10 Archaeology and cultural heritage

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10.1 Introduction

This chapter is an assessment undertaken by Steve Little Research on the potential impact on the cultural heritage and archaeological remains of Hayle Harbour of the proposed development of the area. This takes the form of a desk-based assessment and site surveys of the development site and the immediate vicinity. This has been augmented with research of the relevant archives and using a number of previous studies of the area. This work has been used to determine the baseline condition and to assess the impact on the harbour. (The area of the study is hereinafter referred to the 'proposed development')

Hayle is an important site both in association with Cornwall's mining heritage but also as an outstanding centre for engineering and was a crucial part of the industrial revolution. Hayle played an important part in the development of the use of high pressure steam, which was vital to the improvement of steam engines of the early nineteenth century, linked specifically with the creation of the Cornish boiler. High pressure steam was central to creation of the steam traction engine which is linked to the area through the work of Richard Trevithick, the most famous of many famous Cornish engineers. One of the examples of the engineering feats of the town was the building of the largest steam pump in the world which is a national monument in Holland to this day.

The use of the estuary as a harbour has an ancient history but the building of the modern historic harbour started in the mid eighteenth century. The two rival engineering companies, the Cornish Copper Company and Harvey's Foundry Company, dominated the construction of the harbour as we know it today. The rivalry and domination of these major concerns determines the shape of the harbour indeed the town. The harbour is almost entirely built on reclaimed land and apart from an ancient right of way that ran across the sand all signs of the earlier history of the area lie on the periphery of the historic harbour.

The international status of Hayle is confirmed by its inclusion in the Cornwall and West Devon Mining Landscape World Heritage Site inscribed by UNESCO in July 2005. This view of the importance of the town is reinforced by the Cornwall and Scilly Urban Study of Hayle in October 2005.

10.2 Legislation and planning policy guidance

Cultural heritage and archaeological sites, including historic buildings, possessing a statutory designation are protected under a legal framework, depending on their category, and are commonly termed 'Designated Sites'. There are a number of statutory designations used for sites of architectural or historic significance in the UK, which are made depending upon the importance of the site in a local, regional, national or international context. These are detailed below for those relevant to sites in England:

World Heritage Sites: these are international designations under the UNESCO Convention for the Protection of the World Cultural and Natural Heritage. A site will be nominated in a list submitted by each country, which is party to the Convention. Although there is no statutory designation in its own right for a World Heritage Site, it will be most likely a combination of those below with statutory protection. The body responsible for World Heritage Sites in the UK is the Department for Culture, Media and Sport.

Scheduled Monuments (SM): the Secretary of State can schedule any building, structure or other work below or above ground which appears to be of national importance due to its historic, architectural, traditional, artistic or archaeological interest, under the Ancient Monuments and Archaeological Areas Act 1979. Any private sector development that may affect it requires consent from the Secretary of State, undertaken through the body responsible, English Heritage (EH). The schedule differs from Listed Buildings but Scheduled Monuments are equivalent to Grade I and II* Listed Buildings.

Areas of Archaeological Importance (AAIs): the historic town centres of Canterbury, Chester, Exeter, Hereford and York, for instance, are designated as Areas of Archaeological Importance under Part II of the Ancient Monuments and Archaeological Areas Act 1979. The responsible body is the Local Planning Authority.

Listed Buildings: under section I of the Planning (Listed Buildings and Conservation Areas) Act 1990 the Secretary of State for Culture, Media and Sport is required to compile lists of buildings of special architectural or historic interest on advice from EH. Listed Buildings are classified in Grades according to their importance, and are afforded protection as a means of planning control. Therefore, such buildings cannot be demolished, altered or extended in a way that would affect their architectural or historic character unless listed buildings consent has been obtained from the local planning authority. Similarly, unlisted buildings in conservation areas are also protected from demolition without consent. The local planning authority would consult EH prior to granting permission for listed buildings consent or conservation area consent.

Building Preservation Notices: should a non-listed building be in an area of special architectural or historic interest and in danger of demolition or alteration in a way which would affect its character, the local planning authority can serve a Building Preservation Notice. This can be effective immediately and remain for six months with the effect being as if the building had been listed. This allows the Secretary of State the time required to list the building or post notification that he/she intends to do so.

Parks and Gardens of Special Historic Interest: EH compiles a non-statutory Register of Parks and Gardens of Special Historic Interest to highlight the existence of such areas to highway and planning authorities. The grading system used for listed buildings applies to parks and gardens.

Conservation Areas: the local planning authority may designate an area of land or buildings with special architectural or historic interest as a conservation area. This is designed to enhance or preserve the character or appearance of the area under section 72 (I) of the Planning (Listed Buildings and Conservation Areas) Act

1990. Although a local designation, a conservation area may be of national importance and significant developments may be referred to EH.

General Advice: The guidance on the application of this legislation is found in Planning Policy Guidance Note 'Planning and the Historic Environment 15, 1995 (PPG 15) which lays a duty on an applicant for Listed Building and Conservation Area Consent to justify any alterations proposed. Also Planning Policy Guidance Note 16, Archaeology and Planning 1995 (PPG 16) states that care must be taken to ensure that archaeological remains are not needlessly or thoughtlessly destroyed.

The World Heritage Site Status adds further responsibility, the Cornwall and West Devon Mining World Heritage Site Management Plan of which states that there should be respect for the character of the town.

Paragraph 7c of the Management Plan states: there should be a presumption in favour of retaining and re-using historic sites which are important components of the site.

Paragraph 8a states: the conservation of the site should be undertaken to the highest standards to ensure authenticity and integrity.

10.3 Methodology and assessment criteria

10.3.1 Methodology

The assessment criteria are based on the Conservation Management Plan prepared by Kathryn Sather Associates with Steve Little Research. This work was itself based on past work including Hayle Historical Assessment Report for English Heritage by Nick Cahill and the Cornwall Archaeological Unit of 2000 and the Hayle Town Survey 1995. This knowledge base has been augmented with further research and site surveys which have also been used in the assessment process.

Technical Annex 10A, 'Hayle harbour: Buildings, Structures and Archaeological Remains' is the record, to date, of all the known sites in the proposed development area and the reference code given to these sites in that record are used throughout this document. This supersedes the Gazetteer of the Hayle Harbour: Conservation Management Plan 2005.

10.3.2 Assessment methodology

The impact of the proposed development on the receptors comes in two phases, construction and operation.

The construction phase is the preparation of the area, the application of essential repairs which have a direct impact on the majority of receptors and the construction of new built environment. There would be a reduction in the number of receptors as some would have been removed during this constructional phase.

The operational phase begins at the point that a structure or building has been constructed, including the building of flood defences. Operational impacts are mainly indirect impacts that affect the setting of a receptor.

All the receptors, their value/sensitivity, type and baseline condition are laid out Table 10 – 9. The significance of an impact on a receptor is a combination of the magnitude of the change predicted and the value or sensitivity of the receptor affected. An assessment of this has been made for construction impacts and is laid out in Table 10 – 10. The impacts on the remaining receptors in the operational phase are also a combination of magnitude of the change and the sensitivity of the receptor, and the impact significance of this is laid out in Table 10 – 11.

10.3.3 Assessment criteria

Receptors are assessed in terms of their value and their sensitivity to change; this is laid out in Table 10 – 1. Each receptor starts from a baseline condition and these are banded and the criteria for determining the band in which a receptor is place is laid out in Table 10 – 2. Magnitude of change has been defined in bands of Large, Medium, Small and Negligible. Impact significance has been banded as Major, Moderate, Minor and Negligible. The criteria for assessment of construction impact are shown in Table 10 – 3. The impacts on a receptor can be beneficial, adding value, adverse, taking value away or neutral. This is laid out in Table 10 – 4.

The criteria for assessing magnitude of change in the operational phase are laid out in Table 10 – 6 and the significance of impacts is laid out in Table 10 – 7.

Mitigation is devised for any adverse impacts of minor significance or higher. The significance of the impacts, taking into account the effect of any mitigation proposed, is reassessed using the same method as outlined above. The resulting significance is referred to as the residual impact.

Receptor sensitivity/value	**Examples of receptor**
International/ National	World Heritage Site, Sites of International importance Scheduled Monuments (SMs), Grade I and II* Listed Buildings, Sites of National importance
Regional/County	Conservation Areas Designated Sites), Grade II Listed Buildings, Sites of Regional/County importance Sites and Monuments Record/Historic Environment Record
Local/District	Sites with a local or district interest Sites with a district value or interest for education or cultural appreciation

Receptor sensitivity/value	Examples of receptor
Low local	Sites with a local or parish interest
Negligible	Sites or features with no significant value or interest.

Table 10– 1: Criteria used to determine the sensitivity/value of the receptors

Condition	Examples
Very Good	Sites that require no work to ensure survival
Good	Sites that require 1 to 25% of remedial work to bring them up to the very good condition as defined above.
Fair	Sites that require 26 to 50% of remedial work to survival
Poor	Sites that require 51 to 75% of remedial work to ensure their survival
Very Poor	Sites that require more than 75% of remedial work

Table 10– 2: Baseline condition

Magnitude of change	Examples
Large	Changes to buildings or structures that alter their fundamental character. e.g.: Sites that are to be demolished. Hidden archaeology that would be destroyed as a result of resurfacing, building foundations or installing new flood prevention measures.
Medium	Changes to a building or structure that would have a noticeable change to its character
Small	Changes to a building or structure's character that would not be easily noticed.
Negligible	No changes to a building or structure's character

Table 10– 3: Criteria used to determine magnitude of change as a result of construction impact

Nature of Impact
Beneficial
Neutral
Adverse

Table 10– 4: Nature of Impact

Sensitivity/ Value	Magnitude of change			
	Large	**Medium**	**Small**	**Negligible**
International/ National	Major	Moderate	Moderate	Negligible
National	Major	Moderate	Moderate	Negligible
Regional/ County	Major	Moderate	Moderate/ Minor	Negligible
Local/District	Moderate	Moderate	Minor	Negligible
Local Low	Moderate	Minor	Minor/ Negligible	Negligible
Negligible	Minor	Negligible	Negligible	Negligible

Table 10– 5: Construction Impact Significance

Magnitude of change	Description
Large	There is a significant change in the setting of the receptor from all or three aspects
Large/medium	There is a significant change in the setting of the receptor from one or two aspects
Medium	There is a moderate change in the setting of the receptor from one aspect
Medium/small	There is a minor change in the setting of the receptor from all or three aspects
Small	There is a minor change in the setting of the receptor from one or two aspects
Negligible	The setting of the receptor is not affected

Table 10– 6: Criteria used to determine magnitude of change as a result of operational impact

Sensitivity/ Value	Magnitude of change			
	Large	**Medium**	**Small**	**Negligible**
International / National	Major	Moderate	Moderate	Negligible
National	Major	Moderate	Moderate	Negligible
Regional/ County	Major	Moderate	Moderate/ Minor	Negligible
Local/ District	Moderate	Moderate	Minor	Negligible
Local Low	Moderate	Minor	Minor/ Negligible	Negligible
Negligible	Minor	Negligible	Negligible	Negligible

Table 10– 7: Operation Impact Significance

10.4 Baseline conditions

10.4.1 The generality

On the whole the condition of much of the historic harbour is fair to poor (see Table 10 - 2 for definition) – some essential repairs have recently taken place but the major part of the story is one of past neglect. In the recent past some of the standing structures had fallen into disrepair and have been demolished. Occasionally demolition has taken place because the site was needed to establish new processes. As a matter of policy the most dominating building on the harbour, the power station, was demolished when it went out of commission in the 1960s. Unexpectedly two of its ancillary buildings have survived. One of the former attempts to rejuvenate the area included the demolition of the buildings on the South Quay apart from a small 1950s office and also included the partial filling-in of the area between South Quay and the eastern side of Carnsew Pool.

This filling-in also occurred within the Carnsew Pool itself partially burying the old harbour wall. Much of the present surface of the harbour covers a great deal of the archaeological remains, the surface itself being in a poor to fair condition. Buildings included in the proposed development vary in condition but only one of those that are proposed for demolition can be described as good – this is the 1930s shed (EQ 11), but is of low value.

The area of the proposed development comprising the historic harbour is within the Hayle Conservation Area and part of the Cornwall and West Devon World Heritage Site. The area of the proposed development of the Towans is outside the Conservation Area. There are a number of listed buildings and structures (receptors) within the proposed development; these are listed below (see Table 10.-9.) but there is no Scheduled Ancient Monument, although there is one immediately adjacent to the south-west, the Hayle Cunaide Stone. There are no Areas of Archaeological Importance or Parks and Gardens of Special Historic Interest involved.

The historic harbour is almost entirely built on reclaimed land from the mid eighteenth century and the sites of its associated buildings and structures are almost certainly known (see Hayle Harbour: Buildings. Structures and Archaeological Remains, 2007). Because of the dating and nature of the harbour and knowledge gained from archives and fieldwork it is extremely unlikely that anything would be found that is pre-mid eighteenth century.

10.4.2 Identification of receptors

The receptors which have been identified as potentially impacted by the proposed development fall into six classes:

1. World Heritage Site
    2. Conservation Area
        3. Listed Structures
            a. The listed harbour walls
            b. Harbour features that are deemed to be within the curtilage of the listed walls
            c. Listed buildings
        4. Unlisted structures of historical significance
            a. The un-listed harbour walls of the North Quay
        5. Hidden archaeology
        6. Other structures and buildings

The value of the six receptor classes is summarised in Table 10-8.

10.4.3 World Heritage Site

The inscription of the Cornwall and West Devon Mining Area as a World Heritage Site by UNESCO in July 2005 is a recognition of the international importance of the area, crucially in the role it played in the industrialization of Britain. Cornwall was also important on the international stage as one of the pioneers of the transfer of the industrial revolution to the world and played a key role in the growth of a global industrial society.

The metals of the Cornish and West Devon mining industry went into the production of alloys such as bronze and brass which were crucial to the developing industry of Britain. Bronze was used in bearings – every line-shaft driving the machinery of the Lancashire cotton industry was dependent on bronze. Brass went into the making of steam engines and was the basis of the Birmingham brass industry, which included the making of cartridges, machine parts and brass export goods. Cornish tin plate was the raw product of the canning industry, Cornish copper was used to sheath the bottom of ships and its brass was used to make vats and pipes for brewing, refining sugar and for the making of dyes for the textile industry.

Cornwall's contribution to the industrial revolution was not just as an area providing raw materials. Two early atmospheric steam engines were developed by Cornishmen, Newcomen and Savary, to answer the problems of draining the ever increasing deep mines of the County. The expense of coal for these machines, which had to be imported, meant that Cornish miners turned to the more economical engines of the Birmingham Company of Boulton and Watt and as early customers helped indirectly in the development of the Watt steam engine. The high premium they had to pay for the Boulton and Watt machines meant that local engineers turned to experimenting with different types of engine and through the work of men such as Hornblower, Trevithick and Woolf high pressure steam was developed. This in turn led directly to the first locomotive and the invention of the Cornish boiler, the forerunner of the Lancashire boiler.

Hayle Harbour is one of ten sites within the World Heritage Site. It was intimately linked to the activities that make the site significant as a port for the export of ore and the import of coal but also as a centre of engineering, especially that associated with the mining industry. Pumps to drain the mines were built in Hayle which led to the production of steam pumps to drain the 'plodders' of Holland – the largest steam pump ever built in the world still stands as a national monument in the Netherlands. Other engineering products included ore crushers, ladders, standing pipes for the pumps and smaller objects such as picks and shovels. These were used not only in Cornwall but were exported to every part of the world where hard rock mining was being carried out. Harveys of Hayle also exported the Cornish boiler which led to the building of specially designed ships to carry the boilers. Both Woolf and Trevithick worked at the Harvey's foundry at Hayle. Trevithick, the most famous of the engineers associated with the World Heritage Site, married Harvey's sister, Jane, and whilst he was in South America, at times assumed dead, Jane became the proprietor of Hayle's first hotel, a rather more intimate link between the World Heritage Site and the town of Hayle.

The baseline condition of the World Heritage site is very varied but the area of the historic harbour of Hayle is poor and this detracts from the site generally.

Overall the WHS is considered to be of **International value**. However, the individual value of structures/buildings within the WHS designation may be lower depending on their conditions and contribution to the character and setting of the WHS. Table 10 – 9 below details the value of individual structures within the site.

10.4.4 Conservation area

The Hayle Conservation Area encompasses much of the town of Hayle, including both Copperhouse and Foundry areas. Although a distinctive whole based on the activities and heritage of the two great historic companies of the town, the Cornish Copper Company and Harveys, the Conservation Area is made up of a number of areas which have their own distinctive character. The harbour area, isolated by the railway viaduct, the high ground behind Penpol Terrace and the cliff face at the back of North Quay has its own characteristics different from other parts of the Conservation Area. The inclusion of the harbour in the Conservation Area is because of its crucial contribution to the history and development of the town and the important part it plays in the character of the area.

The character of this part of the Hayle Conservation Area is defined by its history as an industrial harbour. The major activities of the harbour were the movement of engineering products and raw materials but also included general goods and a passenger service. The raw materials were coal being imported and ore being exported – these lay in heaps on the quays or were held in open ore hutches. To add to this commercial activity for much of the nineteenth century shipbuilding took place on South Quay and was replaced by ship breaking in the twentieth century. The area was serviced by the Hayle Wharf Railway which meant that much of the quay areas were covered with rail track.

On the North Quay were established a number of industrial concerns. At one time a calcining works, a process for extracting water from ore before it was shipped, operated here; the chimney of this works still stands. This site also became an arsenic works and a glass works at various times. A coal fired power station was built on the quay, the only one in West Cornwall dominating it until it was demolished in 1973. In 1939 the Octel works were erected to extract and refine bromide from sea-water, the only site in the country to manufacture this important anti-knock agent for fighter aircraft. The site was chosen partly because of the power station, the quality of the seawater extracted from Carnsew Pool and because Hayle was regarded as more secure than other sites considered. Two of the ancillary buildings of these works survived the work's demolition, as does part of the sulphur store associated with the works after its conversion to manufacture of sulphuric acid.

The present characteristic of this part of the Conservation Area is of a neglected post industrial site. The baseline condition is generally poor and a number of the important industrial buildings have been demolished. However the essential defining elements have survived notably the harbour walls and a number of associated

features such as warping posts used to manoeuvre ships within the harbour limits. Other elements, such as the listed Harbour Master's Office and adjacent railway bridges, the non listed Octel Buildings and the chimney at the calcining works enable the area to be read as fundamentally an industrial site. These features are an important pointer to the present and future character of the proposed development site.

Overall the Conservation Area is considered to be of **Regional/County value**. However, the individual value of structures/buildings within the Conservation Area may be lower depending on their condition and contribution to the character and setting of the Conservation Area. Table 10 – 9 below details the value of individual structures within the site.

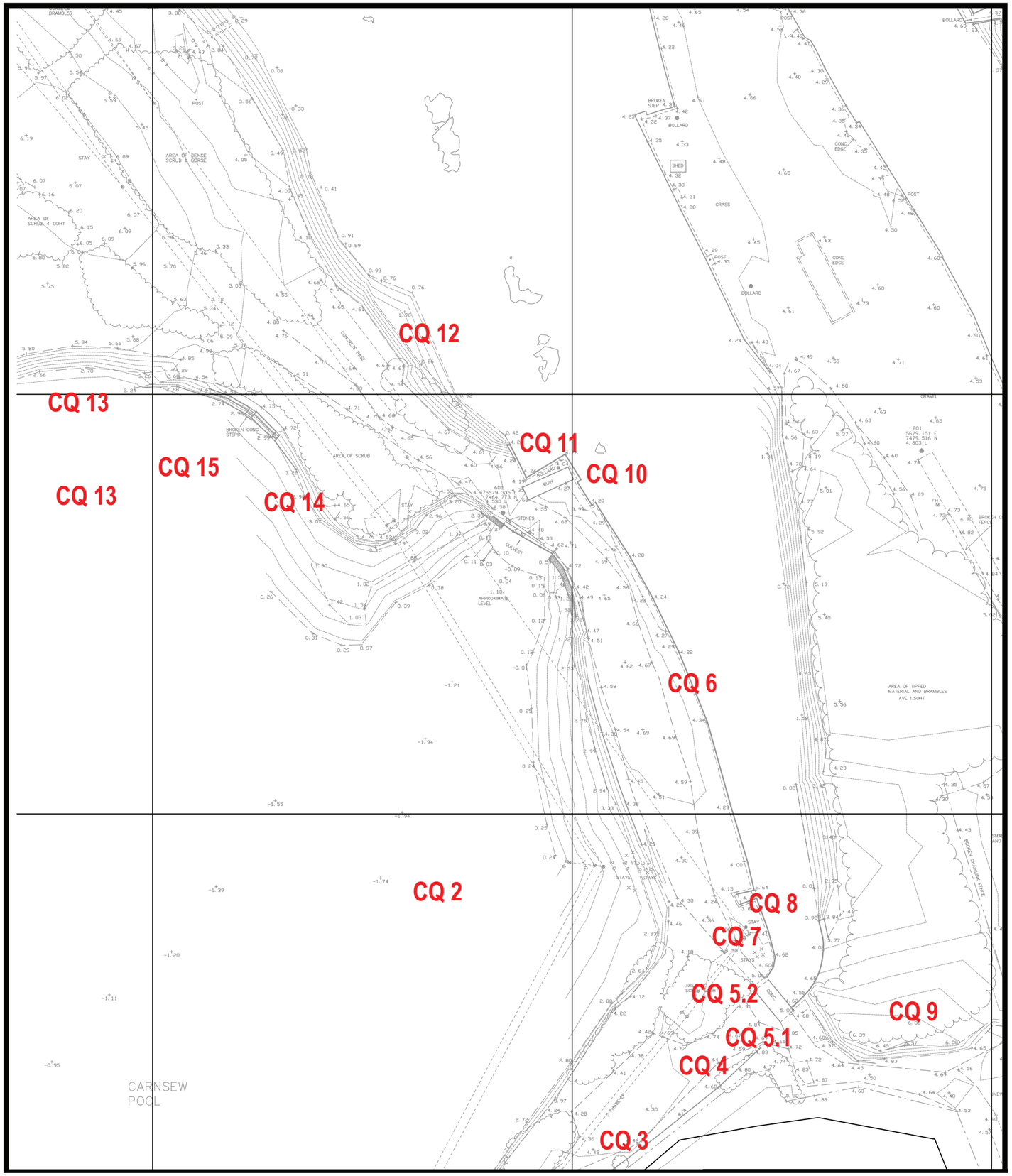
10.4.5 Listed buildings

The listed structures in the proposed development area vary in condition. The majority of the listing covers the harbour walls and there is great variation here from some areas that can be classed as good to areas of complete collapse. The condition of the walls, listed below in Table 10 - 9, is a general description of the state of the wall in question even where there has been localised collapse. There are two listed buildings within the proposed development area, the Harbour Masters Office which is in very good condition and the stable block (NQ 14), also on the North Quay which is described as poor. However this ignores the fact that the killas (a local sand stone) and scoria (blocks made from copper slag) walls are the reason for the listing and are in a fair condition. An added concrete block and mono-pitched roof structure is in a ruinous state.

The other listed structures are the former swing railway bridge, its mechanism and the adjacent tidal barrier which are in fair to good condition.

Receptor classification	Value
WHS	International
Conservation Area	Regional/County
Listed structures	Up to International (full details given in Table 10-9)
Unlisted structures of historical significance	Up to National/International (full details given in Table 10-9)
Hidden archaeology	Up to Local/District (full details given in Table 10-9)
Other structures	Up to National (full details given in Table 10-9)

Table 10– 8 Summary of receptor values



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Steve Little Research
Dwg No. HH3

Hayle Harbour

Carsnew Quay

Figure 10.1

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print at A3
date November 2007

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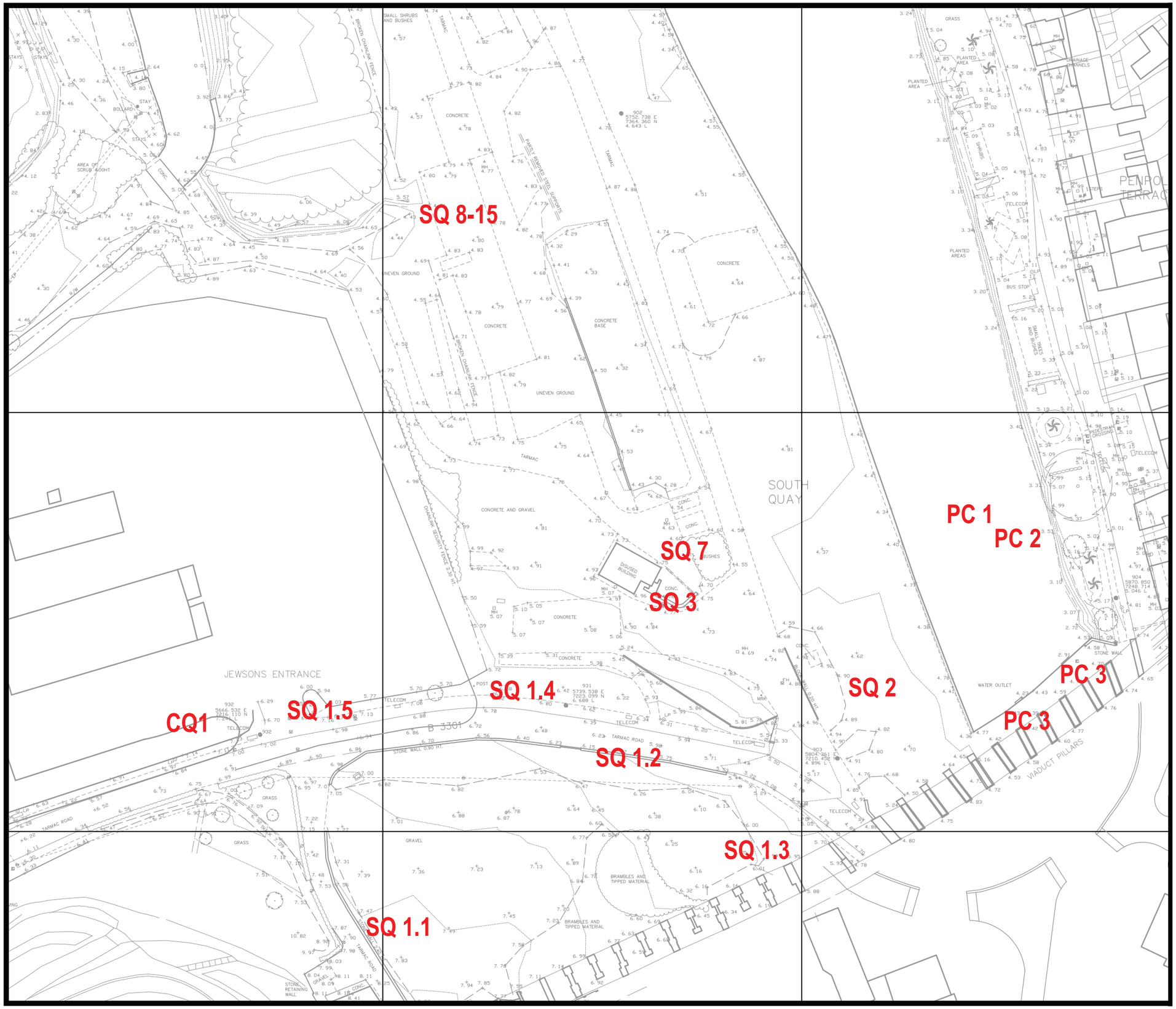

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Hayle Harbour

Railway Viaduct

Figure 10.2

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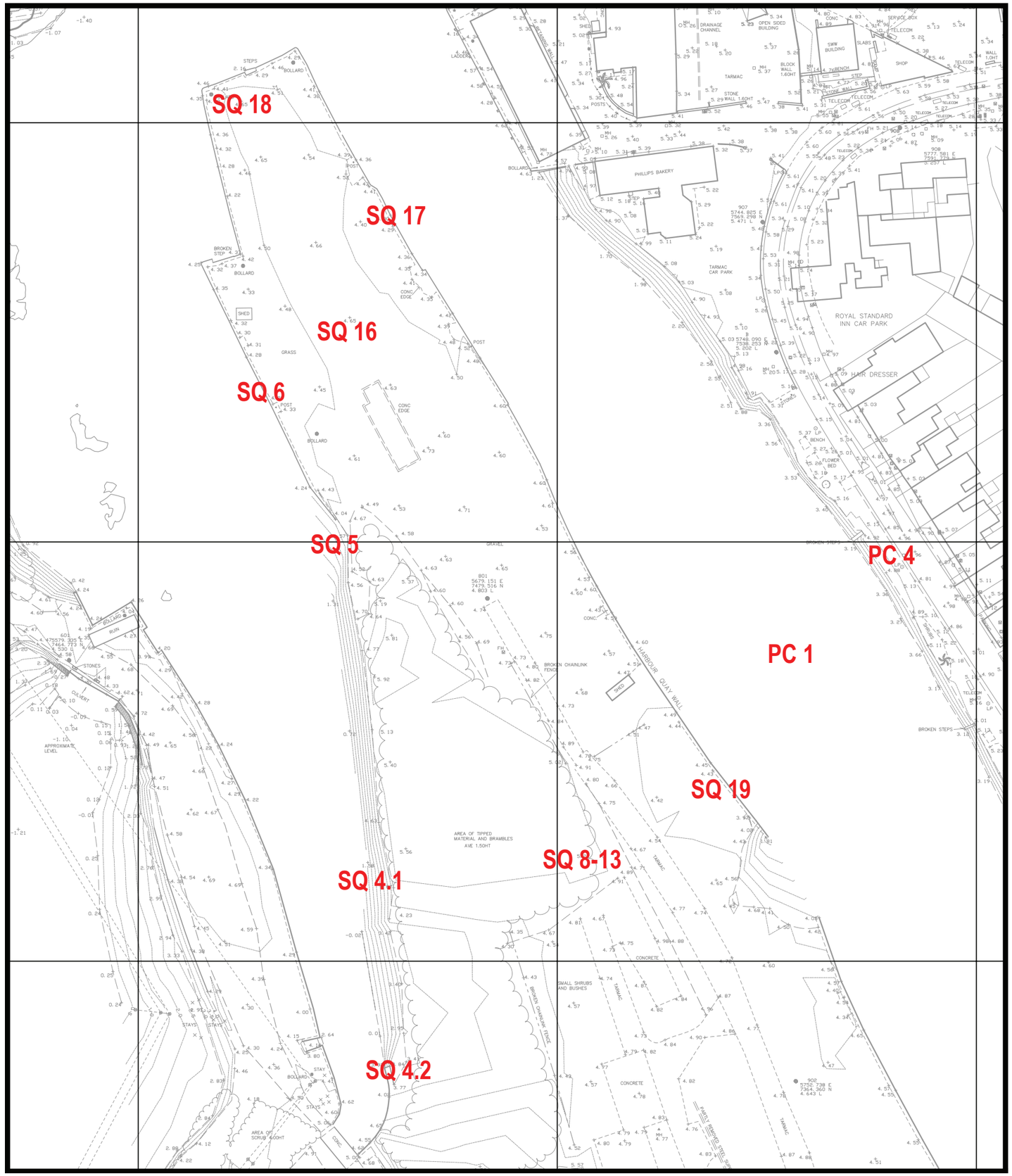

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Hayle Harbour

South Quay

Figure 10.3

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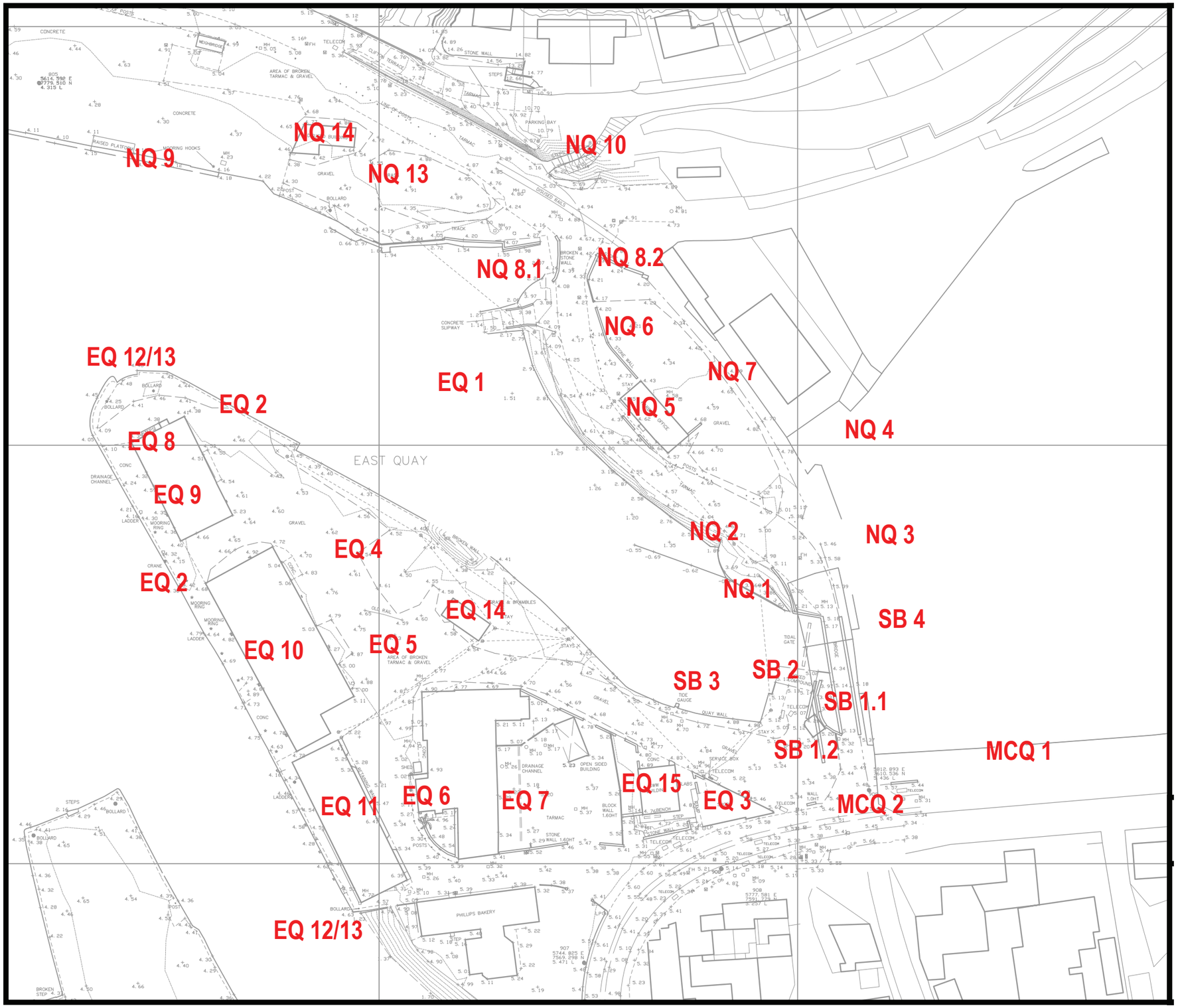

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Hayle Harbour

East Quay

Figure 10.4

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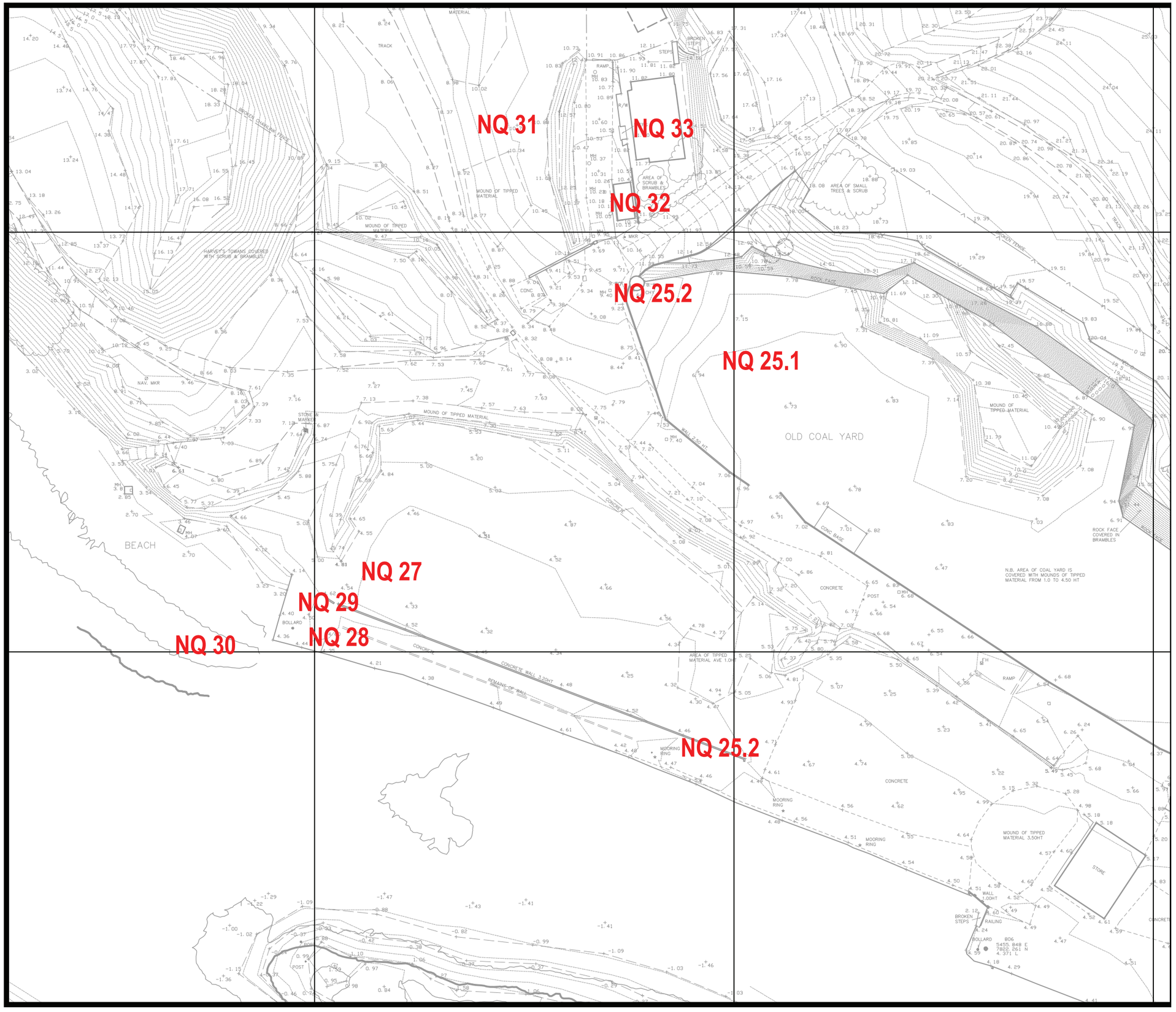

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Hayle Harbour

North Quay

Figure 10.5

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date November 2007

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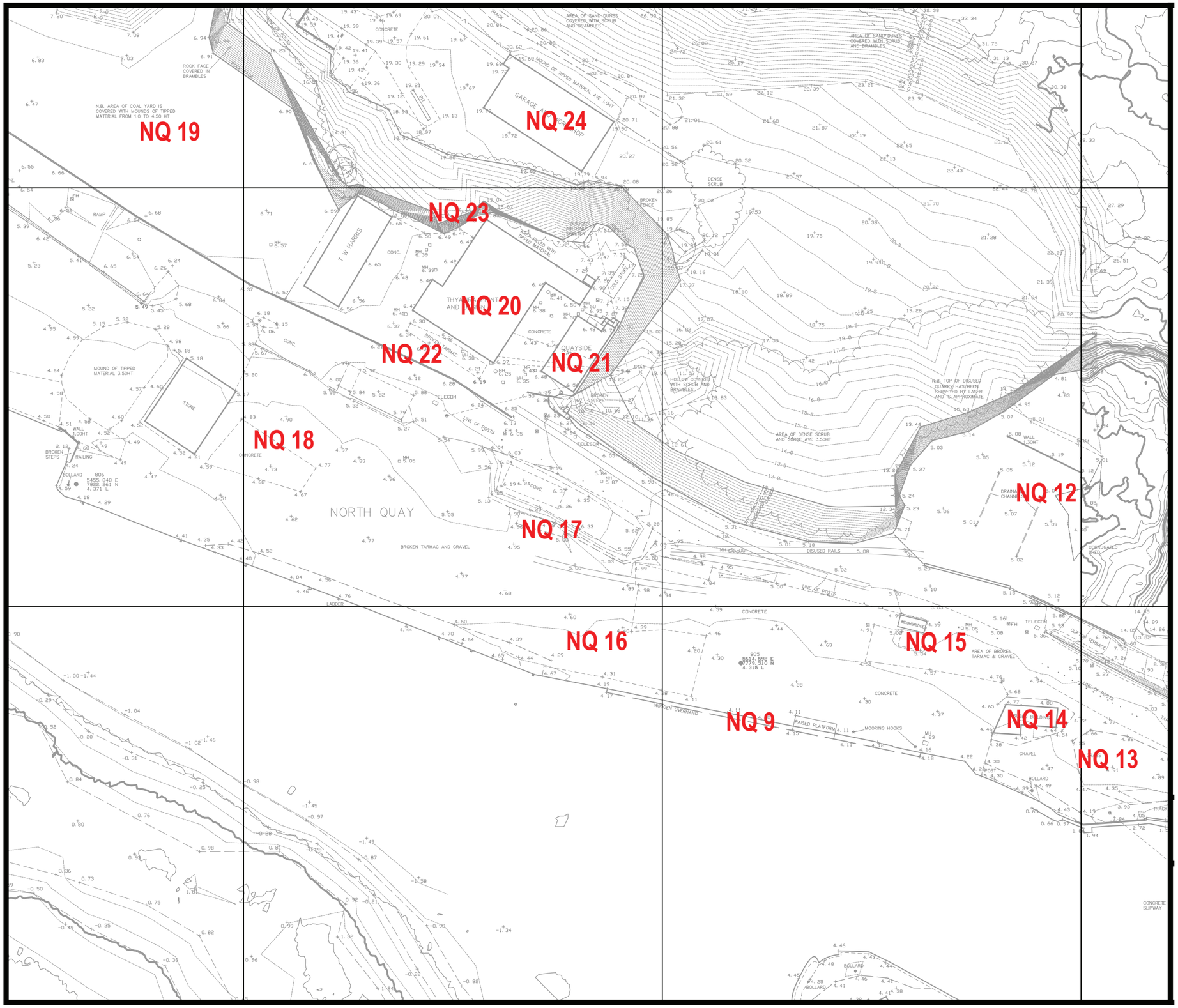

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Hayle Harbour

North Quay

Figure 10.6

scale 1: 1250
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date November 2007

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Name of Receptor	Ref[1]	Receptor Class	Type of Receptor	Statutory Protection[2]	Assessment of importance and sensitivity (Table 10 – 1)	Condition (Table 10 – 2)
Sluice	CQ10	Listed structure	Harbour Structure	Listed	National/ International	Good
Bollard/ Warping Post	CQ11	Listed structure	Harbour Furniture	Curtilage listed3	Regional/ County	Good
Earthwork Bank	CQ12	Listed structure	Harbour Structure	Listed	Regional/ County	Poor
Carnsew Pool	CQ2	Listed structure	Harbour Structure	Curtilage Listed	National/ International	Good
Carnsew Quay Pool Wall	CQ3	Listed structure	Harbour Structure	Listed	National/ International	Good – with the portion that is buried unknown
Entrance Area	CQ5.1.	Listed structure	Harbour Structure	Listed	National/ International	Fair
Lock Gates	CQ5.2.	Listed structure	Harbour Structure	Listed	Regional/ County	One is poor the other very poor
Quay Walls	CQ6	Listed structure	Harbour Structure	Listed	National/ International	Fair to good
Warping Post	CQ7	Listed structure	Harbour Furniture	Curtilage listed	Regional/ County	Fair/good
Loading slot	CQ8	Listed structure	Harbour Structure	Listed	National	Good
Granite Bollard	EQ12, EQ13	Listed structure	Harbour Furniture	Curtilage listed	Regional/ County	Fair

[1] This the reference number used in the Technical Annex 10A

[2] All the sites and structures are within the Hayle Conservation Area unless otherwise stated

[3] Curtilage Listed – structures that are considered to be within the curtilage of a listed building or structure

Name of Receptor	Ref[1]	Receptor Class	Type of Receptor	Statutory Protection[2]	Assessment of importance and sensitivity (Table 10 – 1)	Condition (Table 10 – 2)
Quay Walls	EQ2	Listed structure	Harbour structure	Listed	National/ International	Good
Wharf	MCQ1	Listed structure	Harbour structure	Listed	National	Fair to good
Quay Wall	NQ1	Listed structure	Harbour structure	Listed	National	Poor
Stables	NQ14	Listed structure	Building	Listed	Local/District	Very Poor
Mooring Blocks	NQ2	Listed structure	Harbour Furniture	Curtilage listed	Local/District	Good
Quay Wall	NQ3	Listed structure	Harbour structure	Listed	National/ International	Good
12 metres of Parapet immediately north of railway swing bridge	NQ3 (part)	Listed structure	Harbour structure	Listed	National/ International	Good
Bridge Buttress	NQ4	Listed structure	Railway Structure	Listed	National	Good
Harbour Managers Office	NQ5	Listed structure	Building	Listed	National/ International	Very Good
Railway Bridge	NQ7	Listed structure	Railway Structure	Listed	Regional/ County	Fair – support structure unknown
Sluice	NQ8.1.	Listed structure	Harbour structure	Listed	National	Good
Penpol Canal	PC1	Listed structure	Harbour Structure	Curtilage listed	Regional/ County	Good

Name of Receptor	Ref[1]	Receptor Class	Type of Receptor	Statutory Protection[2]	Assessment of importance and sensitivity (Table 10 – 1)	Condition (Table 10 – 2)
Sluices	PC3	Listed structure	Harbour Structure	Curtilage listed	Regional/ County	Fair to good
Swing Bridge	SB1	Listed structure	Railway Structure	Listed	National	Fair to good
Swing Bridge Mechanism and shelter	SB1.1.	Listed structure	Railway Structure	Curtilage listed	National	Fair
Tidal Gate	SB2	Listed structure	Harbour structure	Listed	Local/District	Good
Training Wall and Sluice	SB3	Listed structure	Harbour structure	Listed	National/ International	Fair
Warping Post	SB4	Listed structure	Harbour Furniture	Curtilage listed	Regional/ County	Fair
Tunnel (site of)	SQ16	Listed structure	Hidden Archaeology	Curtilage listed	Local/District	Unknown
Quay Wall (east)	SQ17	Listed structure	Harbour structure	Listed	National/ International	Fair to good
Warping Post	SQ18	Listed structure	Harbour Furniture	Curtilage listed	National	Good
Loading Slot	SQ19	Listed structure	Harbour structure	Listed	National	Fair
Dock Wall	SQ4	Listed structure	Harbour structure	Listed	National/ International	Very poor
Wooden Structure	SQ5	Listed structure	Harbour structure	Listed	National	Poor
Quay Walls	SQ6	Listed structure	Harbour structure	Listed	National/ International	Fair to good

Name of Receptor	Ref[1]	Receptor Class	Type of Receptor	Statutory Protection[2]	Assessment of importance and sensitivity (Table 10 – 1)	Condition (Table 10 – 2)
Culvert	NQ8.2.	Unlisted structure of historic significance	Harbour feature		Local	Unknown
Quay Wall	NQ9	Unlisted structure of historic significance	Harbour Structure		National/ International	Good
Bollard	NQ28	Unlisted structure of historic significance	Harbour Furniture		Regional/ County	Good
Quay Wall	NQ29	Unlisted structure of historic significance	Harbour Structure		National/ International	Fair
Wrecks	CB3	Hidden Archaeology	Hidden Archaeology		Negligible	Unknown
Slipways	CQ13	Hidden Archaeology	Hidden Archaeology		Negligible	Unknown
Saw Mill (site of)	CQ9	Hidden Archaeology	Hidden Archaeology		Negligible	Unknown
Dock (site of)	EQ1	Hidden Archaeology	Hidden Archaeology		Negligible	Unknown
Ore Store (site of)	EQ4	Hidden Archaeology	Hidden Archaeology		Negligible	Unknown
Tramway	EQ5	Hidden Archaeology	Hidden Archaeology		Local/District	Unknown

Name of Receptor	Ref[1]	Receptor Class	Type of Receptor	Statutory Protection[2]	Assessment of importance and sensitivity (Table 10 – 1)	Condition (Table 10 – 2)
Quarry/ Lifeboat Station	NQ12	Hidden Archaeology	Hidden Archaeology		Negligible	Unknown
Britannia Inn (site of)	NQ13	Hidden Archaeology	Hidden Archaeology		Negligible	Unknown
Ore Store (site of)	NQ16	Hidden Archaeology	Hidden Archaeology		Negligible	Unknown
Site of granite and scoria blocks	NQ18	Hidden Archaeology	Hidden Archaeology		Low local	Unknown
Calcining Works	NQ25. 1.	Hidden Archaeology	Hidden Archaeology		Negligible	Unknown
Buildings (site of)	NQ27	Hidden Archaeology	Hidden Archaeology		Negligible	Unknown
Power Station (site of)	NQ31	Hidden Archaeology	Hidden Archaeology		Negligible	Unknown
Lock gates	NQ6	Hidden Archaeology	Hidden Archaeology		Local/District	Unknown
Railway (site of)	PC4	Hidden Archaeology	Hidden Archaeology		Local/District	Unknown
Paving and railway	SQ2	Hidden Archaeology	Hidden Archaeology		Local/District	Fair
Shipyard Buildings (site of)	SQ8-SQ15	Hidden Archaeology	Hidden Archaeology		Negligible	Unknown
Warping Post	CB1	Other	Harbour Furniture		Local/District	Poor
Channel Marker	CB2	Other	Harbour Furniture		Local/District	Poor
Carnsew Swimming Pool	CQ14	Other	Structure		Low local	Fair

Name of Receptor	Ref[1]	Receptor Class	Type of Receptor	Statutory Protection[2]	Assessment of importance and sensitivity (Table 10 – 1)	Condition (Table 10 – 2)
Seawater inlet	CQ15	Other	Structure		Local/District	Fair
Fish Processing Shed	EQ10	Other	Building		Low Local	Fair
Warehouse	EQ11	Other	Building		Local/District	Good
Shed	EQ14	Other	Building		Low local	Poor
Store House	EQ8	Other	Building		Local/District	Fair
Industrial Shed	EQ9	Other	Building		Local/District	Fair to poor
Hayle Railway	MCQ2	Other	Railway Structure		Local/District	Unknown
Scoria Steps	NQ10	Other	Structure		Local/District	Fair
Boundary Stones	NQ11	Other	Structure		Local/District	Unknown
Weigh Bridge	NQ15	Other	Structure		Local/District	Bridge is good the adjacent office very poor
Wharves Branch Railway	NQ17	Other	Railway Structure		Regional/ County	Fair
Octel Building	NQ20	Other	Building		National 4	Good
Octel Building	NQ21	Other	Building		National	Good
Wall and railway	NQ22	Other	Structure		National	Fair to good
Wall	NQ23	Other	Structure		Low local	Good
Warehouse	NQ24	Other	Building		Low local	Fair

[4] The assessment of these buildings is based on the probable re-assessment of their importance in the light of recent research that is being carried out.

Name of Receptor	Ref[1]	Receptor Class	Type of Receptor	Statutory Protection[2]	Assessment of importance and sensitivity (Table 10 – 1)	Condition (Table 10 – 2)
Chimney	NQ25.2.	Other	Structure		Local/District	Poor
Sulphur Shed	NQ26.1.	Other	Building		Low local	Very Poor
Wall	NQ26.2.	Other	Structure		Low local	Good
Inspection Plate	NQ30	Other	Structure		Local/District	Fair
Gatehouse	NQ32	Other	Building		Low local	Very Poor
Social Club and Canteen	NQ33	Other	Building		Low local	Very Poor
Harbour Masters' Office Car Park and curtilage wall	NQ5 (part)	Other	Building		Low Local	Fair to Good
Wall, Foundry Lane	SQ1.1.	Other	Structure		Low local	Fair
Wall, Carnsew Road	SQ1.2.	Other	Structure		Low local	Poor
Wall and steps	SQ1.3.	Other	Structure		Low local	Good
Wall	SQ1.4.	Other	Structure		Low local	Fair
Drawing Office Walls	SQ3	Other	Structure/ Building		Local/District	Poor

Table 10– 9 Identification of receptors, condition and value

10.5 Assessment of potential construction impacts

10.5.1 Impacts on the World Heritage Site

The impacts on the World Heritage Site during the construction phase are deemed to be minor. The essential elements as detailed in section 10.4 above would remain intact and would only be subject to repair and where necessary some localised rebuilding. The demolition of a small fragment of a listed parapet wall on North Quay

to enable the construction of the essential North Quay road bridge would have minor adverse impact on the WHS. .

10.5.2 Impacts on the Conservation Area

There would be significant adverse impacts on the Conservation Area as there would be a considerable loss of features from the area. The hidden archaeology that is the footprint of many of the former buildings on the harbour, would be lost during the construction phase. There are the visible remains of much railway track on the quays of the harbour, especially North Quay, which are a tangible connection with the industrial past of the area. This is the track of the Hayle Wharf Railway that serviced the harbour which would be lost, largely as the result of the necessary flood defence which would be built in anticipation of the rise in sea levels over the coming decades. A number of minor structures such as walls which help to show the pattern of occupation would also be lost. The buildings on the west side of the East Quay which are also bound up with the history of the harbour, including the one to the extreme north end (EQ8) which is one of the oldest buildings in the area, would be demolished. This loss would alter the character of this part of the Conservation Area but the proposed development would ensure the long term future of the historic harbour as a whole. The impact is assessed to be adverse and moderate.

10.5.3 Impacts on listed structures

10.5.3.1 Impacts on listed harbour walls

The listed harbour walls would be repaired and where necessary rebuilt. The level of the impact would therefore vary according to the necessary depth of intervention involved. Impact significance would range from a major beneficial impact where the walls have completely collapsed, as on the east wall of the South Quay, to a minor beneficial impact where the walls are basically sound.

Harbour furniture that is within three metres of the harbour walls is deemed to lie within the curtilage of the listed harbour walls. This covers warping posts, granite and cast iron bollards and any other features that were part of the working elements of the historic harbour. All these features are to be retained and only repaired where necessary and any impact would therefore be minor and beneficial.

One exception to this general assessment is the impact on the harbour wall on the east side of South Quay where the half-tide barrier would be attached to the wall. This would have a major adverse impact. The impact would be minimised by ensuring that the harbour wall does not take the weight of the barrier.

There is one proposed point of demolition involving a short parapet wall on North Quay adjacent to the former railway swing bridge. The wall was erected at the time of the building of the present swing bridge in 1877. The demolition is necessary in order that the new road bridge between Hayle Terrace and the North Quay can be erected. The impact is assessed as being major and adverse.

10.5.3.2 Impacts on other listed structures

The listed tidal gate and railway bridge at the mouth of the Copperhouse Pool would remain untouched because both are owned by statutory bodies at the present time. The impact on both is therefore only a matter of setting and therefore considered under the assessment of operational impacts.

There are three other listed structures, the Harbour Masters Office, the railway bridge to the north of the office (NQ7) and the stable block (NQ14) each of which are likely to be retained subject to any essential repairs.

The listed Harbour Masters Office would be internally refurbished. This is assessed to be a minor beneficial impact (and lies outside the need for listed building consent).

The intention is to retain the stable block (NQ 14) but consideration would be given to further development and possible demolition at detailed planning stage.

10.5.4 Impacts on unlisted harbour walls

The unlisted walls of North Quay would be treated as though they were listed. However unlike the listed walls, the walls of the North Quay are uniformly in a good condition and would require only minor repairs. The significance of the impact is assessed as being minor and beneficial.

10.5.5 Impacts on hidden archaeology

For the hidden archaeology, which would be destroyed as a result of the work on the proposed development, the magnitude of the change would be large and the impact is determined to be up to moderate adverse,. Research has revealed what is believed to be all the sites within the proposed development area; these are listed in Table 10-9 and Technical Annex 10A Hayle Harbour: Buildings, Structures and Archaeological Remains, and the highest values assigned are Local/District.

Any unexpected findings that fall within the hidden archaeology category would be dealt with according to the guidance of PPG 16 (Planning Policy Guidance: Archaeology and Planning. November 1990).

10.5.6 Impacts on other buildings and structures

Those buildings and structures in this category are assessed individually as laid out in Table 10-11 below. Care has been taken in assessing the value of these structures and the assumption has been retention wherever possible. Several of the structures are in bad states of repair and have a low value, such as the ancillary buildings of the old power station (NQ 32 and 33), the Sulphur Shed on North Quay (NQ26.1) and the concrete block shed on East Quay (EQ14).

There are a number of old retaining walls that have lost their historic significance because of the loss of the buildings that were associated with them and therefore individually have a low value. However, they have a collective value as described above in Section 10.4.4 which describes the Conservation Area. Demolition is not

seen in these cases as a problem. A record of them would be made as part of the overall recording of the site which would then be used to inform later interpretation.

The greatest adverse impact within this group would be the loss of much of the harbour railway (NQ22) through the necessity to raise the level of the quays as part of future flood control. This impact is determined to be major adverse.

The long term impacts on those buildings and structures incorporated into the proposed development is assessed as being minor and beneficial.

The Two Octel Buildings (NQ 20 and 21) are intended to become the base of a larger building included in this assessment but would be subject to later more detailed impact assessment as part of future detailed planning application. These are likely to be substantial and adverse.

10.5.7 Summary of construction impacts

The receptors within the Conservation area, covered by Table 10-10 below, are banded into Listed Structures (including Curtilage Structures) non listed North Quay Walls, Hidden archaeology and other non-listed structures.

Receptor, reference and Category	Proposed Works	Receptor Value (Table 10 – 1)	Magnitude of change (Table 10 – 3)	Nature of impact (Table 10 – 4)	Baseline Condition (Table 10 – 2)	Impact Significance (Table 10 – 5)
Listed structure, (including curtilage listings)						
CQ2 Carnsew Pool	Essential repairs to periphery	International/ National	Negligible	Positive	Good	Negligible/ Beneficial
CQ3 Carnsew Quay Pool Walls	Leave as found	International/ National	None	None	Good – with the portion that is buried unknown	None
CQ.5.1. Entrance area	Dig out buried area and carry out essential repairs	International/ National	Medium	Positive	Fair	Moderate/ Beneficial
CQ5.2. Lock gates	Replace with modern gates and sluices. Lock gates to be used as interpretation if they can be stabilised	Regional/ County	Large	Positive	One is poor the other very poor	Major/ Beneficial

Receptor, reference and Category	Proposed Works	Receptor Value (Table 10 – 1)	Magnitude of change (Table 10 – 3)	Nature of impact (Table 10 – 4)	Baseline Condition (Table 10 – 2)	Impact Significance (Table 10 – 5)
CQ6 Quay Walls	Essential repairs rebuild collapsed areas	International/ National	Medium	Positive	Fair to good	Moderate/ Beneficial
CQ7 Warping post	Carry out necessary essential repairs	Regional/ County	Small	Positive	Fair/good	Moderate/ Minor/ Beneficial
CQ8 Loading slot	Carry out necessary essential repairs	International/ National	Small	Positive	Good	Moderate/ Beneficial
CQ10 Sluice (Carnsew Tunnels)	Installation of new mechanism repair of historic structure	International/ National	Small	Positive	Good	Moderate/ Beneficial
CQ11 Bollard/warping post	Carry out necessary essential repairs	Regional/ County	Small	Positive	Good	Moderate/ Minor / Beneficial
CQ12 Earthwork Bank	Leave as found	Regional/ County	None	Neutral	Poor	None
SQ4.1. Dock Wall	Excavate repair or rebuild	International/ National	Large	Positive	Fair	Major/ Beneficial
SQ4.2. Training Wall	Carry out necessary essential repairs	International/ National	Small	Positive	Fair	Moderate/ Beneficial
SQ5 Wooden Structure	Carry out necessary essential repairs	National	Medium	Positive	Fair	Major/ Beneficial
SQ6 Quay Wall	Carry out necessary essential repairs	International/ National	Small	Positive	Fair	Moderate/ Beneficial
SQ16 Tunnel (site of)	Confirm location and record	Local/ District	Medium	Positive	Very poor	Major/ Beneficial

Receptor, reference and Category	Proposed Works	Receptor Value (Table 10 – 1)	Magnitude of change (Table 10 – 3)	Nature of impact (Table 10 – 4)	Baseline Condition (Table 10 – 2)	Impact Significance (Table 10 – 5)
SQ17 Quay Walls (East)	Carry out necessary essential repairs Rebuild collapsed areas	International/ National	Medium	Positive	Poor	Major/ Beneficial
SQ18 Warping Post	Carry out necessary essential repairs	National	Small	Positive	Fair to good	Moderate/ Beneficial
SQ19 Loading slot	Carry out necessary essential repairs	International/ National	Small	Positive	Fair	Moderate/ Beneficial
PC1 Penpol Canal	Leave as found	Regional/ County	None	Neutral	Good	None
PC3 Sluices	Leave as found	Regional/ County	None	Neutral	Fair to good	None
EQ2 Quay Walls	Carry out necessary essential repairs	International/ National	Small	Positive	Good	Moderate/ Beneficial
EQ12 – 13 Granite Bollards	Carry out necessary essential repairs	Regional/ County	Small	Positive	Fair	Moderate/ Beneficial
MCQ1 Wharf	Carry out necessary essential repairs	International/ National	Small	Positive	Fair to good	Moderate/ Beneficial
SB1.1 Swing Bridge	Leave as found	International/ National	None	Neutral	Fair to good	None
SB1.2. Swing Bridge Mechanism	Leave as found	International/ National	None	Neutral	Fair	None
SB2 Tidal Gate	Leave as found	Local/ District	None	Neutral	Good	None

Receptor, reference and Category	Proposed Works	Receptor Value (Table 10 – 1)	Magnitude of change (Table 10 – 3)	Nature of impact (Table 10 – 4)	Baseline Condition (Table 10 – 2)	Impact Significance (Table 10 – 5)
SB3 Training Wall and Sluice	Carry out necessary essential repairs	International/ National	Small	Positive	Fair	Moderate/ Beneficial
SB4 Warping Post	Carry out necessary essential repairs	Regional/ County	Small	Positive	Fair	Minor / Beneficial
NQ1 Quay	Carry out necessary essential repairs	International/ National	Small	Positive	Good	Moderate/ Beneficial
NQ2 Mooring Blocks	Repair where necessary	Local/ District	Medium	Positive	Good	Moderate/ Beneficial
NQ3 Quay Walls	Carry out necessary essential repairs	International/ National	Small	Positive	Good	Moderate/ Beneficial
NQ3 (part) Twelve metres of Parapet adjacent north of railway swing bridge	Demolish	International/ National	Large	Negative	Good	Major/ Adverse
NQ4 Bridge Buttress	Carry out necessary essential repairs	National	Small	Positive	Good	Moderate/ Beneficial
NQ5 Harbour Managers Office	Minor refurbishment	International/ National	Small	Positive	Very Good	Moderate/ Beneficial
NQ7 Railway Bridge	Carry out necessary essential repairs	Regional/ County	Medium	Positive	Fair – support structure unknown	Moderate/ Beneficial
NQ8.1. Sluice	Leave as found	Local/ District	Small	Positive	Good	Minor / Beneficial

Receptor, reference and Category	Proposed Works	Receptor Value (Table 10 – 1)	Magnitude of change (Table 10 – 3)	Nature of impact (Table 10 – 4)	Baseline Condition (Table 10 – 2)	Impact Significance (Table 10 – 5)
`NQ14 Stables	Carry out necessary essential repairs	Regional	Small	Positive	Very Poor	Minor/ Beneficial
Unlisted structures of historical significance						
NQ8.2. Culvert	Leave as found	Local/ District	None	Neutral	Unknown	None
NQ9 Quay Walls	Carry out necessary essential repairs	International/ National	Small	Positive	Good	Moderate/ Beneficial
NQ28 Bollard	Carry out necessary essential repairs	International/ National	Small	Positive	Fair	Moderate/ Beneficial
NQ29 Quay Wall	Carry out necessary essential repairs	International/ National	Small	Positive	Fair	Moderate/ Beneficial
Hidden Archaeology						
CQ9 Saw Mill (site of)	Disturbance of below ground remains	Negligible	Large	Negative	Unknown	Minor/ Adverse
CQ13 Slipways	Leave as found	Negligible	None	Neutral	Unknown	None
SQ2 Paving and Rail tracks	Demolish	Local/ District	Large	Negative	Unknown	Moderate/ Adverse
SQ8- 15 Shipyard Buildings (site of)	Disturbance of below ground remains	Local/ District	Large	Negative	Poor	Moderate/ Adverse
PC4 Railway (site of)	Leave as found	Local/ District	None	Neutral	Unknown	None
EQ1 Dock (site of)	Leave as found	Negligible	None	Neutral	Unknown	None
EQ4 Ore Store (site of)	Disturbance of below ground remains	Negligible	Large	Negative	Unknown	Moderate/ Adverse

Receptor, reference and Category	Proposed Works	Receptor Value (Table 10 – 1)	Magnitude of change (Table 10 – 3)	Nature of impact (Table 10 – 4)	Baseline Condition (Table 10 – 2)	Impact Significance (Table 10 – 5)
EQ5 Tramway	Disturbance of below ground remains	Local/ District	Large	Negative	Unknown	Moderate/ Adverse
NQ12 Quarry/Lifeboat Station	Disturbance of below ground remains	Negligible	Large	Negative	Unknown	Minor/ Adverse
NQ13 Britannia Hotel (site of)	Disturbance of below ground remains	Negligible	Large	Negative	Unknown	Minor/ Adverse
NQ16 Ore Store (site Of)	Disturbance of below ground remains	Negligible	Large	Negative	Unknown	Minor/ Adverse
NQ18 Site of granite and scoria blocks	Disturbance of below ground remains	Low Local	Large	Negative	Unknown	Moderate/ Adverse
NQ25.1. Calcining Works	Disturbance of below ground remains	Negligible	Large	Negative	Poor	Minor/ Adverse
NQ27 Buildings (site of)	Disturbance of below ground remains	Negligible	Large	Negative	Good	Minor/ Adverse
NQ31 Power Station (site of)	Disturbance of below ground remains	Negligible	Large	Negative	Very Poor	Minor/ Adverse
CB3 Wrecks (site of)	Disturbance of below ground remains with removal of Cockle Bank	Negligible	Large	Negative	Unknown	Minor/ Adverse
Other structures and buildings						
CQ14 Carnsew Swimming Pool	Leave as found	Low Local	None	Neutral	Fair	None
NQ6 Lock Gates	Excavated and evaluated	Local/District	Large	Positive	Unknown	Moderate/ Beneficial
CQ15 Seawater inlet	Leave as found	Low Local	None	Neutral	Fair	None

Receptor, reference and Category	Proposed Works	Receptor Value (Table 10 – 1)	Magnitude of change (Table 10 – 3)	Nature of impact (Table 10 – 4)	Baseline Condition (Table 10 – 2)	Impact Significance (Table 10 – 5)
SQ1.1. Wall Foundry Lane	Repair and retain	Low Local	Large	Positive	Fair	Moderate/ Minor/ Beneficial
SQ1.2. Wall Carnsew Road	Demolish	Low Local	Large	Negative	Poor	Moderate/ Adverse
SQ1.3. Wall (cat 6)	Demolish	Low Local	Large	Negative	Good	Moderate/ Adverse
SQ1.4 Wall	Demolish	Low Local	Large	Negative	Fair	Moderate/ Adverse
SQ3 Drawing Office Walls	Demolish	Local/ District	Large	Negative	Good	Moderate/ Adverse
EQ8 Store House	Demolish	Local/ District	Large	Negative	Fair	Moderate/ Adverse
EQ9 Industrial Shed	Demolish	Local/ District	Large	Negative	Fair to poor	Moderate/ Adverse
EQ10 Fish Processing Shed	Demolish	Local/ District	Large	Negative	Fair	Moderate/ Adverse
EQ11 Warehouse	Demolish	Local/ District	Large	Negative	Good	Moderate/ Adverse
EQ14 Shed (cat 6)	Demolish	Low Local	Large	Negative	Poor	Moderate/ Adverse
MCQ2 Hayle railway	Leave as found	Local/ District	None	Neutral	Unknown	None
NQ5 (part) Harbour Manager's Office car park and curtilage wall	Demolish	Low Local	Large	Negative	Fair	Moderate/ Adverse
NQ10 Scoria Steps	Leave as found	Local/ District	None	Neutral	Fair	None
NQ11 Boundary Stones	Leave as found	Local/District	None	Neutral	Unknown	None

Receptor, reference and Category	Proposed Works	Receptor Value (Table 10 – 1)	Magnitude of change (Table 10 – 3)	Nature of impact (Table 10 – 4)	Baseline Condition (Table 10 – 2)	Impact Significance (Table 10 – 5)
NQ15 Weigh Bridge	Demolish	Local/ District	Large	Negative	Bridge good adjacent office very poor	Moderate/ Adverse
NQ17 Wharves Branch Railway	Disturbance of below ground remains	Regional/ County	Large	Negative	Fair	Moderate/ Adverse
NQ20 Octel Building	Carry out necessary essential repairs	National	Small	Positive	Good	Moderate/ Beneficial
NQ21 Octel Building	Carry out necessary essential repairs	National	Small	Positive	Good	Moderate/ Beneficial
NQ22 Wall and Railway	Demolish	National	Large	Negative	Fair to good	Major/ Adverse
NQ23 Wall	Demolish	Low Local	Large	Negative	Good	Moderate/ Adverse
NQ24 Warehouse	Demolish	Negligible	Large	Negative	Unknown	Moderate/ Adverse
NQ25.2. Chimney	Carry out necessary essential repairs	Local/ District	Medium	Positive	Poor	Moderate/ Beneficial
NQ26.1. Sulphur Shed	Demolish	Low Local	Large	Negative	Good	Moderate/ Adverse
NQ26.2. Wall	Demolish	Negligible	Large	Negative	Unknown	Minor/ Adverse
NQ30 Inspection Plate	Leave as found	Low Local	None	Neutral	Unknown	None
NQ32 Gatehouse	Demolish	Negligible	Large	Negative	Very Poor	Minor/ Adverse
NQ33 Social Club and Canteen	Demolish	Negligible	Large	Negative	Poor	Minor/ Adverse

Receptor, reference and Category	Proposed Works	Receptor Value (Table 10 – 1)	Magnitude of change (Table 10 – 3)	Nature of impact (Table 10 – 4)	Baseline Condition (Table 10 – 2)	Impact Significance (Table 10 – 5)
CB1 Warping Post	Leave as found	Local/ District	None	Neutral	Poor	None
CB2 Channel Marker	Demolish with Removal of Cockle Bank	Low Local	Large	Negative	Unknown	Moderate/ Adverse

Table 10– 10 : Summary of significance of construction impacts

10.6 Assessment of potential operation impacts

10.6.1 Impacts on the World Heritage Site

With the restoration of the essential elements of the historic harbour, especially the harbour walls, operational impacts are deemed to have an enhancing effect on the World Heritage Site. The development would create a restored and valuable area, which would be made accessible and permeable to the World Heritage Site as a whole. The interpretation that would be provided around the historic harbour, part of the operational phase, would make the World heritage Site more enjoyable and mode widely understood. The impact of the proposed development on the World Heritage Site is therefore determined to be moderate beneficial.

10.6.2 Impacts on the conservation area

The historic harbour, part of the Conservation Area, is basically derelict. The proposed development is designed to bring a sustained and viable future to the area. The overwhelming benefit to the historic fabric of this internationally significant port is that the scheme would enable it to survive into the foreseeable future. To do nothing is to condemn the area to further decline and eventual destruction. However the setting is subject to the specific design of the buildings to be erected in the area but these would be considered during the detailed planning process. The impact of the proposed development on the Conservation Area is therefore determined to be moderate beneficial.

10.6.3 Impacts on listed structures

The operational impacts on the majority of the listed structures are deemed to be minor. The flood defence structures and proposed buildings would be well set back from the quay edges and would not impact directly on the walls themselves but would have a minor adverse impact on the setting of the quay walls and associated harbour furniture such as bollards and warping posts. The impacts are therefore determined as minor adverse

The impacts on adjacent listed Buildings are assessed as negligible to minor. Minor impacts would be adverse. The two within sight of the proposed development are the listed churches of St Uny's at Lelant and St Ewy's on the high ground behind Hayle Terrace. The historic views of the these churches would be largely unaffected, St Uny's at Lelant would still be seen from all the historic vantage points and is deemed to be neutral and St Ewny's would still be seen from North Quay if a little restricted by the proposed buildings adjacent to the Harbour Master's Office. The operational impacts are therefore determined to be adverse but minor.

The setting of the other listed buildings on North Quay would be affected. The Railway Swing Bridge would be affected by the building of North Quay Bridge which would obscure the traditional view of the bridge from the Copperhouse side of Hayle Terrace.

The setting of the Harbour Master's Office would also be affected during the operational phase. To the north of the building would be the raised road that is part of the essential flood defences and there are two proposed buildings to the east and west. The view of the building from the south would be unaffected.

The listed railway bridge to the north of the Harbour Master's Office would also be affected by the raised road but as the main vantage point to view the bridge is from the east and west the impact is less than on these other listed structures.

The impacts on the stable block also arise from the raised road but it is likely to be affected more by the proposed building of a hotel on the site. Precise detail of this is not known at this time and would be subject to detailed planning. The operational impacts are determined to be moderate and adverse.

10.6.4 Impacts on hidden archaeology

There are no impacts in the operational phase of the proposed development on hidden archaeology. The impacts occur only in the construction phase when all affected resources will be preserved in record and either removed or reburied.

10.6.5 Impacts on other buildings and structures

The impacts on the unlisted harbour walls of North Quay and associated harbour furniture would be minor as they are to be repaired and retained but their setting would be affected by the raised road. The impact is determined as minor adverse.

Other buildings and structures are subject to neutral operational impacts apart from those at the back of North Quay which would be affected by the raised road. The operational impact on the setting of these would be moderate and adverse.

10.6.6 Summary of operational impacts

The receptors within the Conservation area, covered by the table below are banded into Listed Structures (including Curtilage Structures), the non listed North Quay Walls and other non-listed structures for ease of reference.

Receptor and reference	Operation activity	Receptor Value (Table 10 – 1)	Magnitude of change (Table 10 – 6)	Nature of impact (Table 10 – 4)	Impact Significance (Table 10 – 7)
Listed buildings (including curtilage structures)					
CQ2 Carnsew Pool	None	International/ National	None	None	None
CQ3 Carnsew Quay Pool Walls	None	International/ National	None	None	None
CQ.5.1. Entrance area	None	International/ National	None	None	None
CQ5.2. Lock gates	None	Regional/ County	None	None	None
CQ6 Quay Walls	None	International/ National	None	None	None
CQ7 Warping post	None	Regional/ County	None	None	None
CQ8 Loading slot	None	International/ National	None	None	None
CQ10 Sluice (Carnsew Tunnels) (	None	International/ National	None	None	None
CQ11 Bollard/warping post	None	Regional/ County	None	None	None
CQ12 Earthwork Bank	None	Regional/ County	None	None	None
SQ4.1. Dock Wall	Flood defences built at back of quay wall affect setting	International/ National	Moderate/ Minor	Negative	Moderate/ Adverse
SQ4.2. Training wall	None	International/ National	None	None	None
SQ5 Wooden Structure	Flood defences built at back of quay wall	National	Medium/Small	Negative	Moderate/ Adverse
SQ6 Quay Wall	Flood defences affect setting	International/ National	Medium/Small	Negative	Moderate/ Adverse

Receptor and reference	Operation activity	Receptor Value (Table 10 – 1)	Magnitude of change (Table 10 – 6)	Nature of impact (Table 10 – 4)	Impact Significance (Table 10 – 7)
SQ16 Tunnel (site of)	None	Local/District	None	None	None
SQ17 Quay Walls (East)	Flood defences built at back of quay wall	International/ National	Medium/Small	Negative	Moderate/ Adverse
SQ18 Warping Post	Flood defences built at back of quay wall	National	Medium/Small	Adverse	Moderate/ Adverse
SQ19 Loading slot	Flood defences built at back of quay wall	International/ National	Negligible	Adverse	Negligible/ Adverse
PC1 Penpol Canal	None	Regional/ County	None	None	None
PC3 Sluices	None	Regional/ County	None	None	none
EQ2 Quay Walls	Flood defences built at back of quay wall affect setting	International /National	Medium/Small	Negative	Moderate/ Adverse
EQ12 – 13 Granite Bollards	Flood defences built at back of quay wall affect setting	Regional/ County	Medium/Small	Negative	Moderate/ Adverse
MCQ1 Wharf	New road bridge partial obscures quay	International/ National	Medium	Negative	Moderate/ Adverse
SB1.1 Swing Bridge	Railway swing bridge totally obscured from one aspect	National	Large	Negative	Major/Adverse
SB1.2. Swing Bridge Mechanism And housing	None	National	None	None	None
SB2 Tidal Gate	None	Local/District	None	None	None
SB3 Training Wall and Sluice	None	International/ National	None	None	None
SB4 Warping Post	New road bridge would entirely obscure the post	Regional/ County	Large	Negative	Major/Adverse

Receptor and reference	Operation activity	Receptor Value (Table 10 – 1)	Magnitude of change (Table 10 – 6)	Nature of impact (Table 10 – 4)	Impact Significance (Table 10 – 7)
NQ1 Quay	The quay wall would be partially obscured by the new road bridge	International/ National	Medium	Negative	Moderate/ Adverse
NQ2 Mooring Blocks	None	Local/District	None	None	None
NQ3 Quay Walls	None	International/ National	None	None	None
NQ4 Bridge Buttress	None	National	None	None	None
NQ5 Harbour Managers Office	Raised road would partially obscure one aspect adjacent buildings would add to the screening of the building	International/ National	Large	Negative	Major/ Adverse
NQ7 Railway Bridge	Raised road would partially obscure the bridge	Regional/ County	Large	Negative	Major/ Adverse
NQ8.1. Sluice	Raised road at back of quay would partially affect the setting	Local/District	Small	Negative	Minor / adverse
`NQ14 Stables	Raised road would partially affect setting	Regional	Medium	Negative	Moderate/ Minor/ Adverse
Unlisted North Quay Walls					
NQ8.2. Culvert	None	Local/District	None	None	None
NQ9 Quay Walls	None	International/ National	None	None	None
NQ28 Bollard	Flood defences would affect setting	International/ National	Medium/Small	Negative	Moderate / Adverse
NQ29 Quay Wall	Flood defences built at back of quay wall affect setting	International/ National	Medium/ Small	Negative	Moderate / Adverse
Other Structures and Buildings					

Receptor and reference	Operation activity	Receptor Value (Table 10 – 1)	Magnitude of change (Table 10 – 6)	Nature of impact (Table 10 – 4)	Impact Significance (Table 10 – 7)
CQ14 Carnsew Swimming Pool	None	Low Local	None	None	None
CQ15 Seawater inlet	None	Low Local	None	None	None
SQ1.1. Wall Foundry Lane	None	Low Local	None	None	None
PC4 Railway (site of)	None	Local/District	None	None	None
MCQ2 Hayle railway	None	Local/District	None	None	None
NQ6 Lock Gates	None	Local/District	None	None	None
NQ10 Scoria Steps	None	Local/District	None	None	None
NQ11 Boundary Stones	Raised road at back of quay would partially affect the setting	Local/District	Small	Negative	Minor /Adverse
NQ20 Octel Building	Raised road at back of quay would partially affect the setting	National	Medium	Negative	Moderate/ Adverse
NQ21 Octel Building	Raised road at back of quay would partially affect the setting	National	Medium	Negative	Moderate/ Adverse
NQ25.2. Chimney	Raised road at back of quay would partially affect the setting	Local/District	Medium	Negative	Minor /Adverse
NQ30 Inspection Plate	None	Low Local	None	None	None
CB1 Warping Post	None	Local/District	None	None	None

Table 10– 11 Summary of significance of operational impacts

10.7 Mitigation

10.7.1 Proposed mitigation during construction

The following mitigation measures are proposed to mitigate the construction impacts identified:

- Historic Retention - Receptor has been retained and repaired as part of the essential historic fabric of the harbour.
- Preservation in record (District Record) - The record made of a receptor of local/District value which has been lost as a result of scheme construction to enhance the strategic and economic viability of the scheme –.
- Preservation in record. (Local Low Record) - The record made of a receptor of Local Low value which has been lost as a result of scheme construction to enhance the strategic or economic viability of the scheme
- Construction Method Statement – to allow for further investigation and recording if unexpected features discovered during construction.

10.7.1.1 Mitigation for adverse impacts on WHS during construction

There are no significant adverse impacts on the WHS during the construction therefore no mitigation is necessary

10.7.1.2 Mitigation for adverse impacts on Conservation Area during construction

A number of significant adverse impacts to the Conservation Area during construction were identified resulting mainly from the loss of some features and some hidden archaeology. This moderate adverse impact is unfortunately unavoidable as the losses are either required to provide adequate flood defence to the development or are an essential part of the strategic and economic viability of the scheme. This impact cannot be further mitigated.

10.7.1.3 Mitigation for adverse impacts on listed structures during construction

There are no adverse impacts on listed structures during construction; all impacts are considered to be beneficial as many structures will be subject to essential repairs. The one exception is the demolition of a part of the parapet wall adjacent to the swing bridge to make way for the new road bridge. This would be mitigated to some extent by making a record of the parapet.

10.7.1.4 Mitigation for adverse impacts on hidden archaeology during construction

Any remains associated with 'Sites of Hidden Archaeology' as well as any hitherto unknown buried archaeological remains have been shown to be under potential threat from the impact of the proposed works during construction.

The Government's policy towards archaeological remains and development in England and Wales is outlined in PPG 16 (DoE 1990). This document highlights the fact that archaeological remains are a finite, non-renewable resource, and where possible should be subject to preservation in situ. When this is not considered feasible, preservation by record is the preferred option.

With the demands of modern society, it is not always feasible to save all archaeological remains. The key question is where and how to strike the right balance. Where nationally important archaeological remains, whether scheduled or not, and their settings are affected by proposed development there should be a presumption in favour of their physical preservation. Cases involving archaeological remains of lesser importance will not always be so clear cut.' (op cit, para 8). 'There will no doubt be occasions, particularly where remains of lesser importance are involved, when planning authorities may decide that the significance of the archaeological remains is not sufficient when weighed against all other material considerations, including the need for development, to justify their preservation in situ, and that the proposed development should proceed.' (op cit, para 28).

In accordance with the guidance in PPG 16 any potential impacts to any remains associated with 'Sites of Hidden Archaeology' would be mitigated by a program of targeted archaeological evaluation and recording.

The determination of the presence or absence of buried archaeological resources is not something that can be predicted with absolute certainty. The sites of much of the hidden archaeology is known from archival sources and where this is of low local or negligible significance, which is the majority of these sites, investigation and recording would take place during the initial phase of ground preparation and surface removal.

Where hidden archaeological sites are found during work on the proposed development that were not predicted there would be an immediate evaluation, and a decision on the future of the site based on the evaluation and the guidelines of PPG 16 and proposed mitigation.

The excavation of these sites, however, would greatly enhance our knowledge of the area and the workings of the historic harbour.

10.7.1.5 Mitigation for adverse impacts on other buildings and structures during construction

There are a number of standing structures that would be demolished as part of the refurbishment of the harbour. This mainly involves the removal of old retaining walls which are assessed as to be of Local/District but mainly of Low Local value. The mitigation in these cases, as with the hidden archaeology, is preservation in record.

This record would be added to the knowledge of the historic harbour which would inform the interpretation of the area. The interpretation is to include a heritage trail, interpretative panels and there is potential to provide space to incorporate one of the Harvey beam engines into a public space offsite at the Foundry.

10.7.2 Mitigation for operation impacts

The following mitigation measures are proposed to mitigate the operational impacts identified:

- Flood defences set back a minimum of two metres from quay walls to allow these to be visible in their original proportions
- Provision of safe public access to waters edge and listed an important features which doesn't currently exist. Includes giving access to previously undiscovered or relatively unknown assets.
- Interpretation of historical features and raised awareness of Hayle's cultural heritage
- Use of appropriate materials for promenades/ flood defences that respect the tones and industrial character of the site
- Preservation of historic features in-situ
- Design of new road bridge to minimise visual impact
- Bridge to over-sail harbour wall to avoid direct impact
- Improved viability of long-term use of listed buildings
- Avoidance of flood defences between listed building and the waters edge
- Retain relationship between feature and surroundings
- Sensitive design of buildings (at detailed design stage) to complement and enhance setting of historic features

10.7.2.1 Mitigation for adverse impacts on WHS during operation

There would be no significant adverse impacts on the WHS during the operation of the development therefore no mitigation is necessary

10.7.2.2 Mitigation for adverse impacts on Conservation Area during operation

There is potential for the operation of the scheme to bring adverse impacts to the Conservation Area in terms of the setting of important features. This impact would be mitigated through the detailed design process which will ensure design is sensitive to retained buildings and structures and complements and enhances their setting as far as possible.

The scheme would also provide viable continued use of a number of listed buildings within the Conservation Area securing their continued existence into the future.

10.7.2.3 Mitigation for adverse impacts on listed structures during operation

Adverse impacts on listed structures including quay walls would result primarily from the construction of the flood defences as well as the raised road and the new road bridge.

Mitigation for these impacts includes the setting back of flood defences at least two metres from the existing quay walls to avoid direct impacts, design of flood defences to use appropriate materials, the location of flood defences behind the listed Harbour Master Office so as not come between the building and the water, much improved safe public access to important features and the waterside and interpretation features.

10.7.2.4 Mitigation for adverse impacts on hidden archaeology during operation

There would be no significant adverse impacts on hidden archaeology during the operation of the development therefore no mitigation is necessary

10.7.2.5 Mitigation for adverse impacts on other buildings and structures during operation

Structures at the back of North Quay would be affected by the raised road which is part of the flood defences. No mitigation is proposed as the design proposed already minimises this impact as far as is feasible.

Other adverse impacts would be mitigated to some degree by the improvements brought in terms of increased public access and interpretation.

10.8 Residual impacts

The significance of the impacts following implementation of mitigation is described below.

10.8.1 Residual impact on WHS

There would be no residual impact on the World Heritage Site during construction or operation

10.8.2 Residual impacts on Conservation Areas

The overall impact on the Conservation Area would be beneficial as a result of the repairs to the historic harbour. Adverse impacts during the construction phase would be outweighed by the mitigation of developing a viable and sustainable scheme that provides access to, and activity along, the water's edge. Significant mitigation is delivered through the heritage interpretation introduced throughout the harbour to raise awareness and inform understanding of the history of the town and harbour, cultural heritage and the function and importance of specific historic features, both retained and lost. Further information is provided throughout the preservation in record of that which is lost. The residual impacts on the Conservation Area are therefore determined to be negligible.

10.8.3 Residual impacts on listed structures

There would be no adverse impacts on many of the listed buildings and there are many receptors where the residual impact is beneficial.

However, there would be one moderate adverse residual impact during construction on the listed parapet wall which cannot be further mitigated as its loss is essential to the provision of the new road bridge. There would also be a number of minor to moderate adverse impacts on listed buildings due to changes in their setting resulting from the flood defences, raised road and new road bridge. These would be mitigated as far as possible through sensitive design.

All the adverse impacts would occur at the east end of North Quay where there is a collection of sensitive receptors. In all these cases they would involve a change that is essential to the strategic viability of the proposed development and/or determined by Government Directives concerned with flood defence. The justification for accepting this margin between total impact weighting and the associated mitigation is laid out in the PPG 15 statement as they all involve listed structures

10.8.4 Residual impacts on unlisted Quay Walls

Residual impacts on the unlisted North quay walls during construction would all be beneficial. There would be some minor adverse impacts during operation from the change in setting resulting from the flood defence, but these would be mitigated as far as possible through sensitive design of the flood defences and are unavoidable.

10.8.5 Residual impacts on hidden archaeology

There would be some minor adverse residual impacts during construction due to loss of features or disturbance. There would be no residual impacts during operation.

10.8.6 Residual impacts on other structures and buildings

In the majority of cases the residual impacts on receptors would be neutral or negligible. There are a few minor adverse impacts during construction due to the unavoidable loss of some structures which would be preserved in record. This includes a moderate adverse impact on the nationally important harbour railway which would be lost due to the raised quay levels for flood defence. During operation there would be no adverse impacts except on the Octel building where minor adverse impacts are anticipated from the change in setting resulting from the raised road. These would be minimised as far as possible through sensitive design.

10.8.7 Summary of assessment of residual impacts

Receptor and reference	Construction Impact Significance (Table 10 - 5)	Form of Mitigation	Construction Residual Impact
Listed structures (including curtilage listings)			
CQ2 Carnsew Pool National/International	Negligible/ Beneficial	None required	Negligible/ Beneficial
CQ3 Carnsew Quay Pool Walls National/international	None	None Required	None

Receptor and reference	Construction Impact Significance (Table 10 - 5)	Form of Mitigation	Construction Residual Impact
CQ.5.1. Entrance area National/ international	Moderate/ Beneficial	None Required	Moderate/ Beneficial
CQ5.2. Lock gates Regional/ County	Major/ Beneficial	None Required	Major/ Beneficial
CQ6 Quay Walls National/international	Moderate/ Beneficial	None Required	Moderate/ Beneficial
CQ7 Warping post Regional/County	Moderate/ Minor/ Beneficial	None Required	Moderate/ Minor/ Beneficial
CQ8 Loading slot National	Moderate/ Beneficial	None Required	Moderate/ Beneficial
CQ10 Sluice National/international	Moderate/ Beneficial	None Required	Moderate/ Beneficial
CQ11 Bollard/ warping post Regional/ County	Moderate/ Minor/ Beneficial	None Required	Moderate/ Minor/ Beneficial
CQ12 Earthwork Bank Regional	None	None Required	None
SQ4.1 Dock Wall National/ International	Major/ Beneficial	None Required	Major/ Beneficial
SQ4.2 Training Wall National/ International	Moderate/ Beneficial	None Required	Moderate/ Beneficial
SQ5 Wooden Structure National	Major/ Beneficial	None Required	Major/ Beneficial
SQ16 Tunnel (site of) Local/District	Major/ Beneficial	None Required	Major/ Beneficial
SQ17 Quay Walls (East) National/ International	Major/ Beneficial	None Required	Major/ Beneficial
SQ18 Warping Post National	Moderate/ Beneficial	None Required	Moderate/ Beneficial
SQ19 Loading slot National	Moderate/ Beneficial	None Required	Moderate/ Beneficial
PC1 Penpol Canal Regional/ County	None	None Required	None

Receptor and reference	Construction Impact Significance (Table 10 - 5)	Form of Mitigation	Construction Residual Impact
PC3 Sluices Regional/ County	None	None Required	None
EQ2 Quay Walls National/ International	Moderate/ Beneficial	None Required	Moderate/ Beneficial
EQ12 – 13 Granite Bollards Regional/ County	Moderate/ Beneficial	None Required	Moderate/ Beneficial
MCQ1 Wharf National/ International	Moderate/ Beneficial	None Required	Moderate/ Beneficial
SB1.1 Swing Bridge National	None	None Required	None
SB1.2. Swing Bridge Mechanism National	None	None Required	None
SB2 Tidal Gate Local/ District	None	None Required	None
SB3 Training Wall and Sluice International	Moderate/ Beneficial	None Required	Moderate/ Beneficial
SB4 Warping Post Regional/ County	Minor/ Beneficial	None Required	Minor/ Beneficial
NQ1 Quay National/ International	Moderate/ Beneficial	None Required	Moderate/ Beneficial
NQ2 Mooring Blocks Local/ District	Moderate/ Beneficial	None Required	Moderate/ Beneficial
NQ3 Quay Walls National/International	Moderate/ Beneficial	None Required	Moderate/ Beneficial
NQ3 (part) Twelve metres of Parapet adjacent north of railway swing bridge	Major/Adverse	Preservation in Record	Moderate/ Adverse
NQ4 Bridge Buttress National	Moderate/ Beneficial	None Required	Moderate/ Beneficial
NQ5 Harbour Managers Office National/ International	Moderate/ Beneficial	None Required	Moderate/ Beneficial

Receptor and reference	Construction Impact Significance (Table 10 - 5)	Form of Mitigation	Construction Residual Impact
NQ7 Railway Bridge Regional/ County	Moderate/ Beneficial	None Required	Moderate/ Beneficial
NQ8.1. Sluice National	Minor / Beneficial	None Required	Minor/ Beneficial
`NQ14 Stables Local/ District	Minor /Beneficial	None Required	Minor / Beneficial
Unlisted structures with historical significance			
NQ8.2. Culvert Local/ District	None	None Required	None
NQ9 Quay Walls National/ International	Moderate/ Beneficial	None Required	Moderate/ Beneficial
NQ28 Bollard Regional/ County	Moderate/ Beneficial	None Required	Moderate/ Beneficial
NQ29 Quay Wall National/International	Moderate/ Beneficial	None Required	Moderate/ Beneficial
Hidden Archaeology			
CQ9 Saw Mill (site of) Negligible	Minor/ Adverse	Preserve in record	Minor/Adverse
CQ13 Slipways Negligible	None	Neutral	None
SQ2 Paving and Rail tracks Local/District	Moderate/ Adverse	Preserve in record	Minor /Adverse
SQ8- 15 Shipyard Buildings Negligible	Moderate/ Adverse	Preserve in record	Minor /Adverse
PC4 Railway (site of) Local/District	None	None Required	None
EQ1 Dock (site of) Negligible	None	None Required	None
EQ4 Ore Store Negligible	Moderate/ Adverse	Preserve in record	Minor /Adverse
EQ5 Tramway Local/ District	Moderate/ Adverse	Preserve in record	Minor /Adverse

Receptor and reference	Construction Impact Significance (Table 10 - 5)	Form of Mitigation	Construction Residual Impact
NQ12 Quarry/Lifeboat Station Negligible	Minor/ Adverse	Preserve in record	Minor /Adverse
NQ13 Britannia Hotel (site of) Negligible	Minor/ Adverse	Preserve in record	Minor /Adverse
NQ18 Site of scoria blocks Low Local	Moderate/ Adverse	Preserve in record	Minor /Adverse
NQ25.1. Calcining Works Negligible	Minor/ Adverse	Preserve in record	Minor /Adverse
NQ31 Power Station (site of) Negligible	Minor/ Adverse	Preserve in record	Minor /Adverse
CB3 Wrecks Negligible	Minor/ Adverse	Preserve in record	Minor /Adverse
Other structures and buildings			
CQ14 Carnsew Swimming Pool Low local	None	None Required	None
NQ6 Lock Gates Local/ District	Moderate/ Beneficial	None required	Moderate/ Beneficial
CQ15 Seawater inlet Low Local	None	None required	None
SQ1.1. Wall Foundry Lane Low Local	Moderate/ Minor/ Beneficial	None required	Moderate/ Minor/ Beneficial
SQ1.2. Wall Carnsew Road Low Local	Moderate/ Adverse	Preserve in record	Minor/Adverse
SQ1.3. Wall Low Local	Moderate/ Adverse	Preserve in record	Minor /Adverse
SQ1.4 Wall Low Local	Moderate/ Adverse	Preserve in record	Minor /Adverse
SQ3 Drawing Office Walls Local/District	Moderate/ Adverse	Preserve in record	Minor /Adverse
EQ8 Store House Local/ District	Moderate/ Adverse	Preserve in record	Minor /Adverse
EQ9 Industrial Shed Local/ District	Moderate/ Adverse	Preserve in record	Minor /Adverse

Receptor and reference	Construction Impact Significance (Table 10 - 5)	Form of Mitigation	Construction Residual Impact
EQ10 Fish Processing Shed Local/ District	Moderate/ Adverse	Preserve in record	Minor /Adverse
EQ11 Warehouse Local/ District	Moderate/ Adverse	Preserve in record	Minor /Adverse
EQ14 Shed Low Local	Moderate/ Adverse	Preserve in record	Minor /Adverse
MCQ2 Hayle railway Local/ District	None	None required	None
NQ5 (part) Harbour Manager's Office car park and curtilage wall	Moderate/ Adverse	Preserve in record	Minor / Adverse
NQ10 Scoria Steps Local/ District	None	None Required	None
NQ11 Boundary Stones Local/ District	None	None Required	None
NQ17 Wharves Branch Railway Regional/ County	Moderate/ Adverse	Preserve in record	Minor /Adverse
NQ20 Octel Building National	Moderate/ Beneficial	None Required	Moderate/ Beneficial
NQ21 Octel Building National	Moderate/ Beneficial	None Required	Moderate/ Beneficial
NQ22 Wall and Railway National	Major/ Adverse	Preserve in record	Moderate /Adverse
NQ23 Wall Low Local	Moderate/ Adverse	Preserve in record	Minor/ Adverse
NQ24 Warehouse Low Local	Moderate/ Adverse	Preserve in record	Minor /Adverse
NQ25.2. Chimney Local/District	Moderate/ Beneficial	None Required	Moderate/ Beneficial
NQ26.1. Sulphur Shed Low Local	Moderate/ Adverse	Preserve in record	Minor /Adverse
NQ26.2. Wall Low Local	Moderate/ Adverse	Preserve in record	Minor /Adverse

Receptor and reference	Construction Impact Significance (Table 10 - 5)	Form of Mitigation	Construction Residual Impact
NQ30 Inspection Plate Local/District	None	None Required	None
NQ32 Gatehouse Low Local	Minor/ Adverse	Preserve in record	Minor /Adverse
NQ33 Social Club and Canteen Low Local	Minor/ Adverse	Preserve in record	Minor /Adverse
CB1 Warping Post Low Local	None	None Required	None
CB2 Channel Marker Low Local	Moderate/ Adverse	Preserve in record	Minor /Adverse

Table 10– 12 Construction impact, form and scale of mitigation and residual impact

Receptor and reference	Operation Impact Significance (Table 10 – 7)	Form of Mitigation	Operation Residual Impact
Listed structures (including curtilage listings)			
CQ2 Carnsew Pool National/International	None	None Required	None
CQ3 Carnsew Quay Pool Walls National/international	None	None Required	None
CQ.5.1. Entrance area National/ international	None	None Required	None
CQ5.2. Lock gates Regional/ County	None	None Required	None
CQ6 Quay Walls National/international	None	None Required	None
CQ7 Warping post Regional/County	None	None Required	None
CQ8 Loading slot National	None	None Required	None
CQ10 Sluice National/international	None	None Required	None

Receptor and reference	Operation Impact Significance (Table 10 – 7)	Form of Mitigation	Operation Residual Impact
CQ11 Bollard/ warping post Regional/ County	None	None Required	None
CQ12 Earthwork Bank Regional	None	None Required	None
SQ4.1 Dock Wall National/ International	Moderate/ Adverse	Flood defences set back Interpretation Public access Appropriate materials	Minor/ Adverse
SQ4.2 Training Wall National/ International	None	None Required	None
SQ5 Wooden Structure National	Moderate/ Adverse	Public access Preservation in-situ Interpretation	Minor/ Adverse
SQ16 Tunnel (site of) Local/District	None	None Required	None
SQ17 Quay Walls (East) National/ International	Moderate/ Adverse	Flood defences set back Interpretation Public access Appropriate materials	Minor/ Adverse
SQ18 Warping Post National	Moderate/ Adverse	Public access Preservation in-situ Interpretation	Minor/ Adverse
SQ19 Loading slot National	Negligible	None Required	Negligible
PC1 Penpol Canal Regional/ County	None	None Required	None
PC3 Sluices Regional/ County	None	None Required	None
EQ2 Quay Walls National/ International	Moderate/ Adverse	Flood defences set back Interpretation Public access Appropriate materials	Minor/ Adverse
EQ12 – 13 Granite Bollards Regional/ County	Moderate/ Adverse	Public access Preservation in-situ Interpretation	Minor/ Adverse

Receptor and reference	Operation Impact Significance (Table 10 – 7)	Form of Mitigation	Operation Residual Impact
MCQ1 Wharf National/ International	Moderate/ Adverse	Public access Steps down to quay Interpretation Bridge designed to minimise visual impact No physical impact	Minor/ Adverse
SB1.1 Swing Bridge National	Major/ Adverse	Bridge designed to minimise visual impact Retention in-situ Public access Interpretation	Moderate/ Adverse
SB1.2. Swing Bridge Mechanism National	None	None Required	None
SB2 Tidal Gate Local/ District	None	None Required	None
SB3 Training Wall and Sluice International	None	None Required	None
SB4 Warping Post Regional/ County	Major/ Adverse	Public access Preservation in-situ Interpretation	Moderate/ Adverse
NQ1 Quay National/ International	Moderate/ Adverse	Flood defences set back Interpretation Public access Appropriate materials	Minor/ Adverse
NQ2 Mooring Blocks Local/ District	None	None Required	None
NQ3 Quay Walls National/International	None	None Required	None
NQ3 (part) Twelve metres of Parapet adjacent north of railway swing bridge	Receptor demolished	None Required	None
NQ4 Bridge Buttress National	None	None Required	None
NQ5 Harbour Managers Office National/ International	Major/ Adverse	Improved viability of use Flood defence behind building Interpretation	Moderate/ Adverse
NQ7 Railway Bridge Regional/ County	Major/ Adverse	Interpretation	Moderate/ Adverse
NQ8.1. Sluice National	Minor/ Adverse	Interpretation	Negligible

Receptor and reference	Operation Impact Significance (Table 10 – 7)	Form of Mitigation	Operation Residual Impact
`NQ14 Stables Local/ District	Moderate/ Minor / Adverse	Public access Reuse of building (or materials)	Minor/ Adverse
Unlisted structures with historical significance			
NQ8.2. Culvert Local/ District	None	None Required	None
NQ9 Quay Walls National/ International	None	None Required	None
NQ28 Bollard Regional/ County	Moderate/ Adverse	Public access Preservation in-situ Interpretation	Minor/ Adverse
NQ29 Quay Wall National/International	Moderate/ Adverse	Flood defences set back Interpretation Public access Appropriate materials	Minor/ Adverse
Hidden Archaeology			
CQ9 Saw Mill (site of) Negligible	Receptor demolished	None Required	None
CQ13 Slipways Negligible	Receptor demolished	None Required	None
SQ2 Paving and Rail tracks Local/District	Receptor demolished	None Required	None
SQ8- 15 Shipyard Buildings Negligible	Receptor demolished	None Required	None
PC4 Railway (site of) Local/District	Receptor demolished	None Required	None
EQ1 Dock (site of) Negligible	Receptor demolished	None Required	None
EQ4 Ore Store Negligible	Receptor demolished	None Required	None
EQ5 Tramway Local/ District	Receptor demolished	None Required	None
NQ12 Quarry/Lifeboat Station Negligible	Receptor demolished	None Required	None

Receptor and reference	Operation Impact Significance (Table 10 – 7)	Form of Mitigation	Operation Residual Impact
NQ13 Britannia Hotel (site of) Negligible	Receptor demolished	None Required	None
NQ18 Site of scoria blocks Low Local	Receptor demolished	None Required	None
NQ25.1. Calcining Works Negligible	Receptor demolished	None Required	None
NQ31 Power Station (site of) Negligible	Receptor demolished	None Required	None
CB3 Wrecks Negligible	Receptor demolished	None Required	None
Other structures and buildings			
CQ14 Carnsew Swimming Pool Low local	None	None Required	None
NQ6 Lock Gates Local/ District	None	None required	None
CQ15 Seawater inlet Low Local	None	None required	None
SQ1.1. Wall Foundry Lane Low Local	None	None required	None
SQ1.2. Wall Carnsew Road Low Local	Receptor demolished	None required	None
SQ1.3. Wall Low Local	Receptor demolished	None Required	None
SQ1.4 Wall Low Local	Receptor demolished	None Required	None
SQ3 Drawing Office Walls Local/District	Receptor demolished	None Required	None
EQ8 Store House Local/ District	Receptor demolished	None Required	None
EQ9 Industrial Shed Local/ District	Receptor demolished	None Required	None
EQ10 Fish Processing Shed Local/ District	Receptor demolished	None Required	None

Receptor and reference	Operation Impact Significance (Table 10 – 7)	Form of Mitigation	Operation Residual Impact
EQ11 Warehouse Local/ District	Receptor demolished	None Required	None
EQ14 Shed Low Local	Receptor demolished	None Required	None
MCQ2 Hayle railway Local/ District	None	None required	None
NQ5 (part) Harbour Manager's Office car park and curtilage wall	Receptor demolished	None Required	None
NQ10 Scoria Steps Local/ District	None	None Required	None
NQ11 Boundary Stones Local/ District	Minor/ Adverse	Public access Preservation in-situ Interpretation	Negligible/ Adverse
NQ17 Wharves Branch Railway Regional/ County	Receptor demolished	None Required	None
NQ20 Octel Building National	Moderate/ Adverse	Improved viability of use Retain relationship to surroundings Interpretation	Minor/ Adverse
NQ21 Octel Building National	Moderate/ Adverse	Improved viability of use Retain relationship to surroundings Interpretation	Minor/ Adverse
NQ22 Wall and Railway National	Receptor demolished	None Required	None
NQ23 Wall Low Local	Receptor demolished	None Required	None
NQ24 Warehouse Low Local	Receptor demolished	None Required	None
NQ25.2. Chimney Local/District	Minor / Adverse	Public access Preservation in-situ Interpretation	Negligible/ Adverse
NQ26.1. Sulphur Shed Low Local	Receptor demolished	None Required	None
NQ26.2. Wall Low Local	Receptor demolished	None Required	None
NQ30 Inspection Plate Local/District	None	None Required	None

Receptor and reference	Operation Impact Significance (Table 10 – 7)	Form of Mitigation	Operation Residual Impact
NQ32 Gatehouse Low Local	Receptor demolished	None Required	None
NQ33 Social Club and Canteen Low Local	Receptor demolished	None Required	None
CB1 Warping Post Low Local	None	None Required	None
CB2 Channel Marker Low Local	Receptor demolished	None Required	None

Table 10– 13 Operation impact, form and scale of mitigation and residual impact

10.9 Monitoring

The parameters of the monitoring are likely to be set as a condition of the granting of planning approval. The ultimate responsibility for ensuring that any planning conditions laid down concerning the historic environment are complied with lies with the Planning Authority and English Heritage, however the conditions would be monitored by the developers to ensure that there is an early warning of any potential concerns raised. In such cases consultation with the Planning Authority and English Heritage would take place. The responsibility on behalf of the developers would lie with the body they appoint to carry out a watching brief. The other major responsibility for this appointee would be the keeping of a record of the changes made to the site and any archaeological finds discovered during the work on the proposed development. Any unexpected finds would be dealt with according to the guidance laid down in PPG 16 Planning Policy Guidance: Archaeology and planning 1990; procedures would be adopted to ensure there is a proper evaluation of the archaeological finds and that consultations with the relevant authorities takes place before decisions are made as to the appropriate action to be adopted. The record compiled of the changes made and archaeological finds discovered would be added to the existing record, and the final report deposited with the appropriate authorities including the Cornwall County Records Office at Truro.

10.10 Conclusions

Hayle Harbour is an historic site of International, National and Regional significance: its inclusion in the Cornwall and West Devon Mining Landscape World Heritage Site reflects both its place in industrial history and its unique townscape and naturalistic setting. Much of the waterside infrastructure, including the harbour walls, sluices and bridges, are recorded as Listed Buildings, and the Harbour enjoys Conservation Area status. Much of the harbour infrastructure is now in poor condition following years of neglect and a lack of viable use.

The proposed development offers the opportunity to protect the deteriorating historic features. It provides the means by which the harbour infrastructure can be repaired and activity can be reintroduced to the harbour.

Inevitably development will bring change to the harbour but the proposed development responds to the historic setting through appropriate scale and a respect for the setting of Listed Buildings, historic features and the natural setting. Proposals also substantially improve access to the historic quayside and introduce interpretation of historic features, raising awareness and understanding of how the town has evolved and the role it has played in global development. Where historic features are lost as a result of the development, records will be made in accordance with Planning Policy Guidance to broaden understanding of the history of the area.

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Cornish Studies Centre, Redruth

County Records Office, Truro

Cornwall Archaeology Unit, Truro

Hayle Library, Hayle

Morrab Library, Penzance

Royal Cornwall Institute

Local Historians and other Local People Contacted

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