1 Introduction

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1.1 Introduction

The environmental statement (ES) has been prepared in conjunction with the proposals to redevelop and regenerate Hayle Harbour, Cornwall hereafter referred to as 'the development proposal'.

The applications for outline planning and listed building consents have been submitted on behalf of the land owners ING RED UK (Hayle Harbour) Limited, hereafter referred to as 'ING Ltd'.

The preparation and co-ordination of this ES, including collation of chapters prepared by others, has been undertaken by Buro Happold Ltd. The following chapters were prepared by others:

- Chapter 2 Site Description – Buro Happold Ltd in conjunction with Additional2
- Chapter 3 Scheme Description – LDA Design Ltd
- Chapter 4 Planning Policy Context – LDA Design Ltd in conjunction with Berwin Leighton Paisner
- Chapter 5 Alternatives – LDA Design Ltd
- Chapter 7 Landscape and Visual – LDA Design Ltd
- Chapter 10 Archaeology and Cultural Heritage – Steve Little Research
- Chapter 12 Ecology – The Environment Practice
- Chapter 15 Socio-economics – Roger Tym and Partners

The development proposal is described in detail in Chapter 3. In summary, the proposed development involves the dredging and sluicing of harbour waters and the impoundment of Penpol Creek to create an appealing and active waterside location for a comprehensive mix of urban land uses. Part of the historic dock adjacent to Harvey's Foundry will be reinstated and business, retail, residential apartments and community uses will be built in the old shipyard area of South Quay. New housing, a hotel and employment uses will be built on the North Quay, including a new fishing quay and associated facilities. Residential uses are also proposed on the land adjacent to the harbour at Riviere Farm and the Hilltop area

The key elements of the scheme are:

- Reinstatement of the historical sluicing system
- Removal of a sand bar called Cockle Bank to provide a new marina
- Impoundment of Penpol Creek through use of a half tide gate
- Creation of 1,039 dwellings (175 of which are affordable)

- Creation of over 1,766 jobs (including jobs created during construction)
- Provision of new industrial and business space
- Provision of multi-purpose building containing business and education facilities
- Hotel and leisure facilities
- Space for primary health care facilities

1.2 Environmental Impact Assessment overview

The ES has been prepared under the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999 (referred to as the "EIA Regulations"). During preparation of the ES reference has been made to the relevant guidance, particularly DETR Circular 02/99, Environmental Impact Assessment, and Environmental Impact Assessment – A Guide to the Procedures (DETR, 2000).

The main purpose of the ES is to allow the decision makers, statutory consultees and all interested parties including members of the public to understand the implications of the development proposal on the environment. The ES sets out the findings of the Environmental Impact Assessment (EIA) describing the development proposal, and the information required to assess the impact of the development proposal on the environment. It includes a series of technical chapters examining in detail the potential impact of the development proposal on specific aspects of the environment and presenting the significant impacts identified, mitigation proposals and the residual impacts.

The EIA has involved the following key stages:

- Define scope of assessment (Scoping)
- Baseline data collection
- Impact assessment and consideration of alternatives/design iteration
- Development of mitigation measures, as appropriate
- Assessment of residual impacts
- Consultation (undertaken throughout EIA process)

These stages are described in more detail in the following sections.

1.3 Scoping

Scoping is an important part of the EIA process to ensure that all the environmental issues that could involve significant impacts are identified and appropriate methods for information collection and impact assessment are devised. Scoping involves the following key stages:

- Preliminary appraisal of the predicted likely effects of the proposals from a list of environmental issues derived from the EIA Regulations
- Preliminary investigations to inform the scoping report which accompanied a request to Penwith District Council (PDC) for a Scoping Opinion
- Receipt from PDC of their formal scoping opinion based on their consultation with Cornwall County Council, Environmental Agency, English Heritage and Natural England
- Direct consultation by the EIA team with a range of statutory and non-statutory organisations during the EIA Scoping and ES preparation processes

Annex 1A contains the scoping response that was received from Penwith District Council and responses from the other statutory consultees (Cornwall County Council, RSPB and Natural England).

Through the scoping process, the development proposal was found to potentially have significant environmental impacts on the following environmental topics and thus required detailed assessment:

- Noise
- Landscape and Visual
- Transport and Access
- Waste
- Archaeology and Cultural Heritage
- Air Quality
- Ecology
- Water Resources
- Ground Conditions and Geology
- Socio-economic
- Energy

Each of the above environmental topics is dealt with under a separate chapter in the ES which has been prepared by a specialist in that field. Table 1-1 details the qualifications of each of the chapter authors.

Chapter	Lead Author and Company	Qualifications/experience
Noise and Vibration	Ian Thompson (Buro Happold)	MSc MIOA 25 years experience across a range of acoustic consultancy activities.
Landscape and Visual	David Wesselingh (LDA Design ltd)	BA (Hons) Landscape Architecture (1st class), 2004, Diploma in Landscape Architecture (Distinction), 2006
Transport and Access	Gerry Prodohl (Buro Happold)	BSc, MIHT 27 years experience in highways engineering and transportation planning.
Waste	James Hobson (Buro Happold)	BSc (Hons), Chartered Waste Manager Over six years in environmental consultancy and waste management.
Archaeology and Cultural Heritage	Steve Little (Steve Little Research)	B.A. (Hons] Nine year consultancy in Industrial Archaeology after many years experience in the voluntary sector.
Air Quality	Stephanie Davis (Buro Happold)	B.Eng (Chem) McGill University, Environmental Regulation of Industry (IPPC), IChemE short course, University of Manchester. Three years experience within environmental consultancy
Ecology	Ruth Chambers (The Environment Practice)	MSc Conservation; Member of Institute of Ecology & Environmental Management (MIEEM); Chartered Environmentalist. 18 years experience in ecological impact assessment (EcIA).
	Dr Phil Smith	BSc Chemistry and Environmental Science; PhD in Estuarine Ecology; Chartered Chemist; Chartered

Chapter	Lead Author and Company	Qualifications/experience
	(Aquatonics)	Environmentalist. 25 years experience in estuarine ecology and EcIA.
	Nick Cutts (Hull University)	Deputy Director of the Institute of Estuarine & Coastal Studies (IECS), University of Hull. 20 years experience in ornithological research on estuarine waterfowl communities, including Environmental Statements for port developments, sub-sea pipelines, oil and gas exploration.
	Catriona Neil (Spalding Associates)	Member of Institute of Ecology & Environmental Management (MIEEM); Chartered Environmentalist; Over 10 years experience in coastal ecology and EcIA.
Water Resources	Chris Rose (Buro Happold)	BSc MSc MCIWEM CEnv CSci 12 years experience working in water sector
Ground Conditions	Simon Pilkington (Buro Happold)	BSc (Hons) – Environmental Science, MSc (Distinction) – Water & Environmental Engineering 4 years experience in geoenvironmental engineering.
Socio-economics	John Forsyth (Roger Tym and Partners)	Bachelor of Engineering (Civil Engineering, Hons 2.1), MCD (Master of Civic Design: Urban & Regional Planning), MSc (Sociology & Politics), Member of Royal Town Planning Institute 30 years of experience in town planning, development and regeneration initiatives, including work in local authority, higher education, and consultancy environments.

Chapter	Lead Author and Company	Qualifications/experience
Energy	Dr Robert Cooke (Buro Happold)	BEng (Hons) Mechanical Engineering, MSc Energy Systems and Thermal Processes, EngD Environmental Technology 8 years experience in environmental and sustainable engineering

Table 1—1: Author qualifications

1.4 Baseline

Baseline studies describe the current condition (and where appropriate the predicted future 'without development' or 'do nothing' scenario) of those elements of the environment which are likely to be significantly affected by the proposed development. The future baseline considers aspects such as other consented developments and natural processes. The description of baseline conditions includes an assessment of the importance and sensitivity of identified receptors, making reference to relevant designations and standards.

Assessment of baseline conditions can include both an assessment of existing data as well as specifically commissioned studies. Results of consultations undertaken are also described in this section.

Details of methods used to collect baseline data for each specific environmental topic are described in the appropriate chapters within the ES. In general, baseline data collection involves a combination of desk-based study to collate existing data, consultation with relevant bodies, field survey and where appropriate modelling/predictions of possible future baseline scenarios.

1.5 Impact assessment

Impact assessment is the assessment of the significance of the changes that are predicted to take place to the existing condition of the environment as a result of the proposed development. Ie it is the comparison of the 'with development' conditions against the baseline conditions.

Impact assessment in the ES chapters separates impacts into:

- Construction/demolition impacts
- Operation impacts

Environmental impact assessment generally involves the following key steps:

1. Determination of the value/sensitivity of the environmental features and resources (receptors) affected
2. Assessment of the impacts affecting these receptors with reference to relevant thresholds and criteria
3. Quantification of the extent, magnitude, duration, timing and frequency of the impacts
4. Assessment of the impact's reversibility
5. Explanation of the level of confidence in these predictions
6. Identification likely significant impacts in the absence of any mitigation

Assessment of impacts included consideration of the following:

- Direct, indirect and secondary impacts
- Cumulative impacts
- Short, medium and long term impacts
- Permanent and temporary impacts
- Positive and negative impacts

The following terms were used when referring to impact significance:

- Major (adverse or beneficial)
- Moderate (adverse or beneficial)
- Minor (adverse or beneficial)
- Negligible

Topics of moderate significance or higher were considered necessary of consideration of mitigation, although in some cases mitigation was proposed for impacts of minor significance.

Each environmental topic has its own specific impact assessment method and these are described in detail in each topic chapter. Impact assessment methods are based on standards or codes of practice, consideration of the EIA Regulations, expert judgement, and the advice and views of other agencies and organisations.

1.5.1 Cumulative impact

Each chapter also considered cumulative impacts as part of their assessment. The EIA regulations state that:

"the characteristics of development must be considered having regard, in particular, to…(b) the cumulation with other development"

"description of the likely significant effects of the development on the environment, which should cover…cumulative…effects"

The cumulative effects of an action are viewed as the total effects on a resource, ecosystem, or human community of that action and all other activities affecting that resource no matter what entity is taking the action. Cumulative impacts were classified as follows:

- Additive
- Interactive
- Sequential
- Multiple
- Synergistic
- Threshold exceedance

Cumulative impacts that were considered were those that arise from:

- Interactions between different effects at the same location/on same receptor/resource
- Interaction of different effects over time
- Additive or multiple impacts over time or space
- Effects of a number of developments

The following developments have been identified as relevant for consideration in the assessment of cumulative impacts:

- Foundry Square – Improvement works to the public realm around foundry square including making the area more pedestrian friendly and making changes to junctions. Largely completed
- Waterside walkway – The proposed walkway seeks to provide a pedestrian link along the south side of Copperhouse Pool, following the old canal towpath as far as practicable. The aim is to form part of a circular route around all sides of the Copperhouse Pool, and to strengthen links between the Towans, beaches, public transport, shops and homes. At time of writing Penwith District Council had not secured funding for this proposal

- Wave Hub –Proposal by SWRDA to bring ashore at Hayle renewable power generated by a range of wave energy generation technologies
- A30 Hayle Retail park - Recently completed and largely occupied. Approx. 180 jobs created
- St Erth Park & Ride – Proposal to create a bus and rail park and ride at St Erth Railway station
- Loggins Mill – Creation of new employment space within a Grade 2 listed mill

1.6 Mitigation

Mitigation measures were proposed for significant adverse impacts (moderate or higher) identified as resulting from the development proposal.

Mitigation measures were explored using the following hierarchy:

1. avoid
2. reduce
3. repair
4. compensate

In addition to the above, enhancement measures were considered, wherever possible, even where no adverse impacts were identified.

Mitigation measures for specific impacts are described in detail under each topic chapter.

1.7 Residual impacts

After the mitigation strategies had been fully devised and their likely success considered, residual impacts were assessed. Assessment of residual impacts included consideration of the consequences of significant residual impacts in light of planning policies and legislation.

1.8 Monitoring

Monitoring is undertaken for two reasons:

- Compliance monitoring – to ensure commitment to mitigation or predictions
- Effects monitoring – to correct unforeseen negative effects of development

Monitoring proposals are described in the ES in each topic chapter.

1.9 Consultation

Formal and informal consultation has been undertaken over a number of years prior to the application including throughout the EIA process, and has involved the statutory and non-statutory consultees. Consultees included Cornwall County Council, Penwith District Council, Hayle Town Council, Environment Agency, Natural England, English Heritage, the Highways Agency and RSPB. Other consultees included SWRDA (South West Regional Development Agency), MCTi (Markets and Country Towns initiative), GOSW (Government Office South West), CPR Regeneration, Save our Sands, Hayle Harbour Users Association, Fishermen's Groups, and Hayle Harbour Support Group. Details of the results of these consultations are reported in the individual topic chapters.