

CHAPTER 3: SITE DESCRIPTION

Introduction

- 3.1 This chapter describes the site context, which includes the location of the site, a brief site history and a description of the immediate site and the surrounding area. It also summarises the potential environmental constraints to the development of the site.
- 3.2 The context of the entire site is described but, where appropriate, the three component sites are discussed in turn under each heading to clearly present the baseline conditions across the development area.

Site Location and Overview

- 3.3 The site is located on the eastern edge of Holy Island, which itself is located in western Anglesey. The site comprises three distinct but interrelated parcels of land referred to as Penrhos, Cae Glas and Kingsland. The overall site area is approximately 207.5ha.

Penrhos

- 3.4 Penrhos covers approximately 80 hectares of land located immediately to the north east of the AAM former aluminium smelting plant and the A5. It comprises the parcel of land between the A5 and the coastline.
- 3.5 The Penrhos Coastal Park, which includes part of the Anglesey Coastal Path open to the public on a permissive access basis by AAM, occupies the majority of the site. The Coastal Park includes woodland and coastal areas featuring a network of footpaths and a public car park.
- 3.6 Buildings associated with the Penrhos Estate are located in the western section of the site. These include a series of listed buildings that are described in paragraph 3.58, below. Agricultural land at the far north of the site is currently used for grazing.
- 3.7 The Quillet, a clearing within the woodland historically used for grazing and holding of livestock in transit, is located to the east of the Penrhos Estate buildings. It has in recent years been planted with young trees and wildflowers.
- 3.8 The Bathing House is located adjoining Private Beach. There is currently a substantial building on the site, which was once used as a cafe and ice cream parlour. The original Bathing House was a small timber and stone structure. The current building is poor quality, and the white rendered elevations significantly increase its prominence visually from the adjoining coastline, and from the viewpoint at Arthur's Seat.
- 3.9 The Boat House is located adjoining Penrhos beach. There is currently a rubble stone plinth of a building on the site, with remnants of a slipway. The arched stone opening remains although the original timber structure that covered the stone plinth is no longer present.
- 3.10 A football pitch is located in the centre of the Penrhos site and a cricket pitch is situated towards the north.

Cae Glas

- 3.11 Cae Glas is located to the south of the AAM plant and A55 and to the north east of Trearddur Bay. The site comprises approximately 109 hectares of disused agricultural land and adjoins the Inland Sea coastline to the east. In the north-east corner of the site is a former landfill that is now vegetated at the surface and is securely fenced and gated.

Kingsland

- 3.12 Kingsland comprises approximately 18.5 hectares of agricultural land located to the south of Holyhead, west of Parc Cybi and north of Holyhead Golf Club. Holyhead Hotspur FC and Holyhead Leisure Centre immediately adjoin the site to the north.

Site History

Penrhos

- 3.13 The original house at Penrhos was said to have been built during the reign of Henry VIII, on land granted to John ap Owen (also known as John Derwas). Most of the land was owned by the Penrhos family, who stabilised their surname to Owen in the early 16th century. A new house was built c.1720-30. In 1763 Margaret Owen, the heiress to Hugh Owen, married John Stanley and the Penrhos Estate passed to the Stanleys of Alderley.
- 3.14 Sir John Thomas Stanley (1766-1850) probably had the 'Tudor' house demolished, and he made many alterations in the early 19th century, 'gothicising' the house and adding a new south wing, as well as constructing many of the out-buildings. William Owen Stanley (1802-1884) built a new drawing room, large dining room and added various embellishments c. 1862. No major alterations were made to the house after 1884. W. O. Stanley was a noted antiquarian, who excavated and preserved a number of archaeological sites within the area. The 1st edition Ordnance Survey Map of 1888 shows an elaborate garden to the east and south of the mansion, a racecourse and a well-developed home farm. Their architectural significance is reflected in the remains that survive, of which seven are listed buildings, including the three towers.
- 3.15 During World-War II the house was evacuated and occupied by troops. The house and grounds were neglected and fell into disrepair. Following the war much of the estate was sold off to the tenants. The house itself was bought by Sir Patrick Abercrombie, but deteriorated further, and was eventually demolished. The home farm continued in operation until 1969 when the whole site and significant other lands were sold for the development of the AAM plant. Public access was granted to some areas of the site from 1972 onwards.
- 3.16 On the 1888 map, major features on the site include Penrhos Estate buildings, farm and glass houses with gardens, woodland and parkland. A large open area is present in the centre of the area and open agricultural land is also noted to the north. Minor roads and tracks are present, with occasional dwellings and farms. The Battery and the Boat House are located on the north coast. Two large ponds are present. One, an ornamental pond with a pump house is located towards the centre of the site towards the eastern coast, and is associated with a number of drainage channels that extend to the south. The second is located toward the extreme southern corner of the site.

- 3.17 By 1901, the Bathing House is shown on the north coast and additional buildings are shown within the Penrhos Estate. By 1975 Penrhos Farm and cottages are marked on the Penrhos Estate and a number of scattered residential properties are noted including near Bryn-Glas and on Penrhos Estate and a second pond has appeared in the southern corner of the site.
- 3.18 By the 1990s, the area is defined as the Penrhos Coastal Park and a cricket pitch has appeared in the north of the site.

Cae Glas

- 3.19 The Cae Glas site consists of a number of farms surrounded by regularly shaped fields. The majority of these farmsteads are now abandoned and ruinous. The field layout was generally established by 1769, but numerous fields have been amalgamated at various periods since then, and some boundaries have been lost or altered. The largest farm was Tre Gof, historically a place of some significance which in the 16th century was inhabited by John Gwyn, High Sheriff of Anglesey in 1543 and 1555. The farm became part of the Penrhos estate at the end of the 17th century when John Owen inherited it from his grandmother. It is now abandoned but high garden walls and ruinous buildings survive, as well as a stone cattle shed.
- 3.20 The small farm at Tyddyn Bach and a 16th century tide mill at Mill Island have all-but disappeared. The northern edge of the Cae Glas site underwent a considerable change with the construction of the new A55 roadway alongside the Chester to Holyhead Railway. The stone construction of the Stanley Embankment in 1820 and later modern dual carriageway became a key local landscape feature.
- 3.21 Through reference to historical plans, in 1889 the sites generally comprised a mixture of rough grassland, exposed rocky outcrops, marshy areas and woodland, interspersed with enclosed areas for grazing, occasional farms and field drains. Slight changes have occurred on the sites, including improvements to the grassland, increased fencing and drainage and the disappearance of some farms. However, the uses have remained constant to the present day.
- 3.22 An area in the northeast of the Cae Glas Site, adjacent to the A55 and the rail line, was used as a waste disposal site (Cae Glas Landfill) by land raising. Available information provided by AAM indicates that the site was licensed for the disposal of inert, industrial waste from AAM, such as alumina and carbon dust, floor sweepings, builder's rubble, disused/waste electric cables, paper/cardboard waste, plastic/polythene, refractory bricks, tyres, wooden pallets. In addition, it is understood to have been used for the disposal of inert, commercial, industrial and special waste as well as domestic refuse by the local authority. There is a suggestion that whole cars were introduced at an early stage somewhere near the base of the landfill.
- 3.23 The facility operated from 1977 to 1992, when the licence was surrendered. There is no impermeable capping over the landfill and it is not known, but considered unlikely, that a formal engineered lining was placed beneath the waste. Following the cessation of waste disposal, the site was used for aggregate storage for the construction of the A55 Trunk Road, and was subsequently sculpted to mimic natural landforms and then planted with indigenous tree species.

Kingsland

- 3.24 Historically the Kingsland site belonged to two farms, Bodwredd (the property of the Penrhos estate) lying to the west of the road between Holyhead and Treaddur, and Cae'r Ty Hen, the property of the Carpenter family of Carreglwyd, lying to the east of the road. The name of the site dates from a visit to the area by King George IV in 1821.
- 3.25 The remains of a later farmhouse at Bodwredd remain towards the west of the site (just beyond the existing footpath).
- 3.26 A number of small stone walls cross the site and line the footpath access. These reflect historic field boundaries although none are the locally distinctive 'cloddiau' type stone clad earthen banks. The central larger field was historically divided east/west prior to the construction of the golf course to the south.
- 3.27 Houses lined the road from Capel Ebenezer (a Calvinistic Methodist chapel north of the site) into town. This ribbon development was extended during the second part of the 20th century when houses were constructed along the west side of Kingsland road (to the North of the site). The golf course was constructed in the early 20th century and the adjoining leisure centre was constructed in the late 1970's.

Site Description

- 3.28 The sites comprise a large area with varying characters. The sites are described in detail here in sections that focus on specific types of characteristic such as landscape, heritage features and ecology.

Landscape

- 3.29 The whole site is located within the Anglesey Area of Outstanding Natural Beauty (AONB). Whilst development within an AONB is not prohibited, this designation seeks to preserve and enhance the natural beauty of the environment.
- 3.30 The Countryside Council for Wales (CCW) have defined 48 draft Landscape Character Areas (LCA) over the whole of Wales in order to provide broad spatial frames for planning, green infrastructure and landscape management initiatives. The entirety of the site is located within LCA 1: The Anglesey Coastline. This LCA, in the vicinity of the sites, is characterised by the following:
- The area's strongest identity comes from the varying relationship between the sea and the land;
 - Green pastoral landscapes, which tend to be away from the coastline;
 - Significant elements of historic landscape, including prehistoric and funerary sites;
 - The chimney at the AAM works is a widely visible landmark;
 - Generally farmed and relatively tranquil landscape, with the AAM plant and the Aluminium Powder Company (Alpoco) forming contrasting large-scale development;
 - Settlements including Trearddur Bay and their associated holiday developments, and the busy town and port of Holyhead, which are centres of activity in this otherwise peaceful and in parts, remote landscape;
 - The best features of the landscape can be enjoyed in abundance along the Anglesey Coastal Path.

- 3.31 In 1999, IOACC and CCW commissioned a landscape assessment which led to the Anglesey Landscape Strategy 1999. The assessment process resulted in the creation of 15 LCA's across Anglesey. Following a review of the identified LCAs, the total number was increased to 18, as set out in the Anglesey Landscape Strategy update document, produced in 2011. As defined in this document, the planning application site falls within the *Holy Island* (all of Kingsland and western parts of Cae Glas and Penrhos) and *Inland Sea* (eastern parts of Cae Glas and Penrhos) LCA's.
- 3.32 The Holy Island LCA falls into two distinct sub-categories, separated by the development corridor of Holyhead-Trearddur along the B4545 road. To the north of the B4545 (including the Penrhos site), the landscape is relatively low lying but has a number of craggy outcrops. The area has small fields typically with stone boundaries, gorse hedges and windblown fir. To the south of the road (including the Cae Glas and Kingsland sites), again there are rough, craggy areas. The Penrhos Coastal Park is identified as a key feature within the character area. A number of important habitats are identified – including dry heaths, coastal and intertidal, often within a larger matrix of improved grassland. The area is quite distinctive – mainly a rural, wild and exposed coastal character.
- 3.33 The Inland Sea LCA separates Holy Island from Anglesey refers to a wide area of the Holy Island Strait, and includes key features such the Stanley Embankment to the north, and the Four Mile Bridge in the south. This area is influenced by tidal currents which makes it popular for water sports and boat users.

Seascape

- 3.34 In 2009, a Seascape Character Assessment for Wales was published by CCW and White Consultants. The Assessment consists of a national overview, and a regional scale breakdown of Wales into 50 seascape units.
- 3.35 The coastline at Penrhos and Cae Glas is covered by Seascape Character Areas 8: Carmel Head to Holyhead Mountain South Stack and 10: Holy Island Strait.
- 3.36 Seascape Character Area 8: Carmel Head to Holyhead Mountain South Stack lies to the north of Penrhos and has the following characteristics:
- Land/coast uses – key identified uses include ferry facilities, aluminium smelting, residential uses, limited leisure and recreation, including Penrhos Coastal Park and the Coastal Path;
 - Sea uses - Holyhead commercial ferry and catamaran sailings, leisure boats and yachts. This is the main crossing point to Ireland, via Dublin Port/Dun Laoghaire.
 - How the seascape unit is experienced – from the Anglesey Coastal path, railway and road crossing the Alaw estuary Holyhead settlement and docks. Scenic views from ferries entering/leaving port, of Holyhead Mountain and North Stack.
 - Degree of intervisibility of land and sea - Inter-visibility is mainly limited to the coastal strip and from a few high points such as Holyhead Mountain.
 - Key views to sea and along the coast include views from Anglesey Coastal Path and Penrhos Coastal Path.
 - Key views to land include views from Irish ferries and from leisure boats.
 - Tranquillity/remoteness/wildness – moderately tranquil, but significantly reduced around Holyhead harbour.
 - Sense of scale – medium, slightly enclosed by landform.
 - Openness/enclosure – moderately open.

- Diversity – highly diverse, including; urban and rural, smooth and rocky, flat and hilly, broad and narrow inter-tidal
 - Exposure – Exposed on north or east facing coasts.
- 3.37 Seascape Character Area 10: Holy Island Straits lies to the immediate east of the Cae Glas and Penrhos sites. Key characteristics identified within the seascape character assessment include:
- Highly indented, small-scale, enclosed coastal strait, with low-lying land adjacent and rocky edge.
 - Unique in Wales although the character is reminiscent of sandy estuaries and, therefore, not uncommon elsewhere.
 - Predominantly rural edge with some settlement and one crossing, although enclosed by Stanley Embankment and A55 Expressway to the north.
 - Overall tranquillity is affected by RAF Valley to south east, the AAM works and the A55 to the north.
 - Lateral flow with tidal currents and predominantly sand with some mud at low tide.
 - Enclosed intimate seascape, not widely visible Four Mile Bridge and Stanley Embankment act as part barriers, creating a very shallow lake with reduced tidal range between them.
 - Key cultural associations: The Stanley Embankment is an important historical feature.

Topography

- 3.38 Penrhos ranges in level from around 19m AOD in the vicinity of the cricket ground to around 4m AOD at the coast.
- 3.39 The eastern section of the Cae Glas site slopes to the east and Kingsland Road and beyond to the Parc Cybi site. The land is highest in the west where the ground level is 22m AOD. It then slopes south towards the Inland Sea, and east towards A55. The site as a whole is undulating with steep slopes in parts.
- 3.40 In the south west corner of the Kingsland site the ground level is around 27m AOD. The land is used for agricultural grazing and slopes down generally northwards from here and at the northern boundary near the wetland the level is around 13m AOD. The average slope is in the order of 1 in 20.

Ecology

- 3.41 The Beddmanarch-Cymyran Site of Special Scientific Interest (SSSI) is located to the immediate east of the Penrhos and Cae Glas sites. This site includes the Inland Sea and is primarily designated for its ornithological and botanical interest.
- 3.42 There are several other sites designated for their ecological value in and around Holy Island, which are all over 1km from any of the component development sites. These are described in detail in Chapter 10: Ecology and Nature Conservation but include the Holy Island Coast Special Area of Conservation (SAC) / Special Protection Area (SPA) / SSSI and the Tre Wilmot SSSI.
- 3.43 The application sites themselves comprise a varied range of habitats, which are described in the following sub-sections.

Penrhos

- 3.44 Penrhos comprises a mixture of habitats including semi-natural, broadleaved; plantation and coniferous woodland; dense and scattered scrub; neutral, calcareous, marshy and semi-natural grassland; swamp; standing water; hedgerows; amenity grassland; and ditches.
- 3.45 The habitats present at Penrhos have been identified as being suitable for a range of species including bats, badgers, water vole, reptiles and birds. Accordingly, a range of protected species surveys were undertaken by TEP, the findings of which are presented in Chapter 10: Ecology and Nature Conservation.

Cae Glas

- 3.46 Cae Glas comprises semi-natural, broadleaved; plantation and coniferous woodland; scattered scrub; parkland; acid, neutral, marshy and semi-improved grassland; bracken; ruderal; heath; mesotrophic, eutrophic and brackish standing water; saltmarsh; coastal heath and grassland; inland cliff; hedgerows; amenity grassland; and ditches.
- 3.47 The range of habitats present at Cae Glas were identified as being suitable for amphibians, water vole, bats, birds, badgers, otters and red squirrel. Protected species surveys were undertaken to establish their presence or absence, the findings of which are presented in Chapter 10: Ecology and Nature Conservation.

Kingsland

- 3.48 Kingsland comprises continuous and scattered scrub; acid, marshy and semi-improved grassland; ruderal; swamp; eutrophic running and standing water; hedgerows; and ditches.
- 3.49 Habitats at Kingsland have the potential to support amphibians and water vole, and protected species surveys have been undertaken accordingly.

Arboriculture

- 3.50 A woodland and tree assessment has been undertaken by TEP. This evaluated and categorised the quality of woodland at the Penrhos and Cae Glas sites. The tree survey report is presented at Appendix 10.14.

Penrhos

- 3.51 Penrhos has extensive plantation woodland in the south and has agricultural fields to the north. 30 individual trees, 29 groups and 34 woodland compartments were recorded. Tree cover is largely middle-aged, with older plantation estimated to be between 40 and 60 years of age; average tree height is 13 metres with the occasional stand reaching 20 metres. Small pockets of historic woodland are likely to exceed 100 years of age.
- 3.52 The tree stock is a mixture of uniform plantation blocks, more structurally diverse compartments and mature specimens; the latter often associated with historic built features. The woodlands are divided into compartments by a network of pathways and tracks. The Penrhos area also contains residential properties, ponds and open grassland areas.
- 3.53 The woodlands of highest value are generally found in the centre of the Penrhos area and have a mixed and structurally diverse character, including some mature

specimens. They add landscape character to the setting of the buildings at Penrhos.

- 3.54 A Tree Preservation Order (TPO), established in 1971, is in effect for several areas of woodland at Penrhos. A plan showing the areas covered by the TPO is included in the Tree Survey report at Appendix 10.14.

Cae Glas

- 3.55 Cae Glas is characterised by plantation woodland and semi-improved grassland. The eastern edge of the site is shaped by short, irregular rock faces and shingle beaches that form a part of the Holyhead Bay coastline. 12 individual trees, 29 groups and 38 woodland compartments were recorded. Tree cover is broadly middle-aged, estimated to be between 25 and 40 years of age; average tree height is 12 metres with the occasional stand exceeding 20 metres.
- 3.56 The plantations are largely dominated by monoculture stands of sycamore, Sitka spruce or Corsican pine. Where plantations are of mixed species they generally include only one or two other species. The majority of these plantations are categorised as low value due to their relatively young age and poor structural diversity. Some compartments are more structurally advanced and some are prominent within the landscape

Kingsland

- 3.57 Kingsland is characterised by large areas of semi-improved grassland bounded by dilapidated hawthorn hedgerows and stone walls. No significant arboreal constraint exists on or adjacent to the Kingsland site. 20 trees and 9 small groups of trees were recorded. Trees are typically deformed due to prevailing winds and rarely exceed 6 metres in height. The majority of trees and groups recorded are peripheral to the development area and are of low value.

Archaeology and Heritage

- 3.58 There are six Grade II Listed Buildings within the Penrhos site that are mainly associated with the Penrhos Estate and Home Farm. These are as follows:
- Penrhos Bailiff's Tower and Home Farm
 - The Candle Tower and Remains of Penrhos House
 - Penrhos Water Tower
 - Penrhos Betting Stand
 - The Tower
 - The Battery
- 3.59 The listed buildings are currently in a varied state of decay. The ruins of Penrhos House adjoining the Candle Tower, and elements of the dairy and farm house are in poor condition. The Tower, the Bailiff's Tower and the simple farm buildings are currently used as a residence, by the Cricket Club and provide an office for Kehoe Countryside Management, who are the company which manages the Coastal Park on behalf of AAM. The Stanley Gate Tollhouse is Grade II Listed but is located adjacent to the site boundary at the southern extent of Penrhos.
- 3.60 Penrhos Estate does not appear in the Register of Historic Parks and Gardens of Historic Interest in Wales (ICOMOS & Cadw, 1998). However, the remains should be considered important both as individual features and as a historic landscape.

- 3.61 The Trefignath Burial Chamber is a Scheduled Monument located within the Cae Glas site. Three other Scheduled Monuments, the Ty Mawr Standing Stone, Ynys Leurad Hut Circles and the Treaddur Hut Group, lie close to but outside the site. The remains of the Tre' Gof farmstead are located in the centre of the site, but are limited to a collection of walls and ruins.
- 3.62 There are twelve Listed Buildings within the vicinity of the Kingsland study area but none on the site itself. The windmill (variously called George's mill, Melin yr Ogof or Kingsland Mill) is listed Grade II* as an exceptionally important example of a 19th century windmill because of the retention of an almost complete set of machinery.
- 3.63 A detailed evaluation of the existing archaeological and heritage features on and around the site is presented in Chapter 11: Archaeology and Heritage and its appendices.

Geology

- 3.64 The bedrock on the application sites is principally the New Harbour Group. These are late Precambrian rocks (Neoproterozoic) comprising fissile green mica schists, gritty green mica schists with psammites, phyllites and pelitic lavas. In addition, the South Stack Group is present on the northern half of the Kingsland Site, comprising a schistose sequence of alternating meta-sandstones, siltstones (pelites) and quartzites. These rocks lie stratigraphically below the New Harbour Group.
- 3.65 A number of other minor rock types occur variously across the sites, as follows:
- One and two basic igneous intrusions (gabbro or diorite) are noted on the Cae Glas and Kingsland sites respectively;
 - An outcrop of the Clwyd Limestone Group of rocks is noted toward the southern end of the Penrhos Site. This is a much younger rock unit of Carboniferous limestone that is presumed to rest unconformably on the basement rocks.
- 3.66 Faults are present in the area and on each site, including;
- A northwest to southeast trending on the Cae Glas Site;
 - A northwest to southeast trending fault through the centre of the Kingsland Site; and,
 - A northeast to southwest trending fault across the Penrhos Site.
- 3.67 The Geological Drift Map indicates that with regard to superficial geological deposits, on all three sites the principal materials comprise Devensian glacial till (Diamicton). These are described as containing clay, sands, silts and gravels.

Soils and Agricultural Land

- 3.68 The Soils Reports produced by Cranfield University (included as Appendices 12.4, 12.5 and 12.6) identify the soils at the site to be of the East Keswick 1 type. These are deep, well drained fine loamy and similar soils with slowly permeable sub-soils and slight seasonal waterlogging. The capacity of these soils is likely to be clays with low permeability and low storage capacity.
- 3.69 The Agricultural Land Classification (ALC) for the development areas is understood to be Grade 4. This is considered poor quality agricultural land with severe limitations which significantly restrict the range of crops and/or level of yields. It

is mainly suited to grass with occasional arable crops (e.g. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation.

Hydrogeology

- 3.70 The sites are not located within or near any formally designated groundwater source protection zones for large scale public water supply abstraction.
- 3.71 Under the aquifer classification scheme, the bedrock strata beneath the site are classified as Secondary Aquifers (Class B). Class B Secondary Aquifers are described by the Environment Agency as '*predominantly lower permeability layers which may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering.*'

Hydrology and Drainage

Penrhos

- 3.72 The upper area lacks significant drainage features by way of ditches, watercourse and ponds. There is a run of derelict drains that appear to service farm buildings and the cricket club house. The other properties are understood to drain to soakaway. Drainage is understood to be adequate in the main with no significant problems being identified by site managers.
- 3.73 The fields on the northern part of the site appear well drained and there are no ditches or other such water features evident. There is a small pond that has been created on the northern boundary which is presumably used for livestock watering. There appears to be no formal outfall from the pond, though water was noted to be seeping onto the foreshore at the horizon between the rockhead and overlying soils.
- 3.74 Part of the site drains towards the A5, where a drain has been severed or blocked. Consequently following heavy or prolonged rainfall water backs up and ponds beside the A5, causing nuisance before eventually soaking away.
- 3.75 The upper woodland area comprises channels and ditches cut around former field boundaries, some of which appear to be maintained and others that are not. These intercept surface water and direct flow towards ponds in the coastal section of woodland.
- 3.76 The numerous ditches suggest poor draining characteristics in the soils and this is confirmed by site managers who report a high ground water level with soils being a fine silt overlying clays.
- 3.77 The lower coastal zone and woodland is relatively flat. Grips are cut into the ground in many places at close (around 5m) centres. Some of these appear relatively recent due to the lack of vegetation, others are overgrown. Presumably the purpose of the grips is to provide a flow path away from the numerous tracks and footpaths in the woodland and into the ponds.
- 3.78 There are three ponds of significance in this area. One beside the car park appears to have little inflow or outflow and is therefore somewhat stagnant. The adjacent pond across the access road to the west is several times larger in area. This is in better condition but has no formal outfall. The catchment area for these ponds is quite small and the water level varies typically by around 0.5m.

- 3.79 Towards the northern part of the lower coastal zone is another pond system to which much of the woodland drains and ditches are directed. This pond system is more engineered than the others. It drains into the sea via an outfall of circa 225mm diameter. On the outfall ditch is a concrete and stone pitching weir which it is assumed was intended to control the main pond water level. Before the outfall under the coastal access is a derelict feature which may have provided a secondary control and allowed flooding into an adjacent second pond.
- 3.80 The outfall pipe is concrete is around 300mm diameter and emerges onto the rock and pebble beach. It is cracked and broken and only a small part of the pipe is visible above the pebbles.
- 3.81 The main pond extends west and terminates adjacent to the Pump House. Next to the pump house is a capped off chamber and hand pump and trough. It is assumed that water was directed towards this pond system from much of the woodland and former fields. The captured water was possibly then pumped from the pond to the disused water tower, from where it was used around the farm.
- 3.82 Based on the topographic information it seems likely the ponds were created when the coastal access was constructed. The associated land raising / bank construction would have affected the drainage trapping water behind.

Cae Glas

- 3.83 A large proportion of the central / east part of the site drains via a ditch around 1.5m deep towards a headwall constructed as part of the A55 works. The OS plans suggest this ditch continues beyond the A55 then passes under the railway and into AAM factory site. The outfall under the A55 has been measured as 900mm diameter. Network rail has confirmed the culvert continues under the railway of twin 450mm square culverts and into AAM land from where it drains to Penrhos Beach.
- 3.84 There are several ponds along the line of the ditch, and at the upstream end the land it drains is flat and marshy. Towards the downstream end the land also flattens out and is likely to be poorly drained.
- 3.85 The northern part of the site again drains towards the A55, and again at the upper and lower ends of the ditch the land is flat and marshy. Vegetation prevented an inspection of the outfall under the A55, though Network rail advises a 1000mm dia culvert passes under the A55, which connects downstream to an 1800mm wide x 1700mm high culvert under the railway (their bridge 228). From here the culvert runs through AAML to Penrhos.
- 3.86 The western site drains southwards through several marshy areas and into the Inland Sea.
- 3.87 The south eastern part of the site is woodland and is lacking any established surface drainage features. Water is expected to infiltrate and with direct runoff to the edge of the Inland Sea.
- 3.88 Away from the quite defined marshy area the land appears to be well drained. The agricultural land is likely to contain land drains connected to the ditches, though none were evident on site.

Kingsland

- 3.89 As on the fields adjacent to the Leisure Centre there was little in the way of drainage features. However there was a strip of greener grass crossing the western field suggesting a line of sub surface water flow. Where this line approached the sports area reeds were evident suggesting the water was emerging to the surface. A partially blocked ditch runs between this point along the field boundary towards the wetland at the north of the site. Land drains would be expected in the fields to carry water more effectively from the area.
- 3.90 The natural receptor for surface water is wetland to the north of the sports facilities beyond the site boundary. OS plans indicate a flow from the wetland to the north under Mill Road and this has been verified on site.
- 3.91 The field abutting the B4545 drains to a low spot adjacent to the highway boundary, where there is a small wet area / pond. Although there are gullies in the highway here and a chamber suggesting a through pipe, there was no evidence of the route of the water from the wet area to the lower land east of the highway.

Movement and Access*Penrhos*

- 3.92 The Penrhos site has three existing vehicular access points. The first is a priority junction with the A5 which provides access to an area of car parking associated with the Penrhos Coastal Park. There is a left turn lane into the access but there are no dedicated facilities for right turners.
- 3.93 The second access, also off the A5, is a narrow private road that provides access to Penrhos farm. It takes the form of a three arm priority junction.
- 3.94 The final access again off the A5, takes the form of a priority junction with Penrhos Beach Road. There is a short acceleration and deceleration lane on the A5 but no dedicated facilities to accommodate right turners. The access serves a beach, parts of the Penrhos estate and a number of residential properties.
- 3.95 As part of the Penrhos Coastal Park, a Coastal Path runs around the coastal edge of the site. This is located on private land owned and managed by AAM but for which permissive access is granted to the public.
- 3.96 National Cycle Route 8 runs through the site on a route parallel with the A5. A cycle route has recently been installed along the length of the A5 adjacent to the Penrhos site, providing a cycle link with Holyhead.
- 3.97 The nearest bus stops to the Penrhos site are located at the Tesco foodstore on Penrhos Retail Park, to the west of the site. These stops are served by routes 21A, 22A, 24A, 25, 61 and X4.

Cae Glas

- 3.98 The Cae Glas site currently has two vehicular access routes: via the Parc Cybi development in the west and via Lon Towyn Capel to the south. A third, informal, access over private land is available via a bridge over the railway line to the north east of the site.
- 3.99 There are no public footpaths or cycle routes on the site.

3.100 The nearest bus stops to the Cae Glas site are located on the B4545 Lon St Ffraid to the south-east of the site. These stops are served by routes 4, 4a, X4 and 23.

Kingsland

3.101 There is currently no formal vehicular access into the Kingsland site although there is a gated farm access.

3.102 A public footpath crosses the site in an approximately north-south direction, which separates the agricultural area in the east with the unmanaged rocky area in the west.

3.103 The nearest bus stops to the site are located on the B4545 to the north of the site and on the B4545 on the outskirts of Trearddur Bay.

Utilities

Penrhos

3.104 From inspection of the Welsh Water sewer records there is no evidence of the buildings on the site being connected to public sewerage. Indeed there is no sewerage in the vicinity of the site. The closest public sewer is north of the AAM main site entrance. Here there is a gravity sewer flowing towards Holyhead and a rising main carrying flow from Holyhead to the Penrhos Waste Water Treatment Works (WWTW).

3.105 The site managers indicate the buildings drain to septic tanks and then soakaways set within the building garden / property boundaries. The exception to this is the public toilets owned by AAM beside the Coastal Park car park. These are understood to drain to a cess tank. The septic tank is located next to the public toilets.

3.106 It is understood the foul drainage performs adequately, with a normal amount of maintenance being required.

Cae Glas

3.107 There is no public sewerage within any of the area proposed for development, though there are sewers on the periphery that drain to the south and west towards Trearddur Bay. Individual properties within the site are understood to have their own septic tanks and soakaways.

Kingsland

3.108 There is no public foul drainage on the site. A Welsh Water 450mm diameter rising main carrying treated effluent from the Penrhos WWTW is laid in the wetland to the north of the football grounds.

3.109 The closest public sewer is on Kingsland Road, some 100m north of the Leisure Centre roundabout junction. Here a gravity combined sewer is shown to flow northwards towards Kingsland. Some 600 south of the site there is a public sewer in Lon St Ffraid, flowing southwards towards Trearddur Bay.

3.110 Within Parc Cybi, around 700m east of the site, is a short section of gravity sewer that connects into the sewage rising main joining Trearddur Bay to the WWTW.

Landfilling

Penrhos

- 3.111 On the Penrhos site, there are two areas where minor historic infilling has been identified. This is a small sandpit located on the northwest coast and a small rocky outcrop/quarry structure at the southern end of the site.
- 3.112 The Penrhos site also includes a pet cemetery. Although these are classed as a landfill under the Landfill Directive, the EA recognises that pet cemeteries bear little resemblance to traditional landfill sites.

Cae Glas

- 3.113 In the north-eastern portion of the Cae Glas site is an area that has been used historically as a waste disposal site by land raising. The facility operated between 1977 and 1992, when the licence was surrendered. Following its use as a storage area during the construction of the A55 Trunk Road, the landfill was sculpted to mimic natural landforms and planted with indigenous trees. Prior to the commencement of landfilling activities, the land was occupied by a natural valley and a small pond.
- 3.114 Information provided by AAM indicates that the site was licensed for the disposal of inert, industrial waste by AAM such as alumina and carbon dust, sweepings, bricks/rubble, paper/cardboard, tyres and wooden pallets. It is also understood to have been used for the disposal of inert, commercial, industrial and special waste as well as domestic refuse by the local authority.
- 3.115 There is no impermeable capping over the landfill. Whether an engineered lining was placed beneath the waste is unknown.
- 3.116 Access to the site is currently prevented by secure fencing and gates.

Mining and Mineral Extraction

- 3.117 A historic small quarry is present at Tre-Gof at Cae Glas, which was for the extraction of the local bedrock but has been in-filled. No evidence of mining has been identified at Penrhos or Kingsland.

Summary

- 3.118 This chapter has presented the site context, which includes the location of the site, a brief site history and a description of the existing site and the surrounding area. Based on the information presented in this chapter, the main environmental constraints to the development of the site have been identified as follows:
- Location within the AONB;
 - Proximity to the SSSI;
 - The risk of flooding in some parts of the site;
 - Presence of sensitive habitats, species and woodland;
 - Features of heritage value – Listed Buildings and Scheduled Monuments;
 - Public footpaths and National Cycle Routes;
 - The presence of the former landfill at Cae Glas;
 - The presence of a below ground utilities; and
 - Noise from existing industrial uses and road traffic.