk North
7
Northern Infill
9A
John Muir Promenade
2B
Northern Access Point, Phase 2
9B
Community Market / Event Space
6B
Primary Southern Development Area 1
10
Linear Parkland & Orchard South
3B
Southern Access Road, Phase 2
11
Key Active Travel Route: "The People Mover"
5B
Swales South, Phase 2
6C
Primary Southern Development Area 2
12
Climate Woodland
6D
Primary Southern Development Area 3
13
Community Green Space
6E
Secondary South Western Development Area
8B
Wetland Park & Boardwalk South and Orchard North
Green / Open Space
Green / Open Space
Green / Open Space

8 CONCLUSION

8.1 CONCLUSION

THE COCKENZIE TECHNICAL APPRAISAL PROCESS HAS BEEN UNDERWAY FOR THE PAST 12 MONTHS. THE DESIGN AND TECHNICAL TEAMS HAVE ENGAGED IN A PATIENT PROCESS OF MAPPING OPPORTUNITIES AND CONSTRAINTS, TESTING THESE AGAINST EARLIER IDEAS FOR THE SITE AND THEN DEVELOPING A SERIES OF ALTERNATIVE CONCEPTS WHICH ULTIMATELY HAVE LED TO FLEXIBLE OPTIONS FOR ITS LONG TERM REDEVELOPMENT TO MEET ECONOMIC NEEDS.

Throughout, our client East Lothian Council, has maintained the need for a balanced approach, ensuring that the technical appraisal considers and supports existing or planned development, infrastructure and opportunities.

This has been a pragmatic design process.

It has never been the clients intention to adopt the document as planning guidance. The process has sought to balance achieving a level of certainty on access and servicing arrangements and the formation of effective development parcels, with the need for ongoing flexibility to respond to site specific opportunities.

Five underlying considerations / decisions ultimately shaped the appraisal process:

- The need to balance the obvious attractiveness of securing a large single user / major employer with the risk of delay / holding the site undeveloped in perpetuity;
- The need to respond to the topographical constraints of the southern site by platforming in a way that offered good size development plots which could attract a range of users;
- The need to view the Northern site as something more than an employment site, and in particular its northern and western edges where public ream, active uses and community uses could prevail;
- The need to find land on the site that could accommodate services without compromising the deliverability of development on the platforms / parcels; and,
- The need to recognize the landscape, green spaces, green and blue infrastructure and new planting as the unifying element that bring together the various development sites with their surroundings.

ELC also recognised from the outset the value in seeing phasing and consideration of delivery models, as critical aspects of the response to balancing certainty and flexibility.

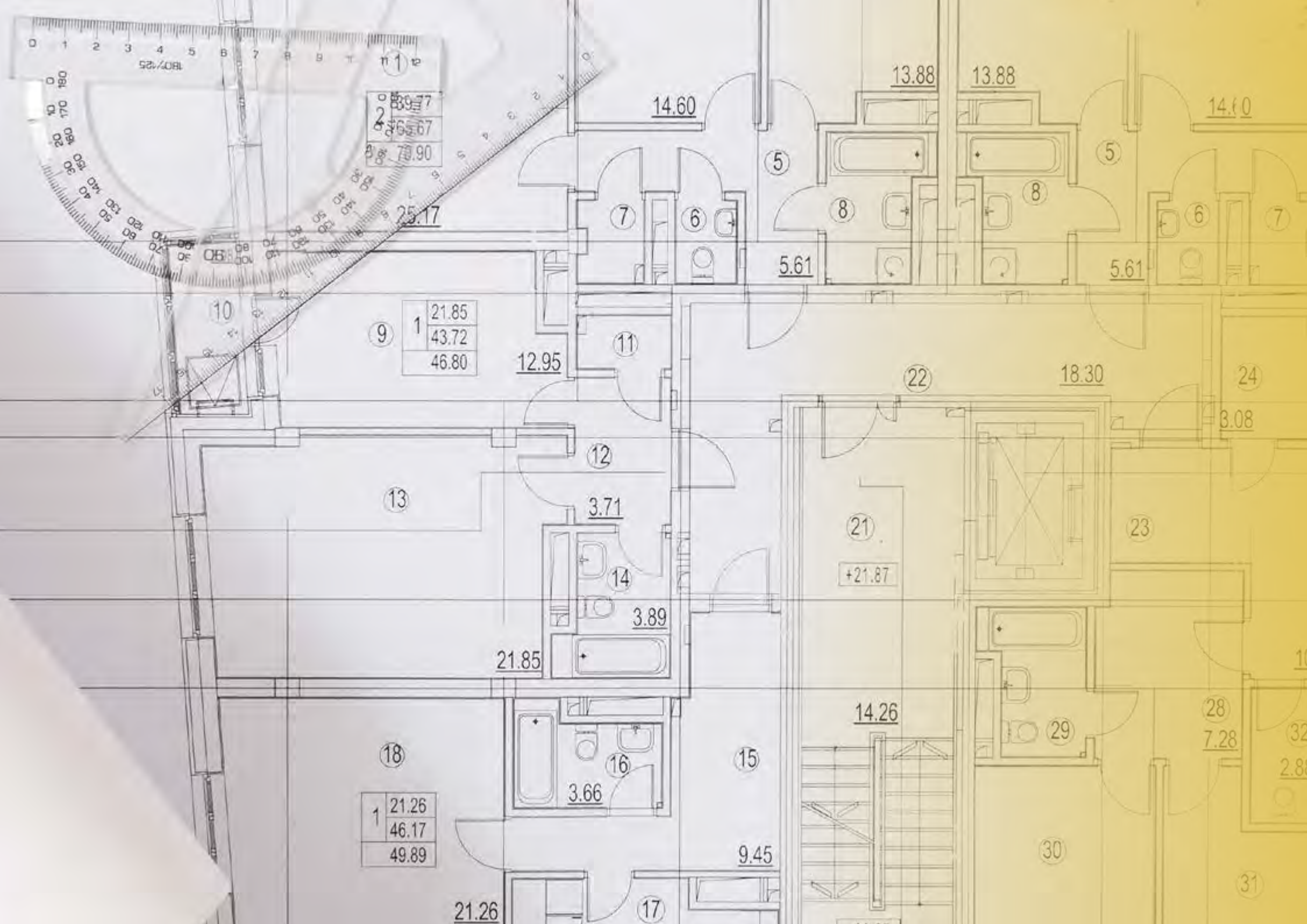
There are several next key steps required to take the project forward.

They include the continued marketing and development of the sites. This process has produced significant results to date and the clarity that the appraisal provides over development parcels and platforms now helps identify the next series of development sites.

This process in turn, needs matched by a programme of investment in land forming and services re-routing / installation in line with the recommendations of the plan. Capital investment is required now for both as there are significant lead in times for this work.

The open space / biodiversity guidance also needs further developed and here an opportunity exists for immediate community engagement in that process. The plan identifies half of the site area for parks, spaces, woodland, ponds and areas dedicated to increasing biodiversity. Clearly there is a huge opportunity for local people to be involved in a detailed design process for same.

Appraisals, such as this one, can lose their relevance very quickly, especially on a site where change is well underway. Flexibility is therefore key on important economic development sites like Cockenzie. This plan is an aide to ELC as it continues with these next steps.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13.88
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18.30
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3.66
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21.26
+21.87
1 21.85 43.72 46.80
1 21.26 46.17 49.89

9 APPENDICE

9.1 ALTERNATIVE ACCESS ROAD

ALTERNATIVE ACCESS ROAD SOLUTIONS WERE TESTED IN A NON TECHNICAL CAPACITY TO DEMONSTRATE THEIR POTENTIAL IMPACT ON DEVELOPMENT USING LAYOUT OPTION 1. THIS EXCERSISE IS ILLUSTRATIVE AND CONSIDERS EXPECTED TOPOGRAPHY AND BEST PRACTICE ROAD DESIGN CRITERIA ONLY.

CENTRAL ACCESS ROAD

A central access road would divide the platforms and significantly reduce the available floor area. **The reduction in available sqft-age in comparisson to the preferred option amounts to c.156,000sqft.**

EASTERN ACCESS ROAD

An eastern access road would likely require a roundabout to facilitate suitable access for HGV's, and reduce the available floor area and impact on existing woodland. **The reduction in available sqft-age in comparisson to the preferred option amounts to c.96,000sqft.** This option responds to the following guidance:

- A clear stretch of road between junctions amounting to c.18-27m (2-3x the c.9m road radii). Where the above concerns clearing a roundabout, this extends to 30-50m.
- A maximum 1:20 gradient on the access road.
- A roundabout suitable for HGV's with a middle and outer radii of 15m and 22.5m respectively.

Land Use (South Only)	Indicative Footprints	Difference From Preferred Option
Preferred Access Option		
Technology and Net Zero Infrastructure (Ambiguous)	c.534,000sqft	NA
Class 4/5 (Business & Light Industry)	c.178,000sqft	NA
Central Access Option		
Technology and Net Zero Infrastructure (Ambiguous)	c.378,000sqft	- c.156,000sqft
Class 4/5 (Business & Light Industry)	c.178,000sqft	0
Eastern Access Option		
Technology and Net Zero Infrastructure (Ambiguous)	c.450,000sqft	- c.84,000sqft
Class 4/5 (Business & Light Industry)	c.166,000sqft	- c.12,000sqft

Figure 56- Preferred Access Solution

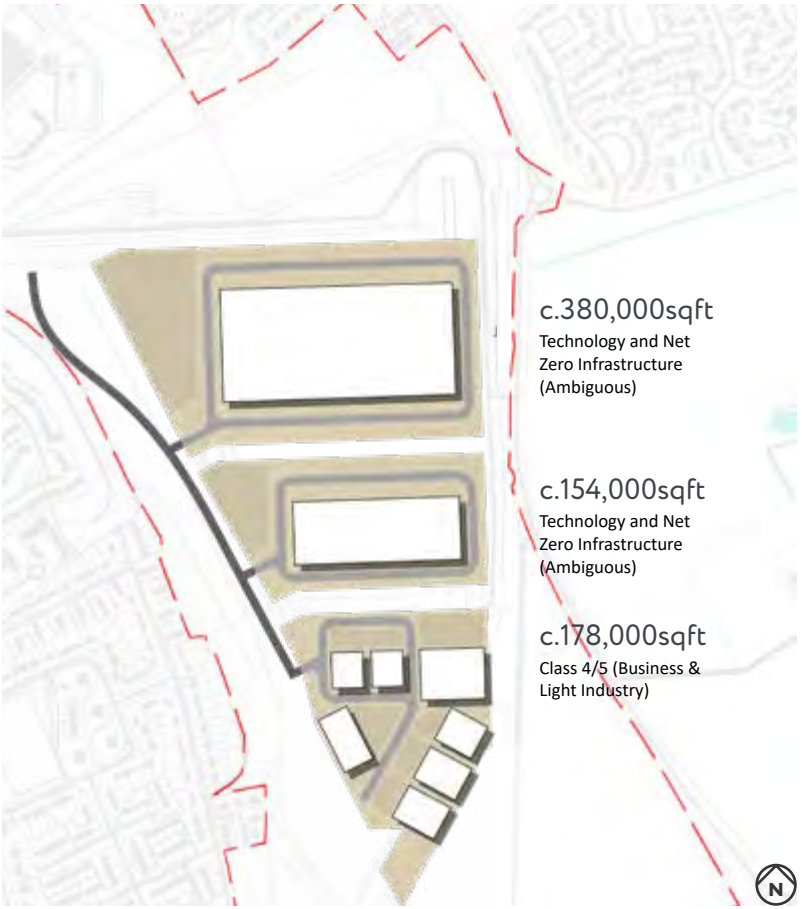


Figure 57- Central Access Solution

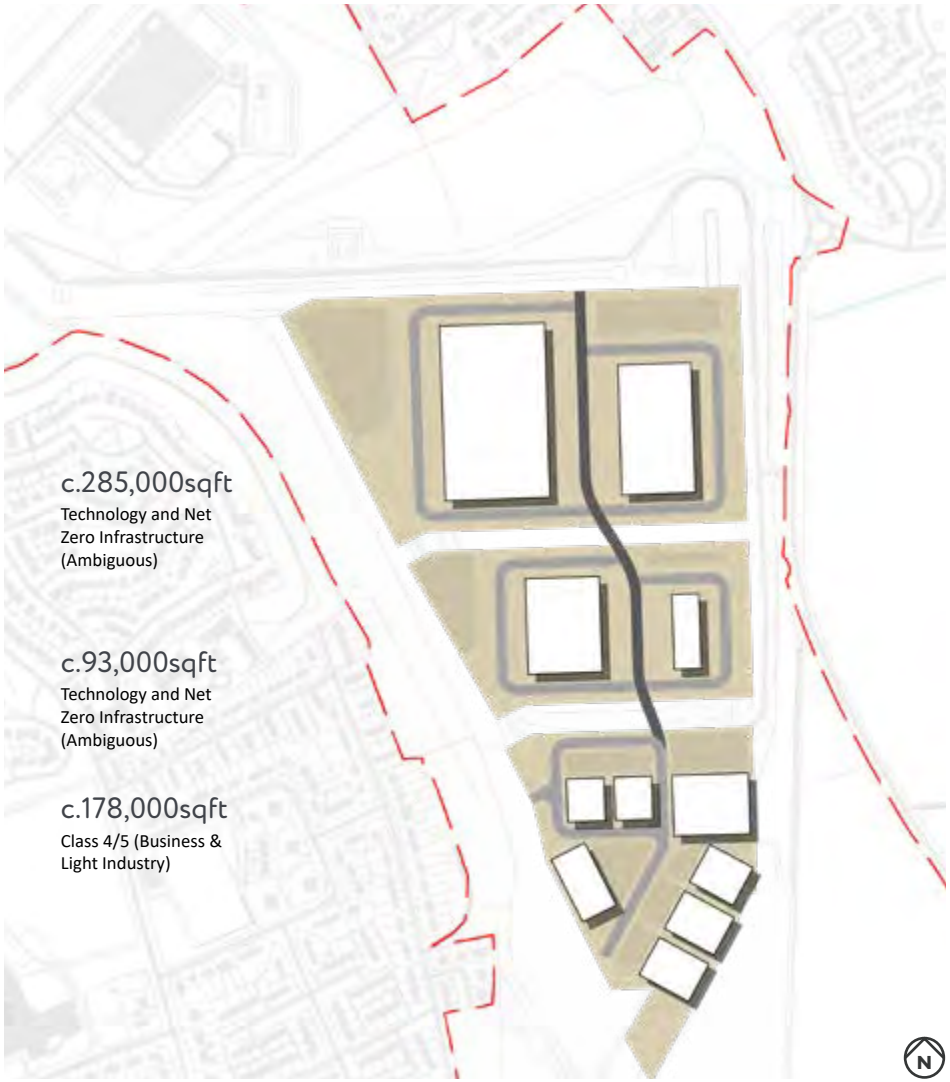
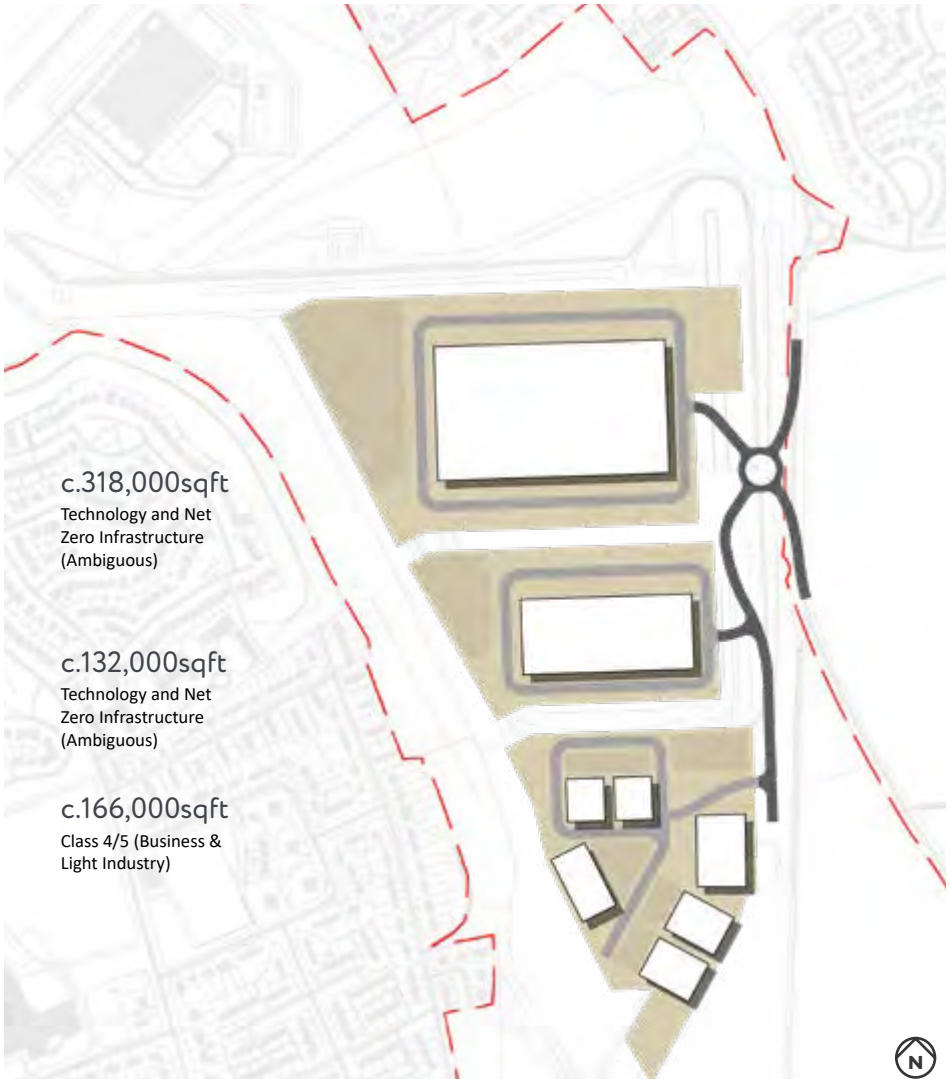


Figure 58- Eastern Access Solution



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