2. EIA Methodology

Appendix 2.1

EIA SCOPING REPORT

ENVIRONMENTAL IMPACT ASSESSMENT

SCOPING REPORT

Request for a scoping opinion for

Everton FC Stadium

Bramley-Moore Dock

Liverpool L3 0AP

15 May 2017

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CONTENTS

INTRODUCTION

APPENDICES

1 INTRODUCTION

1.1 OVERVIEW

Everton Football Club (EFC) (hereafter, 'the Applicant') are seeking to relocate from Goodison Park, Goodison Rd, Liverpool L4 4EL to a proposed new stadium at Bramley-Moore Dock (BMD), Regent Road, Liverpool L3 0AP, within the administrative area of Liverpool City Council (LCC) (hereafter, 'the application site'). The location of the site is shown in Figure 1, Appendix A.

This Environmental Impact Assessment (EIA) scoping report has been prepared by CBRE on behalf of the Applicant to set out the scope of the EIA and associated Environmental Statement (ES) to support a detailed planning application for the development of the application site. It brings together the results of early consultations and desk based assessments already undertaken which have helped to establish the scope and methodology that will be applied to the EIA.

The Applicant is currently undertaking a pre-application masterplanning process for the application site. The objectives of this report are to accompany a formal request to LCC for an EIA Scoping Opinion and also to facilitate wider consultation with stakeholders likely to have an interest in the development proposals. The report therefore outlines:

- some of the key considerations of the EIA process and the approach that will be adopted for the EIA in light of the existing knowledge of the application site and Applicant's development proposals;
- the additional information which is to be collected to characterise the baseline environment of the application site;
- the potential environmental impacts and likely effects anticipated at this stage;
- the methods for predicting and assessing the scale of effect and the likely significance of each anticipated effect;
- the opportunities for mitigation of identified effects;
- the environmental issues that are considered unlikely to give rise to significant environmental effects; and
- pathways for further consultation with the local planning authority, and other relevant bodies on the environmental issues to be addressed as part of the design and EIA process.

A full ES will accompany the detailed planning application which is to be submitted in due course for the development of the application site

Bramley-Moore Dock

Presently, BMD predominantly comprises a dock waterbody, surrounded by a Grade II Listed dock retaining wall (Ref. 1072980) and hardstanding. There are several brick buildings on the site in various states of disrepair, the most notable of which is the Hydraulic Engine House, which is Grade II Listed (Ref. 1072981). There is also a large warehouse building along the southern dock edge that currently houses a packaging supply company.

The application site is currently operational and is used for the storage and distribution of sand in addition to other warehouse storage and distribution activities. The dock itself is also used as a mooring point for tugboats and other vessels.

The dock is separated from Regent Road to the east by a substantial Grade II Listed dock wall with two turreted entrances to the north-eastern and south-eastern corners of the site (Ref. 1072979).

BMD lies within the United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site (WHS) Liverpool – Maritime Mercantile City (LMMC) designation (Ref. 1000104) and the Stanley Dock Conservation Area.

INTRODUCTION

The application site and the adjacent docks to the south (e.g. Nelson Dock) also sit within the approved Liverpool Waters outline planning permission (Planning Ref: 10O/2424), further details of which are contained in Section 3.4 of this report.

Further information on historic and current uses of BMD is contained in Section 2 of this report.

Adjacent Sites and Land Uses

To the north of BMD is Wellington Dock, which has been infilled and houses the United Utilities Wastewater Treatment Works (UU WwTW), whilst to the northwest lies Sandon Half-tide Dock, which remains connected to BMD via a pair of dock gates.

To the east of BMD, on the opposite side of Regent Road, lies a timber retailer, tyre retailer, and offices/residential uses. There is a public house, The Bramley Moore, across Regent Road from the southeast corner of the site.

To the south lies Nelson Dock, the connective dock gate to which is sealed with hydraulic connectivity potentially maintained via pipeworks/sluice gates. As previously stated, the application site and the adjacent docks to the south (e.g. Nelson Dock) also sit within the approved Liverpool Waters outline planning permission (Planning Ref: 10O/2424), further details of which are contained in Section 3.4 of this report.

To the west lies the River Mersey, beyond which is a mix of uses, predominantly residential dwellings fronting the river bank.

Baseline Conditions

The baseline for the EIA will be taken as the application site and its immediate surrounds.

The Proposed Development

The proposed development comprises the demolition of: non-listed structures, potential part-demolition of listed structures and potential infill/part infill of the listed dock; and the construction of: a new stadium of up to 60,000 seats (Class D2) with retail (including food and beverage) (Class A1 and/or A3 and/or A4 and/or A5), museum (Class D1) and ancillary offices (Class B1); betting shop (sui generis) together with associated facilities including an external concourse/fan zone, vehicular and pedestrian circulation areas, up to 900 car parking spaces, footways, and associated public realm improvements. The proposed development is described further in Section 2.

Consultation

The proposed consultees to the EIA scoping process are listed at Section 7.2.

In addition, as part of the pre-application design and planning process, the Applicant will continue to engage in a programme of consultation with local stakeholders which provides for meetings with LCC and other statutory consultees, correspondence and meetings with political representatives as well as local groups and organisations, public exhibition, media briefings, a dedicated website, and a single point of contact for enquiries.

1.2 ENVIRONMENTAL IMPACT ASSESSMENT

The Purpose of Environmental Impact Assessment

Environmental Impact Assessment (EIA) is a formal process for ensuring that the likely significant effects of a new development on its surrounding environment are fully identified and taken into account before that development is allowed to proceed.

INTRODUCTION

The Department of Communities & Local Government's Planning Practice Guidance [1] states that the purpose of EIA is:

"to protect the environment by ensuring that a local planning authority when deciding whether to grant planning permission for a project, which is likely to have significant effects on the environment, does so in the full knowledge of the likely significant effects, and takes this into account in the decision making process".

The Development in the Context of the EIA Regulations 2011

Town and Country Planning

The proposed development is not Schedule 1 development, for which EIA would be mandatory; it is however of a type listed within the descriptions of development contained within Schedule 2, falling under category 10(b) urban development projects (including the construction of shopping centres and car parks, sports stadiums, leisure centres and multiplex cinemas).

A development is considered to be Schedule 2 development if any part of it lies within a 'sensitive area' or if it meets or exceeds the relevant thresholds and criteria for that category of development, as detailed in the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 (as amended) (herein the "EIA Regulations 2011"). For category 10(b) projects, these are as follows:

(i) The development includes more than 1 hectare of urban development which is not dwelling-house development; or

(ii) the development includes more than 150 dwellings; or

(iii) the overall area of the development exceeds 5 hectares.

BMD lies within a 'sensitive area', forming part of the LMMC WHS designation. This is defined within Section (2) 1 of the Regulations 2011 to include "*a property appearing on the World Heritage List kept under article 11(2) of the 1972 UNESCO Convention for the Protection of the World Cultural and Natural Heritage*".

In addition, the proposed development exceeds the 1 hectare of urban development which is not dwelling-house development threshold, as well as the 5 hectare overall area of development threshold. The proposed development is therefore considered to be Schedule 2 development. Schedule 2 developments are considered to be 'EIA development' where they are likely to have significant effects on the environment by virtue of factors such as their nature, size and location.

In the interests of undertaking a robust assessment of the likely significant environmental effects of the proposed development, the applicant intends to voluntarily submit an Environmental Statement (ES) to Liverpool City Council (LCC) in conjunction with the proposed planning application.

Marine Works

Consent for the terrestrial and marine aspects of a scheme must be sought from separate regulatory bodies, namely the local planning authority and the Marine Management Organisation (MMO), respectively.

The proposed development, as currently envisaged, will require consideration by the MMO as a result of the marine elements, which include the infilling/partial infilling of BMD and, potentially, the need to construct temporary berthing on the River Mersey for the delivery of materials.

The procedures for undertaking EIA for a development in the marine environment are set out within the Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended).

A Coastal Concordat has been implemented to provide a framework within which the separate processes for consenting a scheme, in particular

INTRODUCTION

statutory consultation, can be better coordinated and the lead coordinating authority identified.

It has been agreed with LCC that, as the vast majority of the development is on-shore, they will work to the principles of the Coastal Concordat and take the role of lead authority, coordinating a single scoping response.

Scoping

Scoping is an important, though optional exercise undertaken throughout the early stages of the EIA process. Its purpose is to focus the EIA and resultant ES on key issues and avoid the unnecessary examination of minor issues.

This report is a request for a scoping opinion submitted under Regulation 13(1) of the EIA Regulations 2011.

In accordance with Regulation 13(2), this request is accompanied by:

- A plan sufficient to identify the land; and
- A brief description of the nature and purpose of the development and of its possible effects on the environment.

In accordance with best practice, the opportunity to include additional information, beyond the minimum requirements of the EIA Regulations 2011, has been taken to provide LCC, statutory consultees and other stakeholders with a better understanding of the proposed approach that will be taken to the EIA process, the various technical assessments being undertaken and the intended structure of the ES.

Scoping is an ongoing process with consultation undertaken by the local authority with the relevant statutory bodies and other stakeholders regarding the content of this scoping report. A scoping opinion will be provided by the local authority at the end of a five week period. During this time, the applicant and technical team will continue to undertake consultation with all relevant statutory consultees and local stakeholders to ensure that the scoping opinion is based on the most recent discussions and any relevant environmental assessments.

Forthcoming Changes to the EIA Regulations

This request for a scoping opinion is submitted under the EIA Regulations 2011 [2] [3]. The 2011 regulations are the relevant environmental impact regulations against which the proposed development is to be assessed.

The EIA Regulations 2011 are due to be replaced by the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 ("EIA Regulations 2017") on the 16 May 2017 [4]. The EIA Regulations 2017 contain transitional provisions under Regulation 76 stating that where a request for a scoping opinion has been submitted prior to 16th May 2017, the EIA Regulations 2011 continue to apply and continue to form the basis for LCC's decision on the Applicant's planning application.

Whilst it is beneficial for any future application(s) to be determined under the EIA Regulations 2011, where the regulatory framework and case law is already well established, the Applicant (Everton FC) is committed to meeting the spirit and technical requirements of the EIA Regulations 2017. This request for a scoping opinion therefore includes consideration of likely significant impacts on climate change, biodiversity, land, human health and major accidents and disasters. The ES will address the main alternatives and the reasonable alternatives considered by the Applicant.

Requirements of an Environmental Statement

Regulation 2(1) of the EIA Regulations 2011 defines an ES as a statement:

"that includes such of the information referred to in Part I of Schedule 4 as is reasonably required to assess the environmental effects of the development and which the applicant can, having regard in particular to current knowledge and methods of assessment, reasonably be required to

INTRODUCTION

compile, but that includes at least the information referred to in Part II of Schedule 4."

Schedule 4 Parts I and II are replicated in Table 1 for the EIA Regulations 2011 and for the EIA Regulations 2017.

Table 1

Specified Information within Schedule 4 of the EIA Regulations 2011 (Parts 1 and 2) & 2017 (Consolidated)

EIA REGULATIONS 2011 [REGULATION 2(1)]		EIA REGULATIONS 2017 [REGULATION 18(3)]	
SCHEDULE 4: PART I		SCHEDULE 4: PARTS I & II (NOW CONSOLIDATED)	
1.	Description of development, including in particular:	1.	Description of the development, including in particular:
a.	a description of the physical characteristics of the whole development and the land-use requirements during the construction and operational phases.	a.	a description of the location of the development;
b.	a description of the main characteristics of the production processes, for instance, nature and quantity of materials used.	b.	a description of the physical characteristics of the whole development, including, where relevant, requisite demolition works, and the land-use requirements during the construction and operational phases;
c.	an estimate, by type and quantity, of expected residues and emissions (water, air and soil pollution, noise, vibration, light, heat, radiation, etc.) resulting from the operation of the proposed development.	c.	a description of the main characteristics of the operational phase of the development (in particular any production process), for instance, energy demand and energy used, nature and quantity of the materials and natural resources (including water, land, soil and biodiversity) used;
-	-	d.	an estimate, by type and quantity, of expected residues and emissions (such as water, air, soil and subsoil pollution, noise, vibration, light, heat, radiation and quantities and types of waste produced during the construction and operation phases.
2.	An outline of the main alternatives studied by the applicant or appellant and an indication of the main reasons for his choice, taking into account the environmental effects.	2.	A description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.
3.	A description of the aspects of the environment likely to be significantly affected by the development, including, in particular, population, fauna, flora, soil, water, air, climatic factors, material assets, including the architectural and archaeological heritage, landscape and the	3.	A description of the relevant aspects of the current state of the environment (baseline scenario) and an outline of the likely evolution thereof without implementation of the development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of

INTRODUCTION

EIA REGULATIONS 2011 [REGULATION 2(1)]		EIA REGULATIONS 2017 [REGULATION 18(3)]	
	interrelationship between the above factors.		the availability of environmental information and scientific knowledge.
4.	A description of the likely significant effects of the development on the environment, which should cover the direct effects and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects of the development, resulting from: (a) the existence of the development; (b) the use of natural resources; (c) the emission of pollutants, the creation of nuisances and the elimination of waste, and the description by the applicant of the forecasting methods used to assess the effects on the environment.	4.	A description of the factors specified in Regulation 4(2) likely to be significantly affected by the development: population, human health, biodiversity (for example fauna and flora), land (for example land take), soil (for example organic matter, erosion, compaction, sealing), water (for example hydromorphological changes, quantity and quality), air, climate (for example greenhouse gas emissions, impacts relevant to adaptation), material assets, cultural heritage, including architectural and archaeological aspects, and landscape.
5.	A description of the measures envisaged to prevent, reduce and where possible offset any significant adverse effects on the environment.	5.	A description of the likely significant effects of the development on the environment resulting from, inter alia:
6.	A non-technical summary of the information provided under paragraphs 1 to 5 of this Part.	a.	the construction and existence of the development, including, where relevant, demolition works;
7.	An indication of any difficulties (technical deficiencies or lack of know-how) encountered by the applicant in compiling the required information.	b.	the use of natural resources, in particular land, soil, water and biodiversity, considering as far as possible the sustainable availability of these resources;
	PART II	c.	the emission of pollutants, noise, vibration, light, heat and radiation, the creation of nuisances, and the disposal and recovery of waste;
1.	A description of the development comprising information on the site design and size of the development.	d.	the risks to human health, cultural heritage or the environment (for example due to accidents or disasters);
2.	A description of the measures envisaged in order to avoid, reduce and, if possible, remedy significant adverse effects.	e.	the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources;
3.	The data required to identify and assess the main effects which the development is likely to have on the environment.	f.	the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change;

INTRODUCTION

EIA REGULATIONS 2011 [REGULATION 2(1)]	EIA REGULATIONS 2017 [REGULATION 18(3)]
4. An outline of the main alternatives studied by the applicant or appellant and an indication of the main reasons for his choice, taking into account the environmental effects.	g. the technologies and the substances used.
	The description of the likely significant effects on the factors specified in Regulation 4(2) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development. This description should take into account the relevant environmental protection objectives established at the national level.
5. A non-technical summary of the information provided under paragraphs 1 to 4 of this Part.	6. A description of the forecasting methods or evidence, used to identify and assess the significant effects on the environment, including details of difficulties (for example technical deficiencies or lack of knowledge) encountered compiling the required information and the main uncertainties involved.
	7. A description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements (for example the preparation of a post-project analysis). That description should explain the extent, to which significant adverse effects on the environment are avoided, prevented, reduced or offset, and should cover both the construction and operational phases.
	8. A description of the expected significant adverse effects of the development on the environment deriving from the vulnerability of the development to risks of major accidents and/or disasters which are relevant to the project concerned. Relevant information available and obtained through risk assessments. Where appropriate, this description should include measures envisaged to prevent or mitigate the significant adverse effects of such events on the environment and details of the preparedness for and proposed response to such emergencies.
	9. A non-technical summary of the information provided under paragraphs 1 to 8.
	10. A reference list detailing the sources used for the descriptions and assessments included in the environmental statement.

INTRODUCTION

1.3 STANDALONE ENVIRONMENTAL ASSESSMENTS

Water Framework Directive Assessment

A Water Framework Directive (WFD) assessment is required to demonstrate whether the proposed development would compromise objectives for the status of waterbodies to be maintained and/or improved.

A WFD assessment will be prepared to inform consultation with the Environment Agency (EA) and Marine Management Organisation (MMO), and determine whether the proposed development (with mitigation) will affect the achievement of the WFD objectives relevant to the application site.

Consequently, a standalone WFD assessment will be submitted as part of the planning application to enable the EA and MMO to consider the proposed development in such context.

In addition, as the WFD assessment will consider the hydromorphology, geomorphology and ecology of a river and its surrounding landscape to establish its quality status, the WFD Assessment will also be referred to by the Water Environment & Flood Risk ES chapter and also appended to that chapter.

Habitat Regulations Assessment Screening Report

A Habitat Regulations Assessment (HRA) Screening Report will be prepared to support decision making by the competent authority under Regulation 61 of the Conservation of Habitats and Species Regulations 2010 (as amended) [5] (the "Habitat Regulations") to confirm whether the proposed development is likely to have a significant effect on a European site (either alone or in combination with other plans or projects) and hence, would require an appropriate assessment under the Regulations. Consequently, an HRA Screening Report will be submitted as a standalone document as part of the planning application.

However, due to its consideration for the potential for significant effects on European sites including the Special Protection Area (SPA), the Special Area of Conservation (SAC), and, the Ramsar designation in proximity to the application site (as set out in Section 3.3 of this report); the Ecology ES chapter will also refer to the contents of the HRA Screening Report and it will also be appended to that chapter.

1.4 STRUCTURE OF THIS REPORT

The remainder of this report is structured as follows:

- Section 1: Introduction to this report;
- Section 2: Overview of the proposed development;
- Section 3: The proposed approach to the EIA Methodology;
- Section 4: An overview of the proposed EIA Technical Chapters;
- Section 5: Those topics proposed to be 'scoped down' within the ES;
- Section 6: Those topics proposed to be 'scoped in' for inclusion as main technical chapters within the ES;
- Section 7: Summary and conclusions;
- Section 8: Works cited.

2 OVERVIEW OF THE PROPOSED DEVELOPMENT

2.1 SITE DESCRIPTION

The application site comprises Bramley-Moore Dock (BMD), within the Port of Liverpool on the River Mersey (centred on National Grid Reference (NGR) SJ3345292491), as shown on Figure 1, Appendix A.

History of Bramley-Moore Dock

The complex of docks comprising Salisbury, Collingwood, Stanley, Nelson and Bramley-Moore were designed by Jesse Hartley who was Dock Engineer from 1824 to his death in 1860. These five docks represented the culmination of Hartley's development of dock design in Liverpool.

BMD was named after John Bramley-Moore, the Chairman of the Dock Committee and Mayor of Liverpool, who had made his fortune trading with Brazil. At circa four hectares in area, it is the largest of a group of five docks - including Salisbury, Collingwood, Stanley and Nelson - that were opened in August 1848. Together with Nelson Dock, BMD was intended to take the largest steamships of the day.

The entrance gates and passage gates were 60 ft wide and enabled bigger ships to enter than the 50ft entrance at Clarence Dock. But it was not long before even these entrances proved inadequate, as the size of ships continued to grow and it became home to the coal export and bunkering service. Sheds were not built at BMD until 1856, the same year that a high-level coal railway was constructed by the Lancashire and Yorkshire Railway Company, along which wagon loads ran and dumped coal directly into ships. There was great demand for the fast loading of bunker coal and in 1882, after much wrangling, night-time loading was started, floodlit by gas lights. The dock was used almost exclusively for coal until 1966, although some Mediterranean trades did use the south quay.

Since the earliest available map (1851) the site has been in much the same configuration as exists today, save for sheds along the north and west wharves and rail tracks along the east wharf. By 1890 the northern shed had been replaced with further train tracks. On the 1907 map, these tracks were labelled as being part of a high-level coal railway and included several cranes around the dock edge. Little changed on site until 1967 when the rail tracks on the north wharf were scaled back and a small structure of unknown use was constructed in the northwest corner, adjacent to the gate to the Sandon Half-tide Dock to the north.

By 1973, the tracks on the north wharf had been almost fully removed and another long structure put up in their place, the central portion of which had been demolished by 1982. The dock closed in 1988. The west wharf structure was removed by 2002.

Planning permission and associated listed building consent (LCC ref. 12F/0845) was granted to United Utilities in May 2012 for the following:

'To carry out works in connection with re-opening of existing entrance to Bramley Moore Dock, demolish brickwork and replace with palisade fencing/gate'.

This permission is granted for a limited period which expired on 30 June 2017 and at the expiration of this period, the applicant was required to replace the palisade gates with replica timber gates (design and construction details of which agreed with the City Council, as Local Planning Authority, prior to their installation).

The approval was justified on the basis that the proposed works to the listed structure would protect the historic integrity of the site and the introduction of gates would enable the safe passage of construction vehicles during the period of construction of the adjacent water treatment works.

OVERVIEW OF THE PROPOSED DEVELOPMENT

Current Use of Bramley-Moore Dock

BMD is currently accessed through two gated openings in the dock wall from Regent Road, at the southeast and northeast corners of the site. These accesses allow vehicular and pedestrian access. It predominantly comprises a dock waterbody, surrounded by a Grade II Listed dock retaining wall (Ref. 1072980) and hardstanding.

The retaining walls of the dock are authentic to the time of their construction or reconstruction and many original ground surfaces and ancillary structures and objects survive in situ around the docks. The eastern end of BMD is splayed, following the dock road, to maximise waterspace and is bounded to the east by the granite boundary wall with turreted double gate entrances, a flanking pair of round towers and a larger central tower incorporating a watchman's hut.

The Hydraulic Engine House, built in 1884, is Grade II Listed (Ref. 1072981) and is situated in the northeast corner of the site. It was used for providing hydraulic power to operate the dock gates. A two-storey brick structure sits at the western end of the north wharf and a shed structure sits on the southern wharf.

The passage between BMD and Nelson Dock has been filled with an isolation structure. The dock comprises hard-standing to the perimeter of the dock water body and existing surface water drainage discharges into the River Mersey.

BMD lies within the UNESCO WHS Liverpool – Maritime Mercantile City (LMMC) designation (Ref. 1000104) and the Stanley Dock Conservation Area.

Adjacent Sites and Current Land Uses

To the north of BMD is Wellington Dock, which has been infilled and houses the United Utilities Wastewater Treatment Works (UU WwTW) (Planning Ref: 11F/1581), whilst to the northwest lies Sandon Half-tide Dock, which remains connected to BMD via a pair of dock gates.

To the east of BMD, on the opposite side of Regent Road, lies a timber retailer, tyre retailer, and offices/residential uses. There is a public house, The Bramley Moore, across Regent Road from the southeast corner of the site.

To the south lies Nelson Dock, the connective dock gate to which is sealed with hydraulic connectivity potentially maintain via pipeworks/sluicegates.

To the west lies the River Mersey, beyond which is a mix of uses, predominantly residential dwellings fronting the river bank within the Wirral.

2.2 THE PROPOSED DEVELOPMENT

The Need for the Development

Goodison Park has been home to Everton Football Club for 124 years, since opening in 1892. It remains one of the oldest purpose-built football grounds. Goodison Park has a capacity for 39,150 maximum capacity stadium (with further reductions anticipated). It not only falls behind the stadiums of many similar clubs in terms of ground capacity, but also in terms of the quality of its facilities.

The challenges of Goodison Park have long been recognised. Its age, size and configuration restrict commercial growth and the Club has regularly explored the potential of developing and extending existing stands on the same footprint. However, current legislation and fan expectations would result in a significant reduction in capacity. Therefore, the Club has recognised that a new stadium with increased capacity will require a move from the existing ground at Goodison Park.

OVERVIEW OF THE PROPOSED DEVELOPMENT

This vision is not a new one, and indeed EFC has been looking for an alternative site for some time with initial discussions about the limitations of Goodison and the need to consider a move dating back to before 2001.

The challenges of Goodison Park have long been recognised. Its age, size and configuration restrict commercial growth and EFC has regularly explored the potential of developing and extending existing stands on the same footprint. Current legislation and fan expectations would, however, result in a significant reduction in capacity.

The only option, therefore, is for the club to move away from Goodison Park. EFC has been looking for alternative sites for some time, initial discussions having started in 2001. BMD provides an opportunity to meet the future needs of the club and its supporters, without moving far from its roots in the local community.

Description of Development

The proposed development comprises the demolition of: non-listed structures, potential part-demolition of listed structures and potential infill/part infill of the listed dock; and the construction of: a new stadium of up to 60,000 seats (Class D2) with retail (including food and beverage) (Class A1 and/or A3 and/or A4 and/or A5), museum (Class D1) and ancillary offices (Class B1); betting shop (sui generis) together with associated facilities including an external concourse/fan zone, vehicular and pedestrian circulation areas, up to 900 car parking spaces, footways, and associated public realm improvements.

Initial Scheme Parameters

As the design of the stadium and surrounds has only just commenced following the Club agreeing to acquire the BMD site, maximum parameters have been set to inform the assessment methodologies for the purposes of the EIA and resultant ES. These include:

- Red line boundary (Figure 2, Appendix A), covering an area of 23.84 ha which extends beyond the main BMD site to provide tolerances for temporary construction activities, such as the potential for a crane platform within Nelson Dock, or berthing within the River Mersey, also shown is the site development boundary (excluding the temporary construction land-take) this encompasses 8.84 ha;
- Site preparation and enabling works, including works to the listed and non-listed (e.g. demolition of the warehouse on the quayside) structures;
- Maximum height of structures of up to 66 metres above ordnance datum (mAOD); and
- Access (both pedestrian and vehicular) will be from Regent Road.

The red line boundary shown on the figures may be subject to further refinement as the proposals evolve; however, it is anticipated that any changes would result in a decrease in the overall site area currently shown.

Other Events

In addition to its operation for the purposes of Everton FC (Association Football), the stadium may also host other events, such as sporting events and concerts. The operation of the stadium for such events will be subject to appropriate controls e.g. in relation to amplified sound.

Off-site Works

Until the design has progressed further, it is not known exactly what off-site (associated development) works may be required to facilitate the development, though such works may comprise:

- Park and ride facilities;
- Highways works; and

OVERVIEW OF THE PROPOSED DEVELOPMENT

- Improvement works to infrastructure, including utilities.

Such works will be discussed with LCC and the appropriate statutory and non-statutory consultees to ensure that they have been adequately assessed within the EIA and planning application.

Form of Application

The application will be for full planning permission.

Likely Method of Construction

The exact construction methodology has not been determined at this time; however, it is anticipated that there will be many similarities with the works undertaken on the adjacent Wellington Dock for UU WwTW (Planning Ref: 11F/1581). The anticipated sequence of construction is described below:

Demolition and Site Clearance

The construction works will commence with site clearance, including demolition of all existing buildings, with the exception of the listed Hydraulic Engine House, which is to be retained. The listed dock retaining walls are proposed to be retained but would be subject to full or partial infill, and the Dock Wall abutting Regent's Road would be potentially subject to works including the creation of new entrances, as required.

Dock Clearance

BMD will be investigated and raked as necessary prior to dredging and filling activities allowing any submerged debris to be recovered and appropriately disposed of. It is envisaged that there will be underground obstructions from previous structures and objects having been dumped in the dock.

Dredging

Before infilling of the dock, a ground investigation will establish the nature and approximate extent of silt/soft sediment that is required to be dredged from the bottom of the dock. Geotechnical and geoenvironmental testing of the silt or soft material will be undertaken to confirm the level of contamination for disposal classification to be determined. The dredging will be undertaken using a trailing suction hopper dredger or similar.

Boundary Closure

A closure structure (cofferdam) will then be installed between BMD and the adjacent Sandon Half-Tide Dock to disconnect it from the other parts of the dock network. Works to strengthen the existing closure structure at the southern entrance to BMD will be undertaken if required. The option to retain a water channel within the western portion of BMD is under consideration. If adopted, this will require the construction of a new dock wall (diaphragm wall or equivalent) across the width of BMD, approximately 120m, behind which the infilling will take place.

Dock Infill

It is envisaged that the dock will be infilled using marine-won material (e.g. sand), transported to the site by dredger. Due to vessel draft constraints, it is anticipated that the dredger will be moored within deeper water and the material pumped to BMD by pipeline (as for the UU WwTW). As the basin is progressively filled the dock water will be displaced or pumped back to the dock network or to the River Mersey, depending on its suitability and discharge consents obtained. The sand will be placed in accordance with an engineering specification, which will include in situ testing of the placed material. Filling operations will continue until the new infill level reaches near to the top of the existing dock wall. Dewatering and ground improvement measures will be undertaken as required, followed by further land-raising to the level required for flood protection. Efforts will be made

OVERVIEW OF THE PROPOSED DEVELOPMENT

to learn lessons from the UU WwTW project and benefit from the experience gained.

Stadium Substructure

The stadium foundations will then be constructed by piling or ground improvement within the footprint of the infilled basin and surrounding dockside areas. Piles will be designed and located to avoid impacting on the existing dock wall structures.

Stadium Superstructure

It is anticipated that the stadium superstructure will be formed of generally conventional structural materials of steel, reinforced concrete and pre-cast concrete for the terrace units. The roof structure will be formed of steel. Components will be fabricated or manufactured to maximum transportable lengths to minimise numbers of components and numbers of assemblies on site. Façade materials are again anticipated to be reasonably conventional and to be installed and constructed in conventional ways. Installation of many construction elements will be facilitated through a number of tower cranes in a conventional manner. It is anticipated that the construction materials, site waste and spoil/arisings will be transported to and from site by a combination of road and barge. Geoenvironmental testing of spoil/arisings will be undertaken to confirm the level of contamination for disposal classification to be determined.

Indicative Programme

Subject to ongoing design, consultation and planning approval, it is currently envisaged that enabling works would start on site in summer 2018 and that construction of the new stadium would be completed in March 2021, ahead of the commencement of the 2021/22 season in August 2021.

3 EIA METHODOLOGY

3.1 THE FOCUS OF EIA

EIA is a process that should be focussed on the likely significant environmental effects of a proposed development. It is not intended to be a process to address all of the possible environmental effects.

One of the main criticisms of current EIA practice is that the scope is often drawn too widely, which results in environmental statements which are unnecessarily long and are less useful for their intended purpose, i.e. to act as a decision-making tool.

"At its best, EIA helps to shape the design and siting of development such that social value to communities and broader economic value to investors can both be met, without eroding natural capital and pushing the boundaries of environmental limits – a tool that can truly support moves towards sustainability. However, the many competing demands can often serve to stifle the process, resulting in reams of information that mask the key environmental issues that need to be considered." [5]

This section outlines the proposed scope of the EIA for the redevelopment of the BMD site.

3.2 RELEVANT PLANNING POLICY AND GUIDANCE

The following planning policy and guidance is relevant to the proposed development:

- National Planning Policy Framework (NPPF) (2012) [6];
- Planning Practice Guidance (2014) [1];
- Saved Liverpool Unitary Development Plan: A Plan for Liverpool (2002) [7];
- Liverpool Maritime Mercantile City World Heritage Site Supplementary Planning Document (SPD) (2009) [8];(hereafter, 'the World Heritage Site SPD')
- The Draft Liverpool Local Plan (2016) [9] – this is due for adoption Dec 2017/Jan 2018 and therefore, careful consideration will be given to emerging policies as it progresses;
- Other relevant supplementary planning documents and guidance;
- Institute of Environmental Management and Assessment (IEMA) Guidelines for environmental impact assessment [10].

In addition, consideration will also be given to relevant policy requirements of the adjacent local authorities, including Wirral Council approximately 1.3km distance on the western bank of the River Mersey and Sefton Council approximately 1.5km to the north of the application site.

3.3 RECEPTORS

The following key receptors have been identified in the vicinity of the site. It is proposed that, where relevant, the technical assessments will focus on identifying the effects of the scheme at/on these receptors:

- European-designated Natura 2000 sites located within a 10km radius of the site:
  - Mersey Narrows & North Wirral Foreshore Special Protection Area (SPA) and Ramsar Site (1.19km to the west of the application site);
  - Dee Estuary Special Area of Conservation (SAC) (2.77km to the northwest of the application site);
  - Ribble & Alt Estuaries Special Protection Area (SPA) and Ramsar Site, and Sefton Coast SAC (5.1km to the north-northwest of the application site); and

EIA METHODOLOGY

- Mersey Estuary SPA and Ramsar Site (5.54km to the south of the application site).

- Statutory and non-statutory designated built heritage assets in proximity to the application site, including but not limited to:
  - UNESCO World Heritage Site: Liverpool - Maritime Mercantile City (LMMC) (Ref. 1000104);
  - Listed buildings, including Bramley Moore Dock Retaining Walls Grade II (Ref. 1072980); Hydraulic Engine House at Bramley Moore Dock Grade II (Ref. 1072981); Dock Wall from opposite Sandhills Lane to Collingwood Dock with Entrances Grade II (Ref. 1072979); and
  - Stanley Dock Conservation Area.
- Residential properties and other uses sensitive to noise and air quality impacts in proximity to the application site and local road network, including:
  - properties located along Regent Road, Fulton Street, A5054 Boundary Street, Derby Road, Walter Street, and those properties in Egremont on the Wirral bank of the River Mersey along roads stretching from approximately Caithness Drive to Wright Street; and Mariners Park Care Home;
- Residential properties and other uses, either directly adjacent or in very close proximity to the site, sensitive to daylight, sunlight, overshadowing and/or wind impacts;
- Any previously unrecorded archaeological assets that may be present in the ground beneath the application site;
- Geology beneath the application site likely to comprise Made Ground (Fill), overlying a sequence of natural geological strata of Tidal Flat Deposits over the Chester Pebble Beds Formation;
- Surface water features including:
  - The River Mersey;
  - The dock network, including adjacent Nelson Dock and Sandon Half-tide Dock and
  - The Leeds & Liverpool Canal, which runs from north to south through Stanley Dock and beyond;
- The townscape character of the local urban environment;
- Locations in the local area with open views of the site, including specifically those views of the application site set out within the World Heritage Site SPD ; and
- Sensitive receptors that would be brought to the site under the proposals, including site workers during the construction phase and those using/occupying the stadium and other proposed uses either as staff, football fans, event attendees, or visitors, once operational and other future adjacent residents, commercial occupants, construction workers and visitors associated with the Liverpool Waters permission.

Figure 3 (Appendix A) provides an overview of identified constraints on and around the application site including sensitive receptors that will be considered within the scope of the EIA.

3.4 CUMULATIVE EFFECTS: CONSENTED AND REASONABLY FORESEEABLE SCHEMES

The EIA Regulations 2011 require the consideration of cumulative effects. Good practice guidelines recommend that an EIA should assess the effects

EIA METHODOLOGY

of a development cumulatively with other developments only where there are likely to be significant effects. For the purposes of the ES, cumulative effects will be considered both through the combination of different aspects of the proposed development ("intra-project effects") and in terms of the effects from the interaction of the proposed development with other projects which have been implemented or approved or which are reasonably foreseeable as being approved and which do not form part of the baseline conditions described in paragraph 3.5 below ("inter-project effects").

Appendix B sets out the cumulative schemes that are considered relevant to the redevelopment of BMD, though the relevance of each scheme will depend upon the topic being assessed. This list has been compiled in consultation with LCC. Developments that are not listed in Appendix B will be considered through the application of growth factors to future traffic flows etc.

We welcome views on other schemes that should be considered.

Liverpool Waters

The Liverpool Waters scheme is a key consideration for the redevelopment of BMD. This is because BMD forms part of the existing outline planning permission (Planning Ref: 10O/2424). Table 3 sets out the quantum of development that is currently permitted across Liverpool Waters, including the Northern Docks allocation which comprises both BMD and Nelson Dock. Appendix C also provides the approved Parameter Plan 006 - Liverpool Waters Building Heights, with BMD identified for medium-rise buildings over 21m and under 45m in height, and specific building heights at BMD shown as ranging from 8.5m as a floating structure in the dock itself up to 38.5m along the western dock frontage with the River Mersey.

The manner in which the Liverpool Waters scheme will be considered within the BMD ES is set out in the following section, 'Assessment Scenarios'.

Table 3

Liverpool Waters: Permitted Uses and Maximum Floorspace Parameters (sqm - Gross Internal Area (GIA)) (Schedule 1 of the Decision Notice)

USE CLASS	PRINCES DOCK	KING EDWARD TRIANGLE	CENTRAL DOCKS	CLARENCE DOCKS	NORTHERN DOCKS	APPROVED FIXED TOTALS (1)
A1 Shops (comparison)	0	900	8,700	5,700	4,000	**19,100**
A1 Shops (convenience)	100	1,000	4,200	1,500	1,000	**7,800**
A2 Financial & Professional	0	4,800	2,600	1,100	300	**8,600**
A3 Restaurants & Cafes	7,600	400	11,900	5,200	2,200	**27,100**
A4 Drinking Establishments	0	2,600	12,600	2,900	1,200	**19,200**
B1 Business	57,100	85,300	165,900	4,600	1,800	**314,500**

EIA METHODOLOGY

USE CLASS	PRINCES DOCK	KING EDWARD TRIANGLE	CENTRAL DOCKS	CLARENCE DOCKS	NORTHERN DOCKS	APPROVED FIXED TOTALS (1)
C1 Hotels	14,900	0	35,400	2,800	0	**53,000**
C3 Dwelling Houses	88,500	100,800	235,300	89,400	219,500	**733,200**
D1 Non-Residential Institutions	0	0	600	1,800	6,600	**8,900**
D2 Assembly & Leisure	800	0	30,700	1,000	1,000	**33,300**
Servicing	4,700	3,600	17,500	4,500	5,800	**36,000**
Sui Generis (other)	0	0	16,600	0	1,000	**17,600**
Sui Generis (Parking)	25,200	62,300	180,400	41,900	103,100	**412,800**
Indicative Column Totals (3)	**198,900**	**261,700**	**722,400**	**162,400**	**347,500**	**1,691,100**

Notes: (1) Row totals fixed as per Liverpool Waters Statement of Key Development Principles Table 2.1. (2) Cell data rounded as per Liverpool Waters Statement of Key Development Principles Table 2.2 and therefore do not sum precisely to row totals. (3) Column totals are indicative, based on summation of the rounded cell data, and therefore do not sum precisely to the overall row total.

3.5 ASSESSMENT SCENARIOS

Geographical Scope of Assessment

The redline boundary has been enlarged to encompass the potential need for temporary construction areas/compounds outside of BMD and encompasses an area of 23.84 ha (as shown on Figure 2, Appendix A).

The relevant geographical scope of assessment for each topic is stated within the technical sections contained in Section 6 of this report.

Temporal Scope of Assessment

It is currently envisaged that enabling works would commence on site in Summer 2018 and that construction of the new stadium would be completed by March 2021 ahead of commencement of the 2021/22 season ("the opening year") in August 2021.

The term 'opening year' is referenced throughout the remainder of this report. This is to reflect the fact that, should the current emerging programme change prior to the submission of the full planning application (anticipated to be December 2017), which might arise due to delays in finalising the design of the stadium etc., the ES would assess a different opening year to that currently indicated, for example 2022/23.

EIA METHODOLOGY

Opening Year Assessment Scenarios

Baseline/'Do Nothing' Scenario

The baseline against which impacts will be measured is the existing condition at the application site as previously described in Section 2.1 and to be further defined as a result of surveys to be undertaken at the site.

In the ES, this scenario will take account of the likely evolution of the application site as far as natural changes can reasonably be assessed on the information which is available.

The 'Future Baseline'

It is considered that the Future Baseline involves the development of BMD under the existing Liverpool Waters outline planning permission, as Phase 5 under that permission or as an earlier phase brought forward by a Section 73 variation of the Liverpool Waters permission or under a standalone planning application in similar terms to the development of Princes Dock. The Future Baseline will not replace the Baseline as the benchmark against which the EIA is to be carried out but it will serve as a useful reference point to compare the environmental impacts from the residential development consented under the Liverpool Waters outline planning permission with the impacts resulting from the proposed Stadium development. The Applicant proposes to agree this approach with LCC following further discussions.

The 'Do Something' Scenario

Under the do something scenario, the proposed development will comprise the demolition of: non-listed structures, potential part-demolition of listed structures and potential infill/part infill of the listed dock; and the construction of: a new stadium of up to 60,000 seats (Class D2) with retail (including food and beverage) (Class A1 and/or A3 and/or A4 and/or A5), museum (Class D1) and ancillary offices (Class B1); betting shop (sui generis) together with associated facilities including an external concourse/fan zone, vehicular and pedestrian circulation areas, up to 900 car parking spaces, footways, and associated public realm improvements.

As part of the cumulative assessment, the Liverpool Waters scheme would be assessed as being redeveloped up to the maximum permitted quanta, with the uses currently consented within BMD being redistributed, so far as possible within the parameters fixed under the Liverpool Waters outline permission, across the remainder of the Liverpool Waters site. This scenario would also assume that other consented developments (as listed in Table 2 would also come forward.

3.6 ASSOCIATED DEVELOPMENT

Associated development is that which does not form part of a planning application but which is required in order for a development to progress. This might include the upgrading of road junctions and/or the delivery of off-site transport/service/utilities infrastructure.

Whilst the associated development required to deliver the proposed schemes has yet to be confirmed, a suitable level of consideration will be given to its effects within the relevant chapters of the ES should it be required.

3.7 APPROACH TO ASSESSMENT OF PARAMETERS

Whilst the application for the proposed development will be full in nature, addressing a detailed scheme design, there may be very minor adjustments in terms of height during technical design and construction. Consequently, the proposed development will be set out in a number of parameter plans which will show information including maximum building heights, maximum and minimum building footprints and floorspace areas for each land use, maximum excavations and maximum parking spaces.

EIA METHODOLOGY

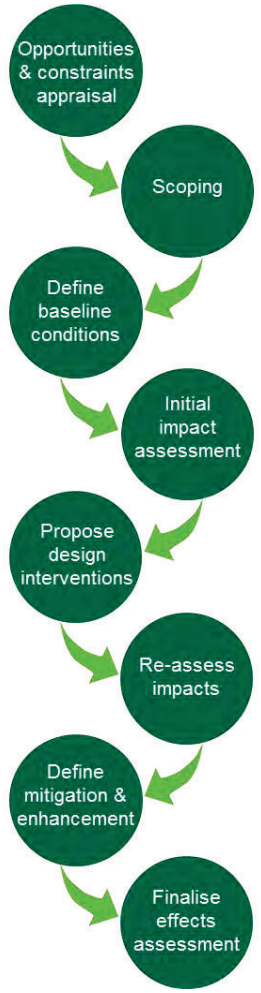
Maximum parameters for floorspace areas for the proposed flexible uses, and car parking will be used in the other relevant assessments to ensure a robust approach to the EIA. The socio-economic assessment will also utilise minimum parameters for the proposed land uses as these would better provide a more robust approach to certain elements of this assessment, such as the assessment of the impacts of operation of the scheme on the local economy.

3.8 DESIGN INTERVENTIONS

EIA is an iterative process, as illustrated in Figure 4. An initial impact assessment of the proposed development is undertaken, on the basis of which recommendations are made on how the proposed development could be altered to lessen adverse effects and improve beneficial effects. Where these measures are incorporated into the design of the development and as such, will be shown on the application plans, they are termed 'design interventions'.

The revised design then undergoes a further impact assessment and, if required, additional mitigation and enhancement measures (which are not incorporated into the design and/or relate to the management of the proposed development) are identified. The ES will include an assessment of residual effects which are those likely to arise after any additional proposed mitigation and enhancement has been applied.

Figure 4
Iterative EIA Approach including Design Interventions



EIA METHODOLOGY

3.9 CONSIDERATION OF ALTERNATIVES

As noted in Table 1 in Section 1 above, Schedule 4 of the EIA Regulations 2011 requires the ES to contain an outline of the main alternatives studies by the Applicant and an indication of the main reason for its choice of development after taking account of environmental effects. The EIA Regulations 2017 re-word this requirement to require:

"*A description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects*"".

Government Planning Practice Guidance on Environmental Impact Assessment states at paragraph 035 that:

"Where alternative approaches to development have been considered, the Environmental Statement should include an outline of the main alternatives studied and the main reasons for the choice made, taking into account the environmental effects"

Potential alternatives can be broadly grouped into the following categories:

- Alternative sites;
- Alternative land uses;
- Alternative processes; and
- Alternative development layouts.

Significant work has been undertaken on site identification for the purposes of a football stadium development in Liverpool and Liverpool Football Club (LFC) prepared an alternative site assessment in conjunction with its Stanley Park Stadium applications (in 2003, 2007 and 2008); this was undertaken in with LCC.

EFC has continually engaged with LCC and met with Officer's at LCC to review the work previously undertaken and to understand if any of these sites were still available, or if any new sites had come forward since. The adjacent Sefton and Knowsley Borough Councils were also consulted.

Further sites were then identified based on a review of planning policy (and associated policy maps), and following consultation with the Club's legal representatives. The full list of sites was refined based on area, with a minimum requirement of 8ha identified as necessary for the development.

Following identification of the final sites they were then assessed against a number of criteria, combining both the needs of EFC and policy requirements. This has included consideration of the physical site context, ownership, accessibility, highways concerns, impact on amenity and the environment, and planning policy constraints (amongst others). Using this information the sites were subsequently appraised based on their suitability, viability and availability. Bramley Moore Dock was identified as the most appropriate location for the development. This information will be provided as an overview within the technical appendices of the ES but will not feature within the individual technical assessment chapters. Other forms of alternative, such as different designs will be set out in the Alternatives and Design Evolution ES chapter. Alternative uses have not been considered given the clear intent of the proposed development.

3.10 NEW TOPICS REQUIRED UNDER THE EIA REGULATIONS 2017

The EIA Regulations 2017 introduce new topics that need to be considered within the scope of an EIA. The new topics include human health, climate

EIA METHODOLOGY

change, land (for example land take) and the vulnerability of the development to risks of major accidents and/or disasters.

These new requirements will not apply in the case of the proposed development nor to LCC's assessment of the Applicant's Environmental Statement and its determination of the Stadium planning application as a result of the transitional provisions contained in the EIA Regulations 2017. The Applicant aims to address the new topic areas set out in the 2017 Regulations but this will be on a voluntary basis, without prejudice to the operation of the transitional provisions and LCC's determination of its planning application under the EIA Regulations 2011.

Stand-alone technical chapters are not proposed for these topic areas, instead where the risks of major accidents and/or disasters or effects of the development in relation to human health, climate change or land are relevant to a specific technical assessment, this will be stated and assessed within the respective ES chapter/report.

Further information on each of these topic areas and how they will be considered throughout the ES is provided below.

Climate Change

Under the new 2017 regulations, the consideration of climate change within EIAs will be mandatory. Consequently, where climate change is relevant to a technical assessment – for example, as a result of the vulnerability of the baseline environment to projected changes – this will be stated and taken into account within the respective ES chapter/report.

A summary of key climate change projections within the UK and modelled climate variables specific to the application site are set out below.

The following will be considered in each of the technical chapters/reports within the context of the outlined climate change projections:

- The vulnerability of the baseline environment to projected changes;
- The vulnerability of the proposed development to climate change; and
- The effect of the proposed development within the context of climate change.

If climate change does not affect the assessment of the technical discipline, this will be stated.

Summary of Climate Change Projections

Key climate projections for the UK are as follows:

- Summers will become hotter and drier;
- Winters will become milder and wetter;
- Soils will become drier on average;
- Snowfall and the number of very cold days will decrease;
- Sea levels will rise; and
- Storms, heavy and extreme rainfall, and extreme winds will become more frequent.

Table 4 below summarises the results of the UK Climate Projections (UKCP09) for the north-west regional area.

EIA METHODOLOGY

Table 4

UKCP09 Projections for Climate Variables for a Medium Emissions Scenario in the North West [10]

VARIABLE	2040-2069 PROJECTIONS UKCP09 PROBABILITY LEVEL 1		
	10% (APPROX. LOWER LIMIT)	50%	90% (APPROX. UPPER LIMIT)
Mean annual temp (°C)	1.4	2.3	3.3
Mean temp. over summer months (JJA) (°C)	1.2	2.6	4.1
Mean temp. over winter months (DJF) (°C)	1.1	1.9	3.0
Mean winter precipitation change (mm)	3	13	26
Mean summer precipitation change (mm)	–36	–18	1

1. The following probability levels of projections have been used: 10% level – indicates that 10% of the UKCP09 model runs fall at or below the specified value. 50% level – indicates that 50% of the UKCP09 model runs fall at or below the specified value. 90% level – indicates that 90% of the UKCP09 model runs fall at or below the specified value.

Source: UKCP09

Human Health

Many technical chapters/reports already address the potential implications of their topics on human health by virtue of set target values or objectives (e.g. contaminated land, air quality or noise) based on human health tolerances or through the consideration of policy requirements and targets promoting healthier behaviours (e.g. active travel such as cycling and walking). Where relevant it will be stated within each ES chapter/report how the respective technical assessment takes these factors into consideration. Relevant literature or studies, which draw upon the human health outcomes anticipated as a result of the use of these targets, will be referenced where necessary.

For example, with regard to air quality, the limit values are informed by guidelines set by the World Health Organisation (WHO) and therefore, the WHO Air quality guidelines would be referenced with regard to the potential impacts on human health.

Land

Whilst the existing site is developed, comprising the hard engineered dock and associated structures, the dock itself is currently a water body. Under the proposed development all or part of the dock may need to be infilled. The potential impacts and the significance of any effects of this will be considered by all technical assessments as appropriate. In addition, the proposals will result in changes in land use at the site. The effects of the scheme in relation to land use will be discussed within the 'Site & Development Description' chapter within the main volume of the ES. This chapter will provide information on the existing and proposed land uses at the site and in the surrounding area.

Further information on the structure of the ES is provided in Section 3.

Risk of Major Accidents and/or Disasters

In the absence of recognised guidance on this subject in the context of EIA, CBRE has reviewed a range of sources providing guidance related to the topic, including:

- Cabinet Office National Risk Register of Civil Emergencies 2015 Edition [11];
- UK Government Emergency Response & Recovery Guidance [12]; and

EIA METHODOLOGY

- International Federation of Red Cross & Red Crescent Societies Disaster and Crisis Management Guidance [13].

A disaster can be defined as "a sudden, calamitous event that seriously disrupts the functioning of a community or society and causes human, material, and economic or environmental losses that exceed the community's or society's ability to cope using its own resources. Though often caused by nature, disasters can have human origins" [13].

An accident can be defined as "an unfortunate incident that happens unexpectedly and unintentionally, typically resulting in damage or injury" [14].

The EIA Regulations 2017 state that the following should be provided within the ES in relation to this topic:

"a description of the expected significant adverse effects of the development on the environment deriving from the vulnerability of the development to risks of major accidents and/or disasters which are relevant to the project concerned."

The National Risk Register of Civil Emergencies (NRR) [11] is the unclassified version of the National Risk Assessment (NRA), a classified assessment of the risks of civil emergencies facing the UK over the next five years. The NRR provides an overview of the main types of civil emergencies that could affect the UK. It also sets out the definition of an emergency as it appears in the Civil Contingencies Act 2004, and shows, within the risk matrices, how these emergencies compare in terms of likelihood, and the scale and extent of the consequences.

What is a Civil Emergency?

The NRR states that the Civil Contingencies Act 2004 (the Act) describes an emergency as:

- "an event or situation which threatens serious damage to human welfare in a place in the United Kingdom
- an event or situation which threatens serious damage to the environment of a place in the United Kingdom
- war, or terrorism, which threatens serious damage to the security of the United Kingdom."

What is a Risk of Civil Emergency?

Every two years the UK Government produces a classified assessment of the risks of civil emergencies facing people in the UK – the NRA. In both the NRA and NRR, how serious the risk of an emergency is depends both on the likelihood of it happening over the next five years and on the consequences or impacts that people will feel if it does. When identifying risks for the NRA and NRR, a 'reasonable worst case' is chosen which represents a challenging manifestation of the scenario after highly implausible scenarios are excluded.

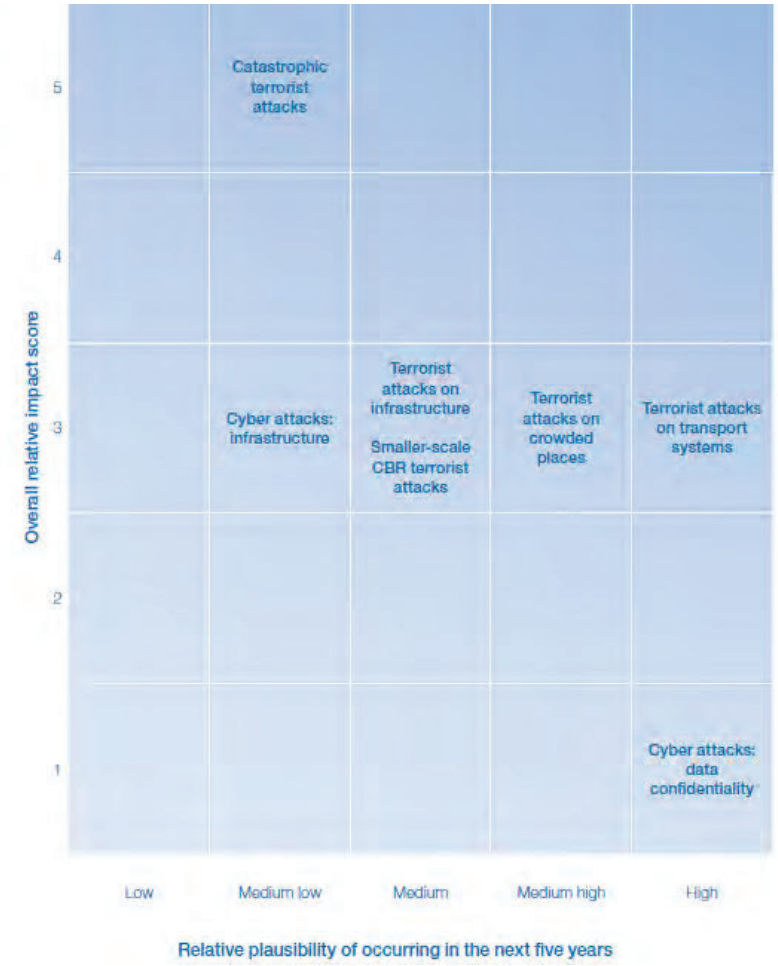
The following two matrices shown in Figure 5 and Figure 6 represent the key risks of civil emergencies in the NRA, as identified in the 2015 edition for the following five years. As the proposed development's life span is significantly greater than five years, a comprehensive list of potential major disasters and accidents has been reviewed in the context of the potential for climate change to exacerbate their likelihood and severity, their inclusion (or exclusion) from the NRR, their relevance to the proposed development, and whether mitigation is already in place within appropriate legislation or national procedures.

In such instances, those major disasters and/or accidents will be 'scoped out' of further assessment beyond the scoping stage. The major disasters that are proposed to be scoped out are provided in Table 5 below, alongside explanatory reasoning.

EIA METHODOLOGY

Figure 5

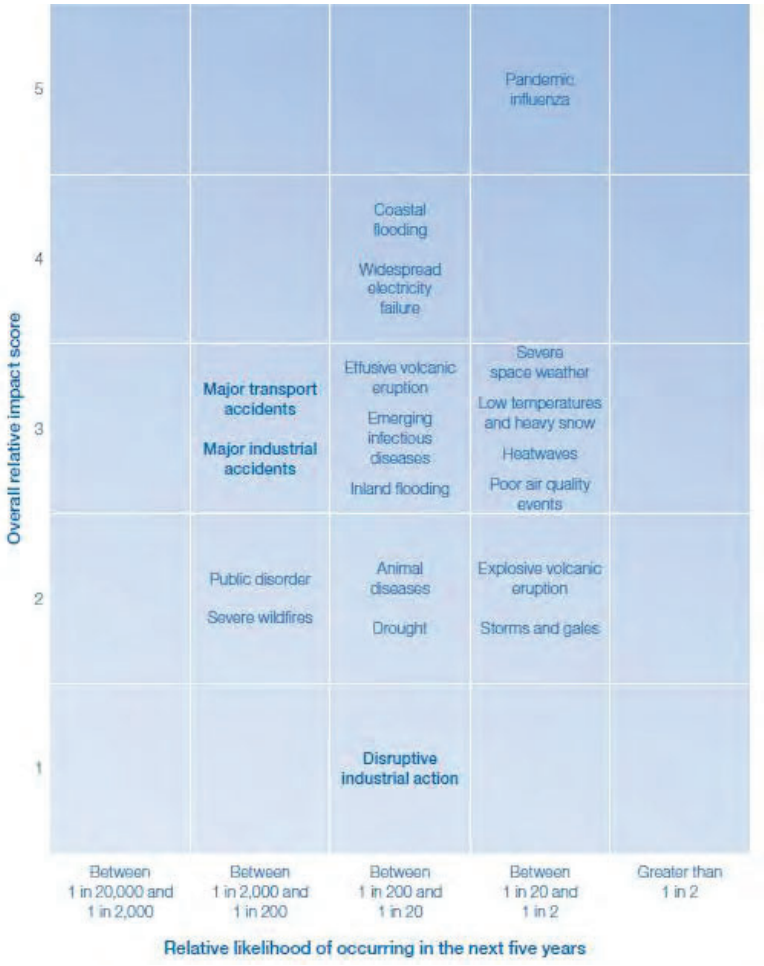
Risks of Terrorist and other Malicious Attacks



Source: Cabinet Office, 2015: NRR

Figure 6

Other Risks



Source: Cabinet Office, 2015: NRR

EIA METHODOLOGY

Table 5

Major Disasters and Accidents to be 'Scoped Out' of Further Assessment

MAJOR DISASTER / ACCIDENT TYPE	DEFINITION & CHARACTERISTICS	REASONING
Biological hazards: epidemics	An unusual increase in the number of cases of an infectious disease which already exists in a certain region or population. It can also refer to the appearance of a significant number of cases of an infectious disease in a region or population that is usually free from that disease. Potential to cause widespread loss of life.	Mass gatherings at sporting events attract huge crowds, creating high-risk conditions for the rapid spread of infectious diseases. However, the hospital and healthcare facilities in the local area given the existing presence of both Goodison Park and Anfield Stadiums are familiar with addressing the challenges around managing potential outbreaks that could be exacerbated by operation of a sport event with an associated mass gathering. Such an event is also governed by NHS policy regarding the prevention of the spread of infectious diseases (as provided with the NHS England Emergency Preparedness, Resilience and Response Framework [15]. On this basis, it is considered that suitable mitigation is already in place, such that further assessment of potential risks within the EIA would be a reiteration and hence unnecessary and inappropriate given the terminology used within the EIA Directive 2014/52/EU. For this reason, this disaster/accident type is proposed to be scoped out of further consideration.
Biological hazards: animal and insect infestation	Pervasive influx and development of insects or parasites affecting humans, animals, crops and/or materials.	It is considered that the proposed development is not of a nature such that it would result in a pervasive influx of insects or parasites affecting humans, animals, crops and/or materials. This disaster/accident type is therefore not considered relevant to the scheme and is proposed to be scoped out of further consideration as a result.
Earthquakes	A tremor of the surface of the Earth, sometimes severe and devastating, which results from shock waves generated by the movement of rock masses deep within the Earth, particularly near boundaries of tectonic plates. Potential to damage property and cause loss of life.	The UK is not generally associated with earthquakes; however, between 20 and 30 earthquakes are felt by people each year, and several hundred quakes of a lower magnitude are recorded by seismometers. Most of these are very small and cause no damage [16]. It is considered that the likelihood of an earthquake with a magnitude sufficient to cause damage to buildings and/or loss of life occurring and impacting the site is extremely low. On this basis, this disaster/accident type is proposed to be scoped out of further consideration.
Mass movement	The downward movement of soil, rock, debris, snow and/or ice controlled by gravity. This includes landslides, rockfalls, subsidence, dry or wet mass movements, and avalanches. Potential to damage property and cause loss of life.	The topography of the application site is not considered to be sufficiently steep such that a major mass movement disaster could arise. This disaster/accident type is therefore proposed to be scoped out of further consideration.
Tsunamis	A series of waves caused by a rapid displacement of a body of water (e.g. ocean, lake), characterised by very	Although the application site is located on the bank of the River Mersey and is close to the estuary into the

EIA METHODOLOGY

MAJOR DISASTER / ACCIDENT TYPE	DEFINITION & CHARACTERISTICS	REASONING
	long wavelength and much smaller amplitude offshore. Impact in coastal areas can be very destructive as waves advance inland and can extend over thousands of KMs.	Irish Sea, it is considered extremely unlikely that the site would be impacted by such an event. The NRR does not list tsunamis as a recognised risk and on this basis; this disaster/accident type is proposed to be scoped out of further consideration.
Volcanic eruptions	The occurrence of a violent discharge of volcanic material from a volcano or volcanic vent. Potential to damage property and cause loss of life.	Should explosive volcanic eruption styles emitting mainly ash, coincide with unfavourable weather conditions, they can result in significant ash reaching the UK. In April 2010, the relatively small magnitude explosive eruption of the Eyjafjallajökull volcano in Iceland coincided with north-westerly winds and high pressure, resulting in airspace closures over much of the UK and Northern Europe for six days. Effusive volcanic eruption styles emitting volcanic gases can potentially cause visible pollution across the UK and Northern Europe, and historically, such events have coincided with mass crop failure and thousands of excess deaths. Effusive volcanic eruptions have between a 1 in 200 to 1 in 20 likelihood of occurring in the next five years with the likelihood significantly higher for explosive volcanic eruptions ranging from 1 in 20 to 1 in 2 of occurring over the next five years. However, the implications of this are: disruption to aviation, public health and environmental impacts, and economic impacts; and, such impacts are not specific to either the operation of sports stadia or the location of the application site. On this basis, this disaster/accident type is proposed to be scoped out of further consideration.
Severe Weather: Drought	A period of dryness especially when prolonged; specifically, one that causes extensive damage to crops or prevents their successful growth.	Drought is currently considered to have a 1 in 200 to 1 in 20 likelihood of occurring over the next five years. Climate change may increase the risk of droughts but not necessarily lead to a more frequent use of restrictions on water. Planning for periodic restrictions on non-essential water use is an integral part of water companies resource management Over the past 40 years, England has experienced five long-duration drought events and two short-duration events. During the 2010–12 drought, despite some of parts of south-east and eastern England recording their lowest 18-mth rainfall in at least 100 years, its impact extended only as far as the inconvenience for 20 million domestic customers of a temporary hosepipe ban. The environment and agriculture sectors were also temporarily affected by this drought. The proposed development, by virtue of its grass pitch will have a requirement for a significant quantity of water for irrigation purposes. In addition, whilst there will not be a long-term residential demand for water the attendance at the stadium will lead to a peak in demand during events. It is intended that the design

EIA METHODOLOGY

MAJOR DISASTER / ACCIDENT TYPE	DEFINITION & CHARACTERISTICS	REASONING
		will respond to these requirements with a considered strategy to reduce water consumption, this would also include a consideration for climate change. However, it is not considered that the potential effects of drought would be of particular detriment to the proposed development, nor that the proposed development would result in an increase in the risk of drought conditions at the site or in the surrounding area, or in a substantial increased demand for potable water that could not be managed through the design development. This disaster/accident type is therefore not considered within the EIA but will be responded to within the sustainability strategy and the design and access statement as appropriate.
Severe Weather: Extreme temperatures	A heat wave is a prolonged period of excessively hot and sometimes also humid weather relative to normal climate patterns of a certain region. A cold wave can be both a prolonged period of excessively cold weather and the sudden invasion of very cold air over a large area. Along with frost it can cause damage to agriculture, infrastructure, and property.	Low Temperatures and Heavy Snow There have been a number of recorded occasions of snow covering large areas of the country for over a week. The winter of 2009–10 saw a prolonged spell of cold weather that lasted for approximately a month. During this time, snowfalls of up to 40cm were recorded in parts of north-west England and south and east Scotland. Many other areas experienced snow cover of 10cm or more throughout this period. In Northern Ireland in February 2001, strong north-easterly winds and heavy snow caused travel disruption for up to five days and brought down power lines. Heatwaves The Met Office uses a range of threshold temperatures, varying by region, to define a heatwave. High temperatures were widespread during August 1990, reaching a record 37.1°C in one part of England. In August 2003, the UK experienced heatwave conditions lasting 10 days and resulting in 2,000 excess deaths. During this heatwave, a record maximum temperature of 38.5°C was recorded at Faversham in Kent. In July 2006, similar conditions occurred, breaking records and resulting in the warmest month on record in the UK. The likelihood of either heat waves or extreme low temperatures with heavy snow occurring over the next five years is considered to range from 1 in 20 to 1 in 2. Consequences may include: ■ an increased number of admissions to hospital and consultations with GPs, and additional demands placed on the emergency services; ■ fatalities, particularly among the vulnerable and elderly; for example, in the case of heatwaves, an estimated 75 extra deaths per week for each degree of increase in temperature;

EIA METHODOLOGY

MAJOR DISASTER / ACCIDENT TYPE	DEFINITION & CHARACTERISTICS	REASONING
		■ disruption to travel and logistics, due to deterioration of the road, runway surfaces and vehicle breakdowns; ■ loss of/interruption to supply of essential goods and services and disruption to transport and communications networks; ■ depending on the nature of the severe weather, economic impact and environmental damage. The proposed development would result in site users being brought to the site that could potentially be affected by prolonged periods of excessive hot or cold weather. However, for the majority of site users the duration of their time at the site would be limited to their attendance at events, and as such would be relatively short in terms of exposure whilst at the site. Staff would attend the site on a daily basis and therefore, would be more prone to experiencing temperature extremes whilst at the site. The proposed development will be built to the latest Building Regulations requirements and with consideration of potential temperature highs and lows as part of its typical operation to ensure appropriate thermal comfort. This will include an allowance for climate change. Therefore, it is considered that an appropriate climate can be maintained within the internal spaces used by staff daily, and, by fans and visitors during events. As it will be open to the air, the main stadium will be more susceptible to temperature extremes. Cold Weather Alerts and a Heat Health Watch Service are currently provided by Public Health England. The purpose of these services is to provide health advice for the public and healthcare workers in England, according to levels of heat forecast/measured by the Met Office. This would help to inform operation on days when temperature extremes are experienced with recommendations made to fans regarding sensible actions to take to help avoid increasing the risk of, for example high temperature related heat stroke, such as increased water consumption. Conversely, if the weather was extremely cold temperatures with heavy snow, the event may be postponed if travel was significantly compromised. On this basis, it is considered that suitable mitigation is already in place, such that further assessment of potential risks within the EIA would be a reiteration and hence unnecessary and inappropriate given the terminology used within the Directive. For this reason, this disaster/accident type is proposed to be scoped

EIA METHODOLOGY

MAJOR DISASTER / ACCIDENT TYPE	DEFINITION & CHARACTERISTICS	REASONING
		out of further consideration.
Industrial accidents	Danger originating from technological or industrial accidents, dangerous procedures, infrastructure failures or certain human activities, which may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation. Accident release Occurring during the production, transportation or handling of hazardous chemical substances Explosions Disasters will only be classified as explosions when the explosion is the actual disaster. If the explosion is the cause of another disaster, the event will be classified as the resulting disaster. Chemical explosion Violent destruction caused by explosion of combustible material, typically of chemical origin. Nuclear explosion/Radiation Accidental release of radiation occurring in civil facilities, exceeding the internationally established safety levels. Mine explosion Accidents which occur when natural gas or coal dust reacts with the air. Pollution Degradation of one or more aspects in the environment by noxious industrial, chemical or biological wastes, from debris or man-made products and from mismanagement of natural and environmental resources. Acid rain A washout of an excessive concentration of acidic compounds in the atmosphere, resulting from chemical pollutants such as sulphur and nitrogen compounds. When deposited these increase the acidity of the soil and water causing agricultural and ecological damage. Chemical pollution A sudden pollution of water or air near industrial areas, leading to internal body disorders with permanent	Whilst the proposed development will have a number of construction processes on site during the construction phase these will be covered by an appropriate Construction and Environmental Management Plan to prevent accidental release of contaminants or other pollution. The NRR states that the current legislation that seeks to prevent and mitigate the effects of major accidents involving dangerous substances is the Control of Major Accident Hazard Regulations 1999 (COMAH) under which major hazard sites are regulated and inspected in accordance with the regulations. The proposed development would not fall under the requirements of the COMAH Regulations and as such, this disaster/accident type is not considered relevant to this scheme and is proposed to be scoped out of further consideration as a result.

EIA METHODOLOGY

MAJOR DISASTER / ACCIDENT TYPE	DEFINITION & CHARACTERISTICS	REASONING
	damage of the skin. Atmosphere pollution Contamination of the atmosphere by large quantities of gases, solids and radiation produced by the burning of natural/artificial fuels, chemicals, other industrial processes & nuclear explosions	
Electricity, gas, water supply or sewerage system failure	Failure of electricity, gas, water supply or sewerage system infrastructure can arise for a variety of reasons. Power failures can result from faults at power stations, damage to electric transmission lines, substations or other parts of the distribution system, a short circuit, or the overloading of electricity mains. Gas, water supply and sewerage system failures generally occur due to damage to key elements of the systems infrastructure, such as water mains, sewers and storage facilities.	The utilities design for the proposed development is currently being considered and progressed. In consultation with all the respective utilities providers existing and future capacity/demand will be considered and appropriate measures implemented to ensure that the proposed development is sufficiently serviced. In addition to this, a consideration of resilience to potential systems failure will also be incorporated as appropriate, such as onsite generators to act as an alternate power supply in the event of electricity failure. In addition, the utilities providers already have in place procedures to allow users to report a failure in supply of a particular utility so that repairs and continuation of supply can be enabled. On this basis, it is considered that suitable mitigation is already in place, such that further assessment of potential risks within the EIA would be a reiteration and hence unnecessary and inappropriate given the terminology used within the Directive. For this reason, this disaster/accident type is proposed to be scoped out of further consideration.
Wildfires	Wildfire describes an uncontrolled burning fire that occurs in a wild area, which can cause loss of life and damage to forestry, agriculture, infrastructure and buildings.	Given the application site's docks setting that predominantly comprises water and hardstanding, and, the largely absent nature of vegetation in the immediate environs, this disaster/accident type is not considered relevant to this scheme and is proposed to be scoped out of further consideration as a result.
Urban fire	Urban fires describe an uncontrolled burning fire that occurs within an urban area. These fires can cause damage to buildings and vegetation and cause loss of life.	Under the proposals, site users would be brought to the site who could be affected by an urban fire should it occur. In the past, early stadia design and the use of materials such as wood for stand construction have resulted in incidents of fire that have led to injury and loss of life. Stadia design has evolved considerably and is governed by The Fire Safety and Safety of Places of Sports Act 1987. Fire safety engineers are included within the design team and the proposed development will be designed to all appropriate legislation and guidance such as the current Guide to Safety at Sports Grounds (Green Guide) 5th Edition (2008) [18].

EIA METHODOLOGY

MAJOR DISASTER / ACCIDENT TYPE	DEFINITION & CHARACTERISTICS	REASONING
		On this basis, it is considered that suitable mitigation is already in place, such that further assessment of potential risks within the EIA would be a reiteration and hence unnecessary and inappropriate given the terminology used within the Directive. For this reason, this disaster/accident type is proposed to be scoped out of further consideration.
Famine/ food insecurity	Food-security emergencies are complex disasters with multiple root causes. Overseas they can be a result of severe drought and/or conflict. In the UK, food insecurity is more likely to be a result of poverty and can be defined as: experiencing hunger, inability to secure enough food of sufficient quality and quantity to enable good health and participation in society, and cutting down on food due to financial necessity.	The proposed development is not bringing forward residential development introducing a new population, neither is it affecting the means of food production or agricultural land. The proposed development may potentially have a regenerative effect on the local area that could assist in alleviating poverty. Given the nature of the proposals and the location of the site, this disaster/accident type is not considered relevant to this scheme and is proposed to be scoped out of further consideration as a result.
Displaced populations	Displaced populations leave their homes in groups, usually due to a sudden impact, such as an earthquake or a flood, threat or conflict. There is usually an intention to return home. Migration and displacement are interlinked but must be distinguished. Displaced populations – either across borders such as refugee influxes, or within a country because of disasters or armed conflict – usually need relief operations combined with efforts aiming at collective and lasting solutions. Migration on the other hand usually involves more individual social assistance, legal protection and personal support.	Given the nature of the proposals and the location of the site, this disaster/accident type is not considered relevant to this scheme and is proposed to be scoped out of further consideration as a result.
Complex emergencies	Some disasters can result from several different hazards or, more often, from a complex combination of both natural and man-made causes and different causes of vulnerability. Food insecurity, epidemics, conflicts and displaced populations are examples. Complex emergencies are typically characterized by: ▪ extensive violence and loss of life; ▪ displacements of populations; ▪ widespread damage to societies and economies; ▪ the need for large-scale, multi-faceted humanitarian assistance; ▪ the hindrance or prevention of humanitarian assistance by political and military constraints; and ▪ significant security risks for humanitarian relief workers in some areas.	Given the nature of the proposals and the location of the site, this disaster/accident type is not considered relevant to this scheme and is proposed to be scoped out of further consideration as a result.
Terrorist incidents	The calculated use of violence (or the threat of violence) against civilians in order to attain goals that are political or religious or ideological in nature. Loss of life and/or destruction of property/infrastructure can result.	The NRR considers the relative plausibility of a terrorist attack on a crowded place occurring in the next five years as medium-high.

EIA METHODOLOGY

MAJOR DISASTER / ACCIDENT TYPE	DEFINITION & CHARACTERISTICS	REASONING
		The proposed development by its nature will result in regular attendance by up to a 60,000 attendance crowd and consequently, counter-terrorism is a key consideration of the design development process. The scheme will be designed in accordance with the guidance contained in the Counter Terrorism Protective Security Advice for Stadia and Arenas document produced by the National Counter Terrorism Security Office (NaCTSO) [17] and in accordance with the current Guide to Safety at Sports Grounds (Green Guide) 5th Edition (2008) [18] and the subsequent 6th edition anticipated to be released in 2017. The Design & Access Statement will primarily address how the proposed development has been designed to counteract the potential for terrorist incidents and the ES will also identify within the Design Evolution and Alternatives Chapter how this has been included for within the proposed development. On this basis, it is considered that suitable mitigation will be in place, such that further assessment of potential risks within the EIA would be a reiteration and hence unnecessary and inappropriate given the terminology used within the Directive. For this reason, this disaster/accident type is proposed to be scoped out of further consideration.

The major disasters that are proposed to be 'scoped in' (given detailed consideration within the main volume of the ES or included within the ES technical appendices but not meriting a stand-alone technical chapter within the main volume of the ES) are provided in Table 6 below. The location in the ES where the results of the assessment will be provided is indicated and explanatory reasoning is also provided.

Table 6

Major Disasters and Accidents to be 'Scoped In' for Further Assessment

MAJOR DISASTER / ACCIDENT TYPE	DEFINITION & CHARACTERISTICS	ASSESSMENT REPORTING	REASONING
Severe Weather: Storms	Tropical storms, hurricanes, typhoons and cyclones are a large scale closed circulation system in the atmosphere which combines low pressure and strong winds that rotate counter clockwise in the	To be assessed in the Wind Chapter, and in the Flood	Storms and gales are anticipated by the NRR to have between a 1 in 20 and 1in 2 likelihood of occurring in the next five years.

EIA METHODOLOGY

MAJOR DISASTER / ACCIDENT TYPE	DEFINITION & CHARACTERISTICS	ASSESSMENT REPORTING	REASONING
	northern hemisphere and clockwise in the southern hemisphere. Potential to cause extensive damage. A winter storm emerges from an extra-tropical cyclone, a synoptic scale low pressure system that occurs in the middle latitudes of the Earth and is connected to fronts and horizontal gradients in temperature and dew point. A winter storm is associated with high wind speeds, gusts, thunderstorms, rain and often storm surges. A severe storm or thunderstorm is the result of convection and condensation in the lower atmosphere and the accompanying formation of a cumulonimbus cloud. A severe storm usually comes along with high winds, heavy precipitation (rain, sleet, hail), thunder and lightning. A hail storm is a type of storm that is characterised by hail as the dominant part of its precipitation. The size of the hailstones can vary between pea size (6mm) and softball size (112mm) and therefore cause considerable damage. Lightning is an atmospheric discharge of electricity, which typically occurs during thunderstorms, and sometimes during volcanic eruptions or dust storms. Tornadoes are rotating columns of air (vortex) that emerge out of the base of a cumulonimbus cloud and have contact to the Earth's surface. Typically a tornado forms during a severe convective storm in so-called supercells and is often visible as a funnel-shaped cloud. Tornadoes are usually short-lived, lasting on average no more than 10 minutes. They can generate wind speeds above 400 km/h and are considered the most destructive weather phenomenon. The intensity of tornadoes is assessed using the Enhanced Fujita Scale. Other names for this weather phenomenon are twister, waterspout. Local windstorm refers to strong winds caused by regional atmospheric phenomena which are typical for a certain area. These can be katabatic winds, foehn winds etc. A sandstorm/dust storm typically occurs in arid or semi-arid regions if high wind speeds causes the transportation of small particles like sand or fine clastic sediment by saltation and/or suspension. A snowstorm refers to a storm, usually in the winter season, where large amounts of snow fall. If	Risk Assessment (FRA), provided in the ES appendices.	The most significant storms in recent decades were those of 16 October 1987 and 25 January 1990. The first brought down an estimated 15 million trees in the south-east of England. By contrast, the 1990 storm was more extensive and had higher peak wind speeds. The net effect was a much higher death toll but less damage to trees and property. More recently, on 28 October 2013, a severe storm, which the media named the 'St Jude's Day' storm, travelled across southern England. The timing of the storm meant that trees were still in full leaf and vulnerable to strong winds. The path of the storm was also significant – strong gusts of 70 to 80 mph are rare in southern England, making these areas more vulnerable to the impacts of severe weather. Falling trees were the main cause of disruption, contributing to widespread transport disruption and power outages, with more than 660,000 homes left without power. Four people died as a result of falling trees. Under the proposals, new site users would be brought to the site that could potentially be affected by any storm hitting the site. The proposed development will be required to meet building regulations, and will be assessed in the context of different wind strengths and directions to ensure that the stadium will be capable of withstanding storms and that the surrounding pedestrian environment meets both pedestrian safety and comfort criteria (See section 6.5 on the wind assessment methodology). The Met Office also operates a national severe weather warning service to warn the public and emergency responders of severe or hazardous weather which has the potential to cause danger to life or widespread disruption, the Applicant's operating procedures would consider the postponement of an event as a precaution should a significant warning be made by the Met Office.

EIA METHODOLOGY

MAJOR DISASTER / ACCIDENT TYPE	DEFINITION & CHARACTERISTICS	ASSESSMENT REPORTING	REASONING
	it's a severe snowstorm that meets certain criteria, such as strong winds, blowing snow and low or falling temperatures, it's called blizzard.		
Tidal wave/ Storm Surge	A tidal wave/storm surge is the rise of the water level in the sea, an estuary or lake as result of strong wind driving the seawater towards the coast. This wind setup is superimposed on the normal astronomical tide. The mean high water level can be exceeded by five and more metres. The areas threatened by storm surges are coastal lowlands.	To be assessed in the Flood Risk Assessment (FRA), provided in the ES appendices and the ES water chapter.	The application site is located on the River Mersey estuary and benefits from flood defences that mean the site is categorised primarily as within Flood Zone 1, suggesting the site is predominantly at low risk of flooding from both tidal and fluvial sources. A narrow strip along the western edge of the site is located within Flood Zone 3, at a higher risk of flooding. Site specific flood data in relation to the tidal levels within the River Mersey will be obtained and related to the topographic survey information to more accurately define the boundary the extent of the flood zones within the site. The presence and extent of existing flood defences will also be reviewed as part of the assessment. From work undertaken on the Liverpool Waters development it was stated by the Environment Agency that any detailed planning applications within this area should include an assessment of the implications of wave overtopping of the existing sea wall defences and where applicable this will be included within the Flood Risk Assessment.
Floods	A rising and overflowing of a body of water especially onto normally dry land. Potential to damage property and cause loss of life.	To be assessed in the Flood Risk Assessment (FRA), provided in the ES appendices and the ES water chapter.	As stated above, the site is predominantly categorised within Flood Zone 1 with a strip along the western edge within Flood Zone 3. A Flood Risk Assessment (FRA) will be undertaken as part of the EIA. The assessment will include provision of a surface water drainage strategy for the development. The FRA report will be provided in the ES appendices and also considered within the water chapter within the main technical volume of the ES. The FRA will include consideration of the effects of climate change on potential flood levels, and as previously discussed the implications of wave over-topping.
Transport Accidents	Disaster type term used to describe technological transport accidents involving mechanised modes of transport. It comprises of four disaster subsets: accidents involving air, boat, rail transport and accidents involving motor vehicles on roads and tracks.	To be assessed within the Transportation chapter within the main volume of the ES.	Although the application site is located on the River Mersey, the significant dock walls afford protection from shipping traffic in the main river channel. As such, transport accidents related to vessels are considered unlikely and are not proposed to be assessed. Given the nature of the proposals and the site setting, accidents related to air and rail transport are

EIA METHODOLOGY

MAJOR DISASTER / ACCIDENT TYPE	DEFINITION & CHARACTERISTICS	ASSESSMENT REPORTING	REASONING
			also not considered relevant to the proposals and it is therefore proposed that they are scoped out of further consideration. The proposed development will include new access points, car parking, and significant pedestrian and vehicle movements during events such as match days. Both the site and transport patterns on the surrounding network will be affected as a result of the scheme. The effects of the proposals in regards to motor vehicle accidents at the site and on the surrounding network will be assessed in the Transportation ES chapter and the TA, which will be included within the ES appendices.
Crowd disasters	The actions of a crowd, typically during ingress or egress that can cause injury or death due to trampling or asphyxiation.	To be assessed within the Transportation chapter within the main volume of the ES.	As the proposed development will result in the potential attendance of up to 60,000 spectators the implications of crown movements are considerable and complex. The proposed development will be designed in accordance with all appropriate legislation and the Green Guide [17] design standards for crowd movement; however, this will also be assessed and reported on within the Transport Assessment and the Transport ES Chapter, which will also consider the interaction between crowd arrival, onsite crowd movements and subsequent crowd dispersion after an event. The assessment will also consider emergency crowd egress.
Football related violence and disorder	The UK Football Policing Unit (UKFPU) have a remit to tackle football related violence and disorder whether within stadia or on route to match locations. Incidences of football hooliganism can result in anti-social behaviour, property damage, injury and death.	To be assessed within the Transportation chapter within the main volume of the ES.	The design of the stadia will take into account all relevant legislation and guidance, as previously stated with regard to ensuring that events, and particularly football matches are conducted with minimal potential for the opportunity of football related violence and disorder. In addition to the inherent design aspects, the proposed development will also be subject to numerous operational management plans and procedures to seek to minimise risk of such occurrences. A key element of this is understanding and designing to the likely arrival and departure points and modes of both home and away fans and their subsequent movements within the stadia itself. Crowd movement within the stadia will be considered within the design and access statement. Crowd arrival and dispersion, including in the event of emergency egress will be considered within the Transport ES Chapter.

EIA METHODOLOGY

EIA METHODOLOGY

3.11 STRUCTURE OF THE ES

There is no defined structure for an ES, provided that it meets the requirements outlined in Regulation 2(1) of the EIA Regulations 2011. This section sets out the proposed structure for the ES.

Volumes of the ES

The ES will be presented in three separate parts:

Volume I will comprise the non-technical summary of the information contained in Volumes 2 & 3 to make it readily understandable to non-specialists.

Volume II will be the main volume of the ES and will describe: the proposals, the alternative options considered, the baseline environmental conditions, the likely significant effects of the development, the proposed mitigation measures, cumulative effects, and the residual environmental effects.

Volume III will comprise the appendices that contain all of the technical reports that have informed the assessments contained in Volume II, as well as assessments of topics not considered to require a stand-alone chapter within Volume II.

The proposed structure of Volume II (the main volume of the ES) is shown in Table 7 below.

Table 7

Proposed structure of Volume II of the ES

CHAPTER		CONTENT
1.	Introduction	Scheme background; scheme context; explanation of EIA and the EIA Regulations 2011; the structure of the ES; information on the project team and chapter authors; where to view hard copies of the ES; how to comment etc.
2.	EIA Methodology	Approach to EIA process, including: consultation, responses received and how/where issues have been addressed within the ES, discussion of issues scoped out of the EIA, structure of technical chapters, and assessment of residual impact significance
3.	Application Site & Proposed Development	Description of site and the wider study area; description of the elements of the development relevant to the assessment of its possible effects on the environment, including phasing, associated development etc.
4.	Construction Strategy & CEMP	Describes the demolition and construction strategy, including indicative phasing of the works, and the proposed mitigation measures to be adopted through the Construction Environmental Management Plan
5.	Alternatives & Design Evolution	Outline of the alternatives considered by the applicant, including alternative layouts etc.
6-10	Technical chapters	Detailed assessment of each environmental topic area, including consideration of direct, indirect, primary, secondary, short, medium and long-term and cumulative effects
11.	Other Issues	Assessment of the 'scoped down' environmental topic areas, including consideration of direct, indirect, primary, secondary, short, medium and long-term and cumulative effects.
12.	Cumulative Effects	Assessment of cumulative effects (multiple effects and different multiple effects) of the proposed development and other consented and reasonably foreseeable schemes and on key receptors.
13.	Residual Effects	Full list of the residual effects of the development, the mitigation

EIA METHODOLOGY

CHAPTER	CONTENT
Summary & Conclusions	measures proposed and how these are to be secured; details on how to comment, what the determination period is etc.

Structure of the Technical Chapters

The technical chapters will be structured as follows:

- Introduction;
- Methodology;
- Baseline conditions;
- Potential significant impacts;
- Design interventions;
- Assessment pre-mitigation;
- Mitigation & enhancement measures;
- Assessment post-mitigation; and
- Inter-project effects.

The structure of the technical chapters – particularly the use of tables – has been devised to make the technical assessments better focussed and more accessible to readers, and to reduce the length of the main volume of the environmental statement.

Where information has been summarised in the tables, references are provided as to where the full information is provided in the technical appendices.

Introduction

This section provides details of:

- the company that has undertaken the technical assessment, as well as the author(s) and their professional qualifications;
- the purpose of the chapter;
- a list of figures supporting the assessment, which are provided together at the end of the chapter; and
- a list of all of the technical appendices that are relevant and referenced within the chapter.

Methodology

This section provides details of:

- the legislation, guidance, standards and policies that have informed the assessment;
- the consultees that have been contacted in preparing the chapter (e.g. technical officers at the local planning authority and officers at statutory consultees, such as the Environment Agency);
- the comments raised during scoping and a commentary on how the comments have been addressed within the assessment;
- where relevant, a description of how climate change, human health and risk of major accidents and/or disasters have been taken into account within the assessment;
- where relevant, any alternatives to the proposed development as set out in Chapter 5 Alternatives & Design Evolution that have been considered and assessed;

EIA METHODOLOGY

- how baseline conditions have been assessed (e.g. site visits/surveys/review of publicly available data) and the scale of sensitivity adopted within the assessment;
- how magnitude has been assessed – specifically whether there are any aspects of the project that are relevant to the assessment but not described in Chapter 3 Application Site & Proposed Development – and the scale of magnitude adopted within the assessment;
- how significance has been assessed (e.g. whether a matrix or some other approach has been adopted);
- any associated development (i.e. development which is required to facilitate the development but does not form part of the planning application, such as off-site utilities works) that is relevant to the assessment; and
- any assumptions or limitations.

Baseline Conditions

This section takes the form of a table that provides a list of:

- the key receptors that have been identified;
- a brief description of those receptors;
- the sensitivity attributed to each receptor; and
- where further details can be found within the relevant technical appendices.

Potential Significant Impacts

This section takes the form of a table that provides details of the potentially significant impacts of the proposed development, split by phase (i.e. construction or operation), and whether those impacts are likely to be adverse or beneficial in nature. It should be noted that the term construction phase has been used within this ES to refer to both the demolition and construction activities anticipated as a result of the proposed development.

Design Interventions

This section takes the form of a table and lists the design interventions that have been taken to address the potential significant impacts of the proposals, the reason(s) that the intervention was included (e.g. the siting of a building so as to avoid particularly sensitive habitats within the site boundary) and where further details can be found within the relevant technical appendices.

Assessment Pre-Mitigation

This section takes the form of a table and includes details of:

- whether the impact is relevant to the construction or operational phase of the development;
- the receptor(s) that are likely to be affected;
- the impact (including consideration of any design intervention);
- the magnitude of the pre-mitigation impact;
- the significance of the pre-mitigation impact;
- whether mitigation is proposed; and
- where further details can be found within the relevant technical appendices.

Mitigation and Enhancement Measures

This section takes the form of a table and includes details of:

EIA METHODOLOGY

- the phase during which the mitigation or enhancement measures will be implemented;
- the possible effect that is being mitigated;
- the mitigation and/or enhancement measure(s) being proposed;
- how each measure will be secured and when it will be triggered;
- the magnitude of the effect post-mitigation;
- whether the post-mitigation effect is adverse or beneficial; and
- where further details can be found within the technical appendices.

Assessment Post-Mitigation

This section takes the form of a table and includes details of:

- the phase during which the impact is applicable;
- the receptor(s) affected;
- the residual effect following the implementation of mitigation/ enhancement measures; and
- the significance of the effect and whether it is adverse or beneficial, short-, medium- or long-term, direct or indirect, permanent or temporary, and reversible or irreversible.

Inter-Project Effects

This section takes the form of two tables. The first table includes details of:

- the list of schemes identified through scoping as having the potential to result in inter-project effects alongside the development proposals;
- a brief description of the other scheme(s), including a statement on where it is in the planning/construction process; and
- a description of whether the scheme is likely to result in inter-project effects for the specific topic area under consideration.

For those cumulative schemes considered relevant to the specific topic, the second table includes details of:

- the phase during which inter-project impacts may arise;
- the receptor(s) likely to be affected;
- any additional measures that are required to mitigate the identified inter-project impacts; and
- the significance of the effect and whether it is adverse or beneficial, short-, medium- or long-term, direct or indirect, permanent or temporary, and reversible or irreversible.

In some instances, for example where the cumulative schemes are not of relevance to the specific topic, a second table is not presented but reference made to the preceding Section 'Assessment Post-Mitigation' table, as the residual effect assessment remains the relevant one.

This is also the case where cumulative schemes may be intrinsically considered within the main technical assessment, such as with transportation where committed developments are included in the modelling.

3.12 ASSESSMENT OF SIGNIFICANCE

Department of Communities and Local Government (DCLG) Guidance suggests that it is advantageous to devise generic assessment criteria for determining the significance of impacts that can apply for all environmental topics considered within an ES. This ensures that, where possible, effects are assessed in a comparable manner.

EIA METHODOLOGY

In line with DCLG Guidance and prevailing good practice, each of the environmental issues within this ES has been assessed following the same overall approach with respect to the identification of receptor sensitivity, magnitude of effects and significance of impacts. This allows all identified impacts to be assessed using the same descriptors rather than being ascribed different descriptors due to the use of different guidelines in each ES chapter.

Where methodologies have been adapted from specific industry recognised guidelines, e.g. Landscape Institute and Institute of Ecology and Environmental Management (IEEM) Guidelines, an explanation as to the chosen methodology is provided (typically within the technical appendices).

Prevailing good practice suggests that environmental impacts should be considered in terms of the importance, value or sensitivity of receptors and the predicted scale, or magnitude, of the potential effects. The significance of potential impacts should then be determined through consideration of respective sensitivity and magnitude.

Receptors & Sensitivity

Receptors are defined as the physical resources or user groups that are subject to impacts. They have been identified through a combination of desk-top studies and site visits undertaken by the various members of the EIA team. Further details are provided in each of the technical chapters, but sensitivity may depend on factors such as: rarity; quality; importance in an international, national, regional or local context and/or replaceability etc.

The sensitivity of receptors is considered as being 'very high', 'high', 'medium', 'low' or 'negligible'. A table is included within the methodology section of each chapter explaining the rationale for each of these criteria. A summary is then provided at the end of the baseline conditions section to draw conclusions relating to the perceived sensitivity of identified receptors.

Impacts & Magnitude

Impacts are generally understood to be the as the changes resulting from an action.

The magnitude of an impact is considered as being 'very large', 'large', 'medium', 'small' or 'negligible'. As with sensitivity, a table is included in each chapter explaining the rationale for each of these criteria. Where it is possible to do so, criteria are based on recognised standards and guidelines. Where this not possible, the criteria are based on expertise and professional experience.

Effects & Significance

Effects are generally understood as the consequences of impacts. The significance of the effect is informed by the magnitude of the impact and the sensitivity of the receptor.

The assessment of significance within the ES is also considered using a common scale, with effects described as being 'major', 'moderate', 'minor' or 'negligible' (which also includes neutral or no impact assessments). Rather than prescribing a particular methodology (e.g. the use of a significance matrix), the method for ascribing significance is left to the judgement of each technical consultant, so that it reflects best practice within their specialist area. Effects are considered to be 'Significant' in accordance with the EIA regulations 2011 where they are of 'Moderate' or 'Major' significance.

In addition to the significance of the effect, statements are also made as to whether effects are adverse or beneficial, direct or indirect, temporary or

EIA METHODOLOGY

permanent, reversible or irreversible, short-, medium- or long-term and/or cumulative. Definitions and examples for each are provided below:

- Adverse – a harmful or unfavourable effect (e.g. the loss of trees to allow the construction of new buildings);
- Beneficial – a favourable or advantageous effect (e.g. the creation of jobs as a result of proposed construction works);
- Direct – an effect without intervening factors (e.g. the removal of trees to allow for the construction of new buildings);
- Indirect – an effect not directly caused by the development (e.g. changes to the pattern of traffic movements across the road network as a result of a new road being constructed);
- Temporary – an effect lasting only for a limited period of time (e.g. piling during construction);
- Permanent – an effect lasting or intended to last or remain unchanged indefinitely (e.g. land reclamation from the sea);
- Reversible – an effect that is capable of being reversed so that the previous state is restored (e.g. the removal of solar panels to revert to grazing pasture);
- Irreversible – an effect that is not capable of being undone or altered (e.g. gravel extraction);
- Short term – an effect lasting between 0 and 7 years;
- Medium term – an effect lasting between 7 and 15 years;
- Long term – an effect lasting more than 15 years;
- Cumulative – increasing by one addition after another (e.g. traffic generated by a number of different developments occurring in close proximity to one another).

Assessment of Cumulative Effects

Cumulative effects can be either:

- The combined or inter-cumulative effect of the proposed development together with other existing or reasonably foreseeable developments (taking into consideration effects at both the construction and post-construction/operational phases); and
- The combined, synergistic or intra-cumulative effects caused by the combination of a number of effects on a particular receptor (taking into consideration effects at both the construction and operational phases), which may collectively cause a more significant effect than individually.

Where relevant, inter-cumulative effects are described within each technical chapter. Intra-cumulative effects, meanwhile, will be considered within Chapter 14 Summary of Mitigation & Residual Effects of the ES.

3.13 COMPETENT EXPERTS

Regulation 18(5) of the EIA Regulations 2017 states that:

"18(5) In order to ensure the completeness and quality of the environmental statement –

(a) The developer must ensure that the environmental statement is prepared by competent experts; and

EIA METHODOLOGY

(b) The environmental statement must be accompanied by a statement from the developer outlining the relevant expertise and qualifications of such experts."

Table 8 below, sets out each of the technical consultant organisations that have fed into this scoping report.

Table 8

Technical Consultant Organisations and Relevant Topics

TECHNICAL TOPIC	CONSULTANT ORGANISATION
EIA Methodology & Approach	CBRE
Transport	Mott MacDonald
Ground Conditions	Buro Happold
Water Environment and Flood Risk	WYG (Flood Risk)/ Buro Happold (Water Environment)
Noise and Vibration	WYG
Air Quality	WYG
Biodiversity	WYG
Lighting	WYG
Landscape and Visual Amenity	WYG
Daylight, Sunlight and Overshadowing	Anstey Horne
Wind	Arup
Heritage	Kevin Murphy Associates
Archaeology	Oxford Archaeology North
Socio-economics	CBRE
Solid Waste Management	WYG

Source:

4 EIA TECHNICAL CHAPTERS

An initial list of potential technical topics has been prepared based on the potential for each topic to exhibit significant environmental effects as a result of the proposed development. This evaluation process included provisional assessments for each topic. At this early stage of the design process, given the scale of the proposed development and the sensitive nature of the application site, it is considered that it is not feasible to 'scope out' the consideration of any specific technical topics.

Instead, based on the initial evaluation process, Table 9 summarises the proposed scope of the EIA and outlines the technical topics that will be:

- 'Scoped In' – those topics where further assessment beyond the scoping stage is considered necessary. As the scheme designs develop, assessments progress and consultations continue with LCC and other consultees, the approach to the consideration of these topics within the ES will be established, such that the technical assessments will either remain 'scoped in' or are 'scoped down'. Topics where significant environmental effects are considered likely will be included for detailed consideration within a stand-alone technical chapter in the main volume of the ES and are 'scoped in'.
- 'Scoped Down – those technical topics that are considered unlikely to exhibit significant environmental effects but that require further assessment to confirm this position. These topics are proposed to be 'scoped down', i.e. included within the ES - as a stand-alone document contained within the technical appendices - but not meriting detailed consideration in the main body of the document.

At this stage, only one topic is proposed to be 'Scoped Down', which is solid waste management. This is subsequently discussed in the next section.

Table 9

Proposed Approach to Topics Scope of the ES

SCOPED IN	SCOPED DOWN
Socio-Economics	Solid Waste Management
Ground Conditions	
Water	
Biodiversity	
Townscape & Visual	
Heritage	
Transport	
Air Quality	
Noise & Vibration	
Daylight, Sunlight & Overshadowing	
Wind	
Lighting	

5 SCOPED DOWN TOPICS

This section considers those technical topics that are considered unlikely to exhibit significant environmental effects but that require further assessment to confirm this position. These topics are proposed to be 'scoped down', i.e. included within the ES - as a stand-alone document contained within the technical appendices - but not meriting detailed consideration in the main body of the document.

5.1 SOLID WASTE MANAGEMENT

Context

This chapter considers the implications of the wastes arising as a result of the proposed development of the new stadium. It addresses the potential implications of the waste arising from the site preparation, construction and operational phases of the development.

Baseline Conditions

The existing site is a dock which was closed in 1988 and in recent years has been used for storage of sand and gravel. The site is currently in use by Mersey Sand Suppliers to stockpile sand dredged from the River Mersey. In terms of waste arisings, the site does not currently produce significant quantities of waste.

Key Issues and Requirements for Assessment

The proposed development would produce waste from the site preparation/construction phase as well as during the life of the site in its operational phase. It is likely that waste will be produced from the site preparation phase as the dock will require dredging prior to infilling with the dredged material to be tested before ascertaining whether disposal would be at sea or on land, and whether it would be hazardous or non-hazardous in nature. In addition, there is a large warehouse building along the southern arm of the dock that will require demolition. As such, there will be various waste streams from the initial site preparation stage.

The site has very limited vegetation and therefore, no significant amounts of organic waste are anticipated to arise from this stage of development.

Large quantities of construction waste are likely to arise from the construction of the stadium, associated infrastructure and highways improvements which would predominantly comprise inert wastes, such as stone, concrete, block, ceramics, tiles and metals. However, non-inert waste, such as timber, plastic, plasterboard, insulation, packaging, etc would arise from the fit-out stage.

Waste produced during the life of the site would be varied in nature and would be generated on an on-going basis. This waste stream would be largely associated with the administration functions (i.e. office type waste) and catering for football matches and other events, but would also arise from site, building and grounds maintenance. The quantities of waste produced would be significant on match or event days but would otherwise be relatively low in volume. The likely quantities of operational (commercial) waste produced would therefore be dependent on the number of events held.

The key sensitive receptors with respect to waste, during both the site preparation/construction and operational phases of the proposed development are waste infrastructure capacity, human receptors and environmental receptors including ecological receptors.

Construction Phase

Effects upon waste infrastructure capacity during the site preparation and construction phase are dependent upon the volumes of waste produced and the available existing and future capacity for its management.

SCOPED DOWN TOPICS

Significant effects would arise if there was insufficient management capacity for the predicted levels of waste arisings.

An initial investigation into the nearest local waste infrastructure to the site shows that there are a number of local waste management facilities capable of recycling construction and demolition wastes. These include:

- J T Leavesley (Alrewas) Limited, Canada Dock, Regent Road, Bootle, L20 8DQ – metal recycling;
- PP O'Connor Limited, 186 Regent Road, Liverpool, L20 8PT – soil treatment;
- S Norton, Regent Road, Liverpool, L20 8RQ – metal recycling;
- Recycling Aggregates Northwest Limited, Goodlass Road, Speke, Liverpool, L24 9HJ – construction and demolition waste recycling;
- CCC Waste Management and Skip Hire, Stopgate Lane, Simonswood, Liverpool, L33 4XY – non-hazardous waste recycling;
- Circle (Liverpool) Limited, Blackstone Street, Liverpool, L5 9TY – construction waste recycling; and
- Wavertree Waste and 3Cs Skip Hire Limited, 3 Combermere Street, Liverpool, L15 4NH – construction waste recycling.

The Joint Waste Local Plan (2013) for Halton Council, Knowsley Council, Liverpool City Council, Sefton Council, St.Helen's Council and Wirral Council [19] states that within the Merseyside and Halton area there are over 60 waste transfer stations which accept construction, demolition and excavation waste (some exclusively) with a combined capacity of approximately 1.3 million tonnes.

Inert and non-inert landfill capacity exists within the area which would provide a disposal route for residual construction and demolition waste which cannot be recycled. The Joint Waste Local Plan states that the total landfill void space for inert waste in the area is approximately 3.5 million cubic metres (m^3) [19].

Operational Phase

As with the construction phase, effects upon waste infrastructure capacity during the operational phase of the development are dependent on the volumes of waste produced and the available existing and future capacity for its management. Significant effects could arise if there was insufficient management capacity for the predicted levels of waste arisings.

Goodison Park operates as a 39,150 maximum capacity stadium (with further reductions anticipated) and currently manages waste production appropriately.

Commercial waste arisings generated during the operational phase of the new stadium at BMD, may comprise up to a 51% increase based simply on the increase seating capacity. However, the proposed development will include for appropriately sized waste management facilities.

Commercial waste arisings are likely to be collected and managed by a private waste contractor. However, Liverpool Streetscene Services (a wholly owned subsidiary of Liverpool City Council) provides a waste collection service for commercial organisations and businesses, and therefore this is also a potential option for the operational waste collection arrangements.

The Joint Waste Local Plan states that Merseyside is well served by commercial and industrial Material Recycling Facilities and Waste Transfer Stations. It also states that there are '*a number of privately operated open windrow composting facilities and a plethora of re-processors which serve both the commercial and industrial sectors, as well as taking municipal wastes*'. There is also substantial energy recovery capacity for residual commercial waste at the Ineos Chlor Energy from Waste plant at Runcorn.

SCOPED DOWN TOPICS

The Joint Merseyside and Halton Waste Local Plan 'Implementation and Monitoring Report 2015-16. Monitoring period 1st April 2015 to 31st March 2016' (November 2016) states that the two local non-hazardous landfill sites (Lyme and Wood Pit) were scheduled to close on 12th June 2016 after which only restoration soils could be brought to the site. The closure of these sites would give rise to a shortfall in municipal waste disposal capacity. The Monitoring Report 2015-16 acknowledges that the continuing need for various types of waste facilities is beginning to be met by the consented and recently permitted sites. There is a need for up to four Local Authority Collected Waste and commercial and industrial waste (50,000 tonnes per annum (tpa)) food waste composting facilities within the area by 2020. These facilities are in addition to ReFood's 90,000 tpa plant in Widnes and a smaller 25,000tpa anaerobic digestion plant in St. Helens. This is relevant to the proposed development as a significant proportion of the commercial waste arisings will comprise food waste.

Assessment Methodology

The potential effects associated with waste arising from the proposed development would be considered within a 'scoped down' assessment. An assessment would be made of the estimated waste volumes which would arise from the development and the likelihood that this waste could be accommodated within the local waste infrastructure. An assessment of the potential for significant environmental effects would then be provided.

Predicting Waste Volumes

Estimated quantities of construction waste for this development would be based on guidance provided by Building Research Establishment (BRE) and Waste and Resources Action Programme (WRAP). The estimates would be based on a number of factors, including floorspace figures.

Operational waste volumes would be estimated using publically available information relating to similar schemes. Where possible, information on current waste arisings would also be obtained from EFC.

Construction Effects

Human and Environmental Receptors

There are a number of residential areas located within 1,000m of the proposed development site boundary, whose occupants have the potential to be affected by waste generated from the site preparation and construction activities. However, it is considered likely that the human receptors who are most at risk are site workers. This is attributed to the increased likelihood of exposure when compared, for example, with local residents. Site workers will not only handle site waste but will have access to waste storage areas. Local residents are unlikely to be exposed to construction waste.

The proposed development site is located within 2km of the Mersey Narrows & North Wirral Foreshore Ramsar site, the Mersey Narrows & North Wirral Foreshore Special Protection Areas and Mersey Narrows Site of Special Scientific Interest. The site also falls entirely within the UNESCO World Heritage Site: Liverpool – Maritime Mercantile City.

It is assumed that during the construction phase of the development all legislative requirements are met, including the Duty of Care and relevant health and safety legislation, and therefore that waste will be handled in a manner which does not impact upon the environment or human health and safety.

SCOPED DOWN TOPICS

Waste Infrastructure Capacity

Given the scale of the proposed development an assessment will need to be made as to whether there is sufficient capacity for the construction waste sectors to manage the predicted arisings.

Operational Effects

Human and Environmental Receptors

As with the construction waste, it is assumed that all legislative requirements in relation to handling of waste arisings are met and therefore that waste will be handled in a manner which does not impact upon the environment or human health and safety.

Waste Infrastructure Capacity

An assessment will also need to be made to determine whether there is capacity in the local market to accommodate the waste generated by the proposed stadium.

Summary

A 'scoped down' assessment will be made of the potential effects arising from construction and operational phase wastes. It is considered that waste will not have an adverse effect on human receptors or on the local environment, and therefore the assessment will focus on waste infrastructure capacity.

Where required, details will also be provided regarding the need for mitigation, which is additional to that inherent within the design. All mitigation measures will be described in detail within the assessment.

6 SCOPED IN TOPICS

This section considers the likely significant environmental effects of the proposed development and therefore those technical topics proposed to be 'scoped in' for detailed consideration within the ES.

6.1 TRANSPORTATION

Context

From a transport perspective, the nature of the proposed development will generate trips on both match and event days, as well as on non-match days associated with the other possible uses. Increased use of the highway network by movements associated with the proposed development has the potential to impact upon sensitive receptors who may be highway users or located in close proximity to the affected highway links.

The EIA will be supported by a full Transport Assessment (TA) and Travel Plan which will set out strategies to outline the management and monitoring of movements and access to the application site during construction, for match and event days as well as on a day to day (non-match or event) basis.

These strategies will form part of a package of mitigation measures to be identified from the TA and EIA which will together assist in reducing the significant of the effects of the proposed development upon sensitive receptors.

Baseline Conditions

The application site at BMD is well located to benefit from public transport access as well as being easily accessible on foot or by bicycle from the City Centre. This will help to reduce the need for reliance upon the private car and support the promotion of sustainable access to and from the application site on both match and non-match days. The current 2017 baseline position is briefly explained below, to be expanded upon as part of the EIA.

Local Highway Network

Regent Road is currently a wide, 30mph adopted highway route and mainly used by vehicles travelling to the surrounding businesses or as an alternative route to A565 Great Howard Street. Some on-street informal car parking exists along the route as well as marked coach parking bays. There are multiple side roads from Regent Road which connect through to Great Howard Street, all of which take the form of priority junctions with Regent Road being the main through route.

On-site observations suggest that it has a high proportion of HGV movements and due to the straight alignment of the route, speeds appear high which may present a certain level of intimidation and severance for pedestrians but needs to be quantified to confirm this.

Work undertaken as part of the Transport Assessment (TA) would look to understand the movements within the local highway network from a quantitative prospect with this information being used to inform the EIA process for transport. This would include understanding traffic flows, composition (i.e. percentage of heavy goods vehicles) and speeds.

Other surrounding highway links would be affected by the proposed development, particularly on match and event days due to road closures and diversions to ensure pedestrian safety. The full study area for this assessment will be developed for the TA and used to inform the EIA. Baseline information on the full highway study area would be presented in the Environmental Statement alongside non-vehicular modes.

SCOPED IN TOPICS

Rail

The nearest station to the application site is Sandhills. This is located approximately a 1km distance / 12 minute walk time (based on a speed of 5km/hour) from the application site and provides access to the Merseyrail Northern Line with connections to residential areas to the north of the application site and interchange options at Southport, Ormskirk and Kirkby, as well as southwards through Liverpool City Centre to Hunts Cross, including a stop at Liverpool South Parkway, a major P&R station in south Liverpool. The Northern Line from Sandhills passes through Liverpool Central which not only provides access to the city centre for services such as hotels but also the Wirral Line in a westbound direction to serve Wirral and Chester. Moorfields, just one stop from Sandhills, provides access to the Wirral Line in an eastbound direction to provide a connection to Liverpool Lime Street (and then on to Liverpool Central as noted above) from where longer distance mainline rail services to destinations such as Manchester, London, Birmingham, Preston, Blackpool and Wigan can be caught to allow access to the wider rail network.

Services on the Northern Line currently operated in both directions from Sandhills (south into Liverpool or north to either Southport, Ormskirk or Kirkby) every 5 minutes in each direction Monday – Saturday from 6am until close to midnight and on Sundays from 8am to close to midnight.

Bus Services

Due to the current land use around the application site no providing significant demand, there are limited existing bus services which travel to/from the immediate area, however there are good service connections on A565 Great Howard Street which runs semi-parallel to Regent Road. Current services on this route include the 101 to Belmont Road (Anfield), and the 135 and 235 both to Netherton, with all three services connecting in the opposite direction with Liverpool City Centre. Between them, they provide a service on Great Howard Street approximately every 15 minutes in each direction. More detailed information would be collated on bus services and presented in the Environmental Statement.

Walking and Cycling

There are existing footways along Regent Road to support pedestrian movements and a new puffin crossing just south of the junction with Walter Street near the Titanic hotel. Other crossing points along the road are minimal with limited central reservations or pedestrian islands provided south of the application site to support pedestrian crossings.

There are no existing cycling infrastructure provisions on Regent Road (although it is understood these are planned) but provisions on surrounding streets would be captured for Transport Assessment and used to inform the EIA.

Receptor Identification

An early stage of the assessment would be the identification of sensitive receptors within the transport study area that may be impacted upon by the proposed development during the construction and/or operation phase. These would consist of certain highway users groups as well as receptors located in close proximity to the highway.

Key Issues and Requirements for Assessment

In accordance with guidelines produced by the Institute of Environmental Management and Assessment [5], within the context of EIA, consideration of transport impacts should be given to the following all of which are as a result of increased flows associated with the proposed development on the local highway network:

- Severance;

SCOPED IN TOPICS

- Driver delay;
- Pedestrian delay;
- Pedestrian amenity; and
- Accidents and safety.

Whilst sustainable travel to and from the application site will be central to the transport strategy, demand for match and event day travel are likely to exceed the capacity of the immediate surrounding highway network, causing congestion, delay and severance due to a higher concentration of vehicles in the local area associated with the proposed development.

On-street parking, particularly in residential areas if uncontrolled, could displace residents from being able to park within their street causing stress and delay to their journeys.

During the construction phase, there will be a requirement for some materials to be brought to site by road, meaning an increase in HGV movements. This may have a significant effect upon some sensitive receptors. Likewise, there may be some on-going impact from HGV movements associated with the servicing of the proposed development. Other modes such as boat may be applicable for some construction use.

Public transport provision will be assessed to identify whether there may be effects from the construction or operation of the proposed development, for example a need for temporary road closures and diversions.

Assessment Methodology

The Transport Assessment will assess the impact of the proposed development upon the operation of the highway network. The EIA chapter will provide a brief summary of the TA findings and an assessment of the significance of the effect on the identified receptors.

Our approach to the Transport EIA is outlined below.

Establishment of a Study Area

Whilst the extents of the proposed development are already identified, the implications for transport will be further reaching and one of the first steps will be the identification of an appropriate study area for considering transportation effects within. This would be scoped as part of the Transport Assessment and the same study area applicable to the EIA.

Developing an Understanding of the Baseline Position

The first step will be to collate a robust and solid understanding of the baseline position for the proposed development, building upon the details outlined earlier within this chapter. This will cover all modes and set out what currently occurs in relation to transport in the vicinity of the application site. Additional baseline data to collect or collate includes:

- Traffic flows for the key routes around the application site to cover the study area.
- Information on the current operation of traffic signals in the area.
- Location of pedestrian crossing points.
- Audit and identification of existing on and off-road cycling infrastructure between the application site and Liverpool City Centre.
- Accident and non-injury data.
- Details on public transport provisions for bus and rail including service providers, frequencies, and routes.
- Extents of highway boundaries and existing Traffic Regulation Orders.
- Identification and mapping of receptors and determining their sensitivity.

SCOPED IN TOPICS

- Audit of potential car and coach parking locations and availability.

Policy Review

Key relevant national, regional and local policies will be reviewed to identify where the proposed development or mitigation associated with it needs to align with existing adopted policy guidelines. Policy documents to be considered will include:

- National Planning Policy Framework
- Liverpool Local Plan (currently in draft format)
- Liverpool City Centre Strategic Regeneration Framework
- Liverpool City Region Long Term Rail Strategy
- Merseyside Local Transport Plan 3
- Ensuring a Choice of Travel SPD
- Merseyside Active Travel Strategy
- Guide to Safety at Sports Grounds
- Accessible Sports Facilities (Sport England)
- Other policy or guidance documents identified as being relevant from discussions with stakeholders.

Assessment of Potentially Significant Effects

Assessment of the key issues (severance and delay) will be undertaken subject to the following thresholds for identified peak periods within non-match day scenarios of assessment:

- Highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles increase by more than 30%); and
- Any sensitive areas where there is a 10% or more increase in traffic flows.

Where increases in traffic are found to be lower than the noted assessment thresholds, the guidelines suggest that the significance of the effect can be noted as negligible and therefore does not warrant further assessment.

Where changes in traffic flows are found to exceed these thresholds, further assessment will be undertaken in relation to the significance of the effect.

Due to the nature of match and event days, there are likely to be locations where links experience a higher level of flows before or after the match/event or delays associated with road closures and diversions, however these would be very temporary in nature lasting for an hour or so either side and for only several days per year and therefore not considered significant. Commentary would be provided in the ES in relation to the expected impact for match and event days and the significance of this effect upon the receptors, however it is expected that delays to journeys are most likely with mitigation such as highway infrastructure improvements not practical for reducing the significance of the impact.

Assessment Criteria

For the Transport EIA, the following criteria will be applied for the magnitude, sensitivity and significance of affects, using guidelines presented by DMRB and IEMA.

The following magnitudes of potential effects (beneficial or adverse) on the baseline environment will be applied to the transport assessment:

- Major Magnitude - Total loss or major/substantial alteration to key elements and features of the baseline (pre-development) conditions

SCOPED IN TOPICS

such that the post development character or composition will be fundamentally changed.

- Moderate Magnitude - Loss or alteration to one or more key elements/features of the baseline conditions such that post development character or composition of the baseline will be materially changed.
- Minor Magnitude - A minor shift away from baseline conditions. Change arising from the loss/alteration will be detectable but not material. The underlying character or composition of the baseline condition will be very similar to the pre-development situation. The change may be temporary or short term.
- Negligible Magnitude - Very little change from baseline conditions. Change barely distinguishable, approximating to a 'no change' situation.

The magnitude of the effect would be considered taking into account the following elements as well as through the application of professional judgement with quantitative thresholds identified where possible (e.g. split by seconds of delay or absolute change in flows):

- Relevant and applicable legislation, policy or guidelines;
- The degree to which the environment is potentially affected e.g. is the environment improved or impaired;
- If the effect is beneficial or adverse to sensitive receptors;
- The scale or degree of change from baseline conditions as a result of the proposed development;
- The duration of the effect e.g. if it is temporary or permanent in nature with temporary effects considered less significant than permanent ones; and
- The reversibility of the effect.

In terms of sensitivity, the following sensitivities will be applied:

- Very High Sensitivity – the receptor has little or no ability to absorb change without fundamentally altering its present character is of very high environmental value, or of international importance.
- High Sensitivity – The receptor has low ability to absorb change without fundamentally altering its present character, is of high environmental value, or of national importance.
- Medium Sensitivity – The receptor has moderate capacity to absorb change without significantly altering its present character, has some environmental value, or is of regional importance.
- Low Sensitivity – The receptor is tolerant of change without detriment to its character, is of low environmental value, or local importance; and
- Negligible Sensitivity – The receptor is resistant to change or is of little environmental value.

When determining the significance of the effect, the relationship between the receptor sensitivity and magnitude of the effect is considered, and the following matrix will be applied.

SCOPED IN TOPICS

Table 10

Significance of Effect Matrix

SENSITIVITY	MAGNITUDE			
	NEGLIGIBLE	MINOR	MODERATE	MAJOR
VERY HIGH	Slight	Moderate or Large	Large or Very Large	Very Large
HIGH	Slight	Slight or Moderate	Moderate or Large	Large or Very Large
MEDIUM	Neutral or slight	Slight	Moderate	Moderate or Large
LOW	Neutral or slight	Neutral or Slight	Slight	Slight or Moderate
NEGLIGIBLE	Neutral	Neutral or Slight	Neutral or Slight	Slight

The significance is determined as:

- Very Large (adverse only)
- Large (beneficial or adverse)
- Moderate (beneficial or adverse)
- Slight (beneficial or adverse)
- Neutral

Cumulative Development Assessment

The cumulative development noted in section 3.4 will be considered in relation to what impact they will have upon changes to traffic flows in the study area, and their contribution to any of the affects assessed. Consideration would be given to these cumulative developments in the context of transport and how they would alter demand upon the highway network or change/enhance existing infrastructure in the area as part of their proposals.

Identification of Mitigation

Any off-site highway infrastructure such as junction improvements or the requirement for Park and Ride (P&R) sites would be identified as part of assessments undertaken in the TA and would be designated as Associated Development and subject to an EIA of its own within the main assessment. Any such off-site works are yet to be confirmed in terms of their scope or location but will be further discussed with the appropriate consultees to ensure that they have been adequately assessed within the EIA.

As noted earlier, the TA will also include a strategy for the management of movements on the highway network which will help to reduce the impact of increased trips upon the highway network in relation to severance, delay and fear/intimidation. This may also include upgrade to existing walking/cycling facilities to support sustainable accessibility as well as the possibility for improvements to Sandhills station to accommodate match and event day demand.

Proposed changes where BMD abuts to Regent Road as part of the proposed development, including the provision of public realm will support pedestrians and cyclists in the area and reduce instances of severance and fear/intimidation.

Assessment of Residual Effects

Following consideration of any proposed mitigation, the previously assigned significance ratings will be re-assessed for each effect to determine the extent to which the significance reduces and hence the remaining significance of residual effects.

SCOPED IN TOPICS

6.2 AIR QUALITY

Context

The Chapter will assess the potential effects of the development with respect to air quality during the construction and operational phases. Poor air quality can cause damage to the natural and built environments and human health. The Proposed Development has the potential to deteriorate local air quality, predominantly through increased traffic movement.

The proposed development site is located within the Liverpool City AQMA, which encompasses the whole City of Liverpool.

Baseline Conditions

The existing air quality monitoring network comprises of two automatic, and 73 non-automatic diffusion tubes across the City of Liverpool. It is considered that the existing diffusion tubes close to the site will enable a suitable verified model.

The last air quality assessment report for the City of Liverpool was produced in January 2016 which stated that;

'The USA presented in this report indicates that Nitrogen Dioxide (NO2) concentrations will exceed the annual mean NO_2 air quality objective of 40 at 85% of the locations where passive diffusion tube monitoring was undertaken in 2014. This is a similar situation to 2012 and 2013 where passive diffusion tube data was presented in a series of progress reports.'

Key Issues and Requirements for Assessment

Due to the location of the proposed development residing within the Liverpool City AQMA, receptors within the AQMA shall be included within the air quality assessment to determine if there are likely to be significant impacts upon the AQMA.

The key issues with regards to air quality are considered to be:

- The effect of dust emissions arising from the site during the construction phase;
- The effect of additional traffic emissions as a result of the development on existing residential and ecological receptors including the Mersey Narrows Ecological Area;
- The effects of any emissions from a proposed energy centre on existing residential and ecological receptors.

Assessment Methodology

Construction Phase

A semi-quantitative assessment of the air quality effects of the construction phase of the development would be undertaken in accordance with the Institute of Air Quality Managements 'Guidance on the Assessment of the Impacts of Dust from Demolition and Construction' document. Appropriate site specific mitigation would be recommended in accordance with the IAQM document for inclusion in the Construction Environmental Management Plan.

Operational Phase

Computer based modelling of the predicted changes of traffic emissions within the study area would be undertaken using an approved atmospheric dispersion modelling package (ADMS Roads). The model would provide predicted annual average concentrations of nitrogen dioxide (NO_2) and PM_{10} at receptors within the study area for the year of opening. Specifically the model would assess air quality within the study area with reference to the UK Air Quality Standards, and would describe the significance of the air quality changes within the development with reference to non-statutory

SCOPED IN TOPICS

guidance issued by EPUK, IAQM issued January 2017 and guidance within the NPPF.

A baseline air quality dispersion model would be developed for the study area and it would be verified using the latest LAQM Progress Report for Liverpool City Council. The verification would be undertaken in general accordance with DEFRA issued guidance (LAQM Technical Guidance TG(16)). The baseline and assessment year models would include traffic data for the local road network, representative local meteorological data and background pollution data from the national air quality archive.

The impact of energy sources will also be assessed. The impact of source emissions will be modelled to determine the additional exposure of nitrogen dioxide at key receptors and to determine the magnitude of the long and short term exposures of nitrogen dioxide and PM_{10} emissions from the energy point sources.

To assess the air quality impacts of the energy sources on the local air quality a quantitative assessment will be assessed using the third generation Breeze AERMOD dispersion model. AERMOD is a development from the ISC3 dispersion model and incorporates improved dispersion algorithms and pre-processors to integrate the impact of meteorology and topography within the modelling output.

SCOPED IN TOPICS

6.3 NOISE

Context

The ES will include an assessment of the effects of the proposals on the existing levels of noise in the vicinity of the site, with particular regard to existing and proposed residential properties, sensitive ecological sites, community facilities (e.g. schools, hospitals etc.) and amenity areas/open spaces.

The change in noise levels on sensitive receptors will be identified and assessed both during the construction and operational phases of the development.

The assessment will also look at any potential increases in noise levels based on changes in traffic flows on the surrounding road network due to the development.

Baseline Conditions

The baseline position for the existing noise environment in and around the application site will be established by a noise survey utilising a combination of short-term attended measurements and long-term unattended measurements covering both weekday and weekend periods. The study area for the assessment of operational noise sources will extend 1.5 km to the west of the development site, encompassing the Mersey narrows and North Wirral Foreshore SPA and Ramsar sites and residential properties located in Egremont. To the north, east and south of the development site, the study area will extend up to 0.5 km from the respective site boundaries, taking into account existing and proposed residential properties.

The extent of the study area associated with the road traffic noise assessment will be determined by the spatial extent and results of the traffic assessment, with roads expected to experience changes in traffic volumes of 25% or greater included within the assessment.

Key Issues and Requirements for Assessment

The principal source of noise impacting nearby existing and proposed receptors will be from crowd noise associated with sporting events and amplified speech and music. Additional consideration within the ES will be given to crowd noise within external concourses and as part of the access and egress of the stadium, ancillary operations associated with the stadium (including deliveries and fixed plant noise), car parking and road traffic noise.

Assessment Methodology

The assessment will be carried out in accordance with acknowledged best practice. The spatial scope will encompass an agreed area from the likely sources of noise in which sensitive receptors will be identified.

A noise survey will be undertaken. Recorded parameters will include the L_{A90}, an indicator of the underlying background noise, L_{Aeq}, the equivalent continuous noise level and an indicator of total ambient noise, the L_{Amax}, the maximum noise level recorded, and the L_{A10}, index conventionally used to assess road traffic noise in the UK. Measurement practice will be in accordance with the principles of the relevant British and International standards.

In order to account for the effects of distance and screening (for example from the proposed development itself) of sources on the noise levels across the site, a noise prediction model will be constructed using the Cadna-A software package. The model will also be used to predict any changes in road traffic noise levels as a result of any predicted changes in road traffic

SCOPED IN TOPICS

flows as a result of the scheme and if these changes will have any significant effects of existing sensitive receptors.

The study will assess the significance of the effects of these sources on the proposed receptors, and identify appropriate levels of mitigation in accordance with appropriate guidance.

Cross-references to the issues considered in the transportation chapter of the ES will be made where necessary and relevant.

Where required, stationary of fixed plant associated with commercial premises will be designed to achieve a rating noise level below or equal to background, in accordance with BS4142.

Operational noise sources will be assessed against BS 8233:2014, BS 4142:2014, WHO Guidelines on Community Noise (1999) and IEMA Guidelines on Environmental Impact Assessment (2014).

Construction noise will be assessed using BS5228 and suitable controls including site boundary limits and operating hours recommended depending on phasing.

SCOPED IN TOPICS

6.4 DAYLIGHT, SUNLIGHT, OVERSHADOWING AND SOLAR GLARE

Context

This section of the ES describes the potential effects with regard to daylight, sunlight, overshadowing and solar glare that may occur during demolition, construction and operation of the proposed development as well as when the development is complete.

To assess daylight, sunlight, overshadowing and solar glare the BRE guidelines (BRE) report 2011 "Site layout planning for daylight and sunlight – A guide to good practice" will be used. With regard to daylight, sunlight and overshadowing, the guidelines at paragraph 2.2 state:

"The guidelines given here are intended for use for rooms in adjoining dwellings where daylight is required, including living rooms, kitchens and bedrooms. Windows to bathrooms, toilets, store rooms, circulation areas and garages need not be analysed. The guidelines may also be applied to any existing non-domestic building where the occupants have a reasonable expectation of daylight; this would normally include schools, hospitals, hotels, hostels, small workshops and some offices".

Using this guidance, the sensitive receptors that will be assessed are habitable rooms to residential dwellings, religious worship areas and school classrooms, as the occupants of these properties have an expectation of light.

Solar glare can be a problem when there are large areas of reflective glass or reflective cladding. Glare can affect road users outside, train drivers of adjoining railway tracks, occupants of adjoining buildings and occupants controlling boats passing along waterways (in this case the river Mersey).

Baseline Conditions

The application site is located within the docks of Liverpool and will be built on Bramley-Moore Dock. Nelson Dock is located to the south, Wellington Dock and Sandon Half-Tide Dock to the north and a mixture of residential and commercial properties to the east. The current application site is part of a wider outline planning permission called Liverpool Waters undertaken by Peel Developments.

Key Issues and Requirements for Assessment

The demolition and construction phases of the proposed development are not relevant for the assessment of daylight, sunlight and overshadowing because the full effects will only occur once the proposed development is completed and occupied. Nevertheless, a qualitative summary of the short term effects of demolition and construction phase will be carried out for the potential impacts upon daylight, sunlight and overshadowing of the adjacent residential buildings.

To identify the residential receptors around the site, council tax research has been undertaken for properties as well as a site inspection on 4th May 2017. Through this research the following properties have been identified:

- 62-63 Regent Road, Kirkdale, Liverpool, L5 9SY
- Bramley Moore Public House (residential above), 32-34 Regent Road, Kirkdale, Liverpool L5 9SR

For solar glare, the possible points that could be affected by solar glare are the junction between Blackstone Street and Regent Road, the approach north on Regent Road and waterways on the river Mersey. The consented Liverpool Waters development will obscure potential glare from the south, before the proposed stadium could cause an issue to any of the sensitive receptors highlighted above. In addition, the stadium is unlikely to contain

SCOPED IN TOPICS

highly reflective material so the risk of solar glare will be further reduced. Therefore it is not considered necessary to undertake a solar glare assessment for the proposed development.

For the cumulative assessment, the consented outline massing for Nelson Dock and Bramley-Moore Dock will be taken as the future baseline. Further cumulative scheme details are provided in Section 3.4.

As part of the cumulative assessment it is the intention to test the residential outline blocks as part of the Peel Developments Liverpool Waters outline planning permission at Nelson Dock. The outline school block at Nelson Dock will also be considered.

Assessment Methodology

The methodology required for the purposes of assessment will be based upon the building research establishment (BRE) report 2011 "Site layout planning for daylight and sunlight. A guide to good practice". This is the guidance used nationwide by local planning authorities and light practitioners as a means of evaluating daylight, sunlight and overshadowing effects.

Detailed daylight and sunlight assessments for all existing residential buildings, school buildings and religious worship areas will be undertaken. Façade study testing will be undertaken for the outline blocks at Nelson Dock.

The detailed daylight, sunlight and overshadowing tests that will be undertaken are as follows:

- Vertical Sky Component (VSC), Daylight Distribution (DD – 'No sky-line test') and Annual Probable Sunlight Hours (APSH) to all existing neighbouring buildings in the vicinity of the site.
- The two hour sun on ground contour assessment on all existing and proposed neighbouring gardens and amenity spaces.
- VSC facade testing of the consented blocks for Nelson Dock. (Sunlight assessments will not be required as the Development Site is due north of Nelson Dock).

The only detailed UK guidance on reflected solar glare is contained in the BRE information paper P3/87, '*solar dazzle reflected from sloping glazed facades*' published in April 1987. This guidance can be used to predict the dates and times when reflected solar glare may potentially occur at a view point. It does not measure the intensity of the reflections as the methodology does not take into account the reflectance of the materials or their specularity (i.e. how smooth and mirror-like they are). Nevertheless, this is the conventional approach adopted in the majority of reflected solar glare assessments submitted to local planning authorities.

SCOPED IN TOPICS

6.5 WIND

Context

A safe and comfortable wind climate is integral to the success of any development. New stadium and buildings can generate wind acceleration at ground level which could result in discomfort or distress to pedestrians. This section will provide an assessment of the likely significant effects of wind movements within and around the development once constructed with respect to pedestrian wind comfort and safety. This will include identifying effects the development may have on any sensitive receptors nearby, and during construction and operational phases.

Baseline Conditions

The baseline configuration considered in this study will be in the context of the existing surroundings in Liverpool. The development site currently includes the existing structures of the large warehouse building to the south of the dock, the Hydraulic Engine House to the north east of the development site, other limited small scale brick buildings in significant disrepair and the Dock Wall along the east of the site adjacent to Regent Road. To the west of the site is the open expanse of the River Mersey estuary.

The existing wind microclimate forms the baseline with which the proposed development is assessed. The potential impact of wind microclimate during the construction and operational phases on existing residents and businesses would therefore need to be considered and details provided within the application submission of any potential measures to mitigate adverse impacts.

The proposed development has a potential to cause significant windiness within the site itself and in the surrounding areas as a result of the significant height of the Stadium and exposure to the prevailing wind. The focus of the assessment will therefore be within the Site boundary and the immediately surrounding area.

Key Issues and Requirements for Assessment

The National Planning Policy Framework (NPPF) does not contain any planning policies directly relating to wind microclimate issues. However, the benefits of a high quality built environment are emphasised in the NPPF. For example, paragraph 58 states development should use: "…streetscapes and buildings to create attractive and comfortable places to live, work and visit…" and paragraph 110 states "In preparing plans to meet development needs, the aim should be to minimise pollution and other adverse effects on the local and natural environment."

LCC and relevant statutory and non-statutory bodies may be contacted to discuss the proposed assessment set out below, in particular the future surroundings to be considered.

The proposed development may require mitigation to achieve suitable wind conditions in and around the site. Consultation will be undertaken with the relevant stakeholders to identify possible constraints for the mitigation strategy and to seek agreement for any proposed mitigation measures.

Assessment

Wind tunnel tests will be carried out to quantify conditions around the proposed development. The tests will include the effects of all nearby existing and consented schemes that would affect wind conditions around the site. Likely future surroundings, if any, will also be considered.

Levels of windiness will be reported using the Lawson criteria and compared with the intended pedestrian activities at frequently used areas.

SCOPED IN TOPICS

Tests will be repeated to develop and incorporate suitable mitigation measures into the design.

Methodology

A quantitative assessment of the environmental wind conditions will be undertaken for the existing and proposed development through wind tunnel testing. Tests will be undertaken using a ~1:300 scale model of the development and surroundings.

Gust and mean speeds will be measured in key locations around the development will be measured using Irwin probes. The Irwin probes will be located in areas of wind-sensitive activities or where we expect increased windiness due to the geometry and exposure of the proposed development. For each test configuration, wind speeds will be measured for sixteen equal increments of wind directions.

If windiness exceeds acceptability guidelines, we will develop, in collaboration with the design team, feasible mitigation measures and verify the effectiveness in the wind tunnel.

The criteria used to describe the acceptability of windiness are those of T.V. Lawson of Bristol University, extracted from "The evaluation of the windiness of a building complex before construction", T.V. Lawson, London Docklands Development Corporation. These are used widely in the UK and around the world.

SCOPED IN TOPICS

6.6 LIGHTING

Context

This chapter provides the lighting scoping assessment and discusses the potential for the development to significantly affect this aspect of the environment.

Baseline Conditions

The closest residential receptors are located along Regent Road opposite the site and in terms of the future baseline, will also be located at the adjacent Nelson Dock. In addition to residential receptors, ecological receptors, such as light sensitive bats, have the potential to be present around the site at the Mersey Narrows ecological area. Such receptors are of high sensitivity.

The baseline environment will be established by measuring existing pre-curfew and post-curfew lighting conditions. Both existing and proposed residential receptors as well as ecological receptors will be considered. Full details of the light survey will be presented as an appendix of the ES.

Key Issues and Requirements for Assessment

The key issues for the proposals include light spill from floodlighting and car park lighting on to sensitive receptors:

- Residential receptors;
- Ecological receptors;
- The effect on the night sky;
- Potential for effects on aviation associated with Liverpool John Lennon Airport;
- The effect on heritage assets – this will be addressed separately under the Heritage ES Chapter.

Assessment Methodology

Lighting from the proposed development including flood lighting, external lighting (e.g. car parking) and advertisements will be modelled to assess potential impacts to both existing and proposed residential units as well as any potentially sensitive ecological receptors and Liverpool John Lennon Airport.

A 3D representation of the proposed development and surrounding area will be produced within the DIALux light model, based on the proposed Masterplan and the specifications of proposed light sources. Specifications of typical case lighting columns may also be utilised should this data be unobtainable.

Light trespass will be predicted at the proposed sensitive receptor locations and compared with the guideline values stipulated within the ILP document, 'Guidance Notes for the Reduction of Obtrusive Light' in order to provide an indication of the potential impacts of existing light sources at proposed property façades. Where light trespass at proposed receptors is deemed to be significant, mitigation options will be presented.

SCOPED IN TOPICS

6.7 BIODIVERSITY

Context

Biodiversity can be defined as "the variability among living organisms from all sources, including, 'inter alia', terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part: this includes diversity within species, between species and of ecosystems" [19].

The following section sets out the intended scope of the assessment work for both terrestrial and aquatic ecology in order to establish the baseline conditions at the site and assess the likely significant effects of the proposed development during the construction and operational phases.

Baseline Conditions

Terrestrial Ecology

The site itself is generally considered to be of low terrestrial ecological value. There are, however, a number of statutorily designated sites for nature conservation within the Zone of Influence of BMD. These include:

- Mersey Narrows & North Wirral Foreshore Ramsar Site (Ref. UK11042);
- Mersey Narrows & North Wirral Foreshore Special Protection Areas (SPA) (Ref. UK9020287); and
- Mersey Narrows Site of Special Scientific Interest (SSSI) (Ref. 1056551).

Aquatic Ecology

The aquatic environment includes BMD, within which the proposed development is situated, and the surrounding dock network.

The site falls within the Lower Mersey River Basin – Mersey Estuary Catchment. The associated North West River Basin District River Basin Management Plan sets a number of actions to meet the requirements of the Water Framework Directive (WFD).

A desk study carried out by WYG in 2014 reviewed the baseline information available of relevance to aquatic ecology in the Liverpool Waters docks. This identified several data sources including some relating to the neighbouring Nelson and Sandon docks. The data for Nelson dock was from a Seasearch dive recorded on the NBN Gateway and indicated that the following habitats were present:

- Vertical dock wall with common mussel (*M. edulis*) superabundant at depths shallower than 5 m and abundant between c. 5m and 6m.
- Submerged barge with *M. edulis* abundant, particularly on the deck and upper surfaces. Australian tubeworm (*F. enigmaticus*) also abundant, particularly on the external surface of the hull.
- Soft sediment on dock floor (likely to be largely barren).

An updated review of baseline data will be carried out at the start of the EIA.

Key Issues and Requirements for Assessment

Terrestrial Ecology

The potential for ecological features to be affected as a result of the proposed development will be assessed, taking into consideration any direct loss of habitats and associated flora or fauna; indirect effects on flora or fauna; effects on any sites of nature conservation importance; and specific effects on protected species, both during the construction and operational phase of the development.

The construction effects to be considered will include:

- Temporary land-take

SCOPED IN TOPICS

- Disturbance (e.g. visual disturbance, noise)
- Pollution (e.g. dust generation)
- Lighting
- Construction site hazards.

The operational effects to be considered include:

- Permanent land-take
- Anthropogenic/urban effects (including recreational pressure, disturbance etc)
- Air Quality / pollution
- Permanent lighting

Aquatic Ecology

There are a number of invasive non-native marine species (INNS) known to inhabit Liverpool Docks, including species such as the stalked sea squirt *Styela clava*, orange-striped green sea anemone *Haliplanella lineata* and *Ficopomatus enigmaticus*. Legislation is in place under Section 14(1) of the Wildlife and Countryside Act (WCA) 1981 to make it illegal to release or allow to escape any animal which is not ordinarily a resident of the UK. It will therefore be necessary to determine whether such species are likely to be present within BMD and if so to take necessary measures to avoid their spread during the construction phase.

There is potential for direct disturbance to fish inhabiting the dock during the process of silt removal. European eel (*Anguilla Anguilla*) has been recorded within the Liverpool docks and is listed as Critically Endangered on the IUCN Red List, is a UKBAP Priority Species and is a species of principal importance for the purpose of conserving of biodiversity under the Natural Environment and Rural Communities Act 2006. DEFRA have published a management plan for eel in the North West River Basin District which includes the Liverpool area.

Environmentally harmful contaminants, such as Tributyltin (TBT), are likely to be present in the dock sediments based on the industrial past of the area and as observed in neighbouring docks. There is potential for these contaminants to be released into the Mersey estuary and wider marine environment during silt removal and disposal.

Assessment Methodology

Terrestrial Ecology

A qualitative and quantitative ecological impact assessment will be undertaken, following the principles set out in the Chartered Institute of Ecology and Environmental Management (CIEEM) publication Guidelines for Ecological Impact Assessment in the United Kingdom [21], and will include an assessment of cumulative effects, details of appropriate mitigation measures, and details of any residual effects (should any exist following mitigation).

Consultation with relevant statutory and non-statutory parties, including Natural England, Merseyside Environmental Advisory Service (MEAS) and LCC, will be undertaken to ensure that all issues are covered within the assessment.

On the basis of a review of the habitats present and the background information for the site, a suite of ecological survey work will be undertaken in order to inform the baseline assessment of the site, including a desktop study, extended Phase I survey and Phase II protected species surveys. The survey methodology proposed is summarised below:

SCOPED IN TOPICS

Desktop Study

A desktop study will be undertaken, contacting both the local records centre Merseyside Environmental Advisory Services (MEAS) and reviewing electronic resources (e.g. MAGIC database) to identify known ecological constraints such as statutory or non-statutory designations, or known sites for protected species.

Phase I Habitat Survey

The site will be surveyed based on the Joint Nature Conservation Committee (JNCC) extended Phase 1 survey methodology [20], whereby the habitat types present are identified and mapped, together with an assessment of the species composition of each habitat. As part of this, consideration will also be given to the immediately adjacent dock habitats. Attention will also be paid to any invasive or noxious plants or weeds listed on Schedule 9 of the Wildlife and Countryside Act 1981.

Phase II Survey Work

Based on the habitats present at the site and the identified potential for protected and notable species, the Phase II survey work shown in Table 11 has been/will be undertaken.

Aquatic Ecology

The assessment methodology will be based on the Guidelines for Ecological Impact Assessment in Britain and Ireland – Marine and Coastal (IEEM, 2010). Any linkages with climate change, human health and major accidents and/or disasters will be identified.

Habitat Regulations Assessment

Given the close proximity and direct hydrological connection of the site with the Mersey Estuary Special Protection Area (SPA), a shadow HRA Stage 1 Screening Report will be required to determine whether the scheme is likely to impact upon any of the qualifying features of the SPA. This will take into account the bird survey information, alongside the additional information generated by the EIA process, to determine whether a subsequent Stage 2: Appropriate Assessment is also needed.

The information required to inform the HRA process will be contained within the technical appendices that accompany the biodiversity chapter in the ES.

Table 11

Phase II Survey Work Undertaken/to be Undertaken at the Site

SURVEY	RATIONALE	METHODOLOGY	SURVEY WINDOW
Roosting Bats	There are built structures on site which may provide bats with suitable roost sites, but have not yet been inspected for their bat roost suitability, however, a daytime inspection of the buildings will be undertaken to determine this. The results of this	Built structures within the site will be surveyed externally (and internally where access permits) for potential to support roosting bats. Further surveys will be conducted in accordance with the Bat Conservation Trust's Bat Surveys for Professional Ecologists: Good Practice Guidelines [19] i.e. NEGLIGIBLE structure - no surveys needed; LOW suitability structure - one evening survey; MEDIUM suitability structure - two evening surveys; and HIGH suitability structure - three surveys (two evening and one pre-dawn).	Building Inspections: Throughout the year Emergence/ Re-entry Surveys: May – September, with optimal surveys

SCOPED IN TOPICS

SURVEY	RATIONALE	METHODOLOGY	SURVEY WINDOW
	would then inform the appropriate scope of further nocturnal surveys where necessary.		between May and August
Breeding Birds	The habitats within the site have the potential to support a number of common bird species and a range of other breeding bird species. In addition the site is located within close proximity to a number of Natura 2000 sites which have been designated for particular bird species and assemblages.	Common Bird Census surveys comprising a single visit undertaken in April, two visits will be undertaken in May (early and late) and a single visit will be undertaken in June. The ornithologist will conduct the survey by means of recording observations from three vantage points (VP) around site which will allow for observations of the site plus neighbouring docks as access and visibility permits (Sandon Half Tide Dock & Wellington Dock to the north and Nelson Dock to the south). In addition to observations made at the VPs a walked transect will be completed which will incorporate the near side of the long warehouse building and the other built structures specifically to check for breeding black redstarts which are known to be active in the local area. Each survey will commence 2-3 hours before high tide and last up to high tide during suitable weather conditions only.	March – July, with surveys optimally undertaken April – June.
Wintering Birds	The habitats on site and adjacent to the site have the potential to support wintering birds and birds associated with the Natura 2000 sites.	Wintering bird surveys have been completed at the site, surveys commenced in November 2016 and ran until February 2017. Each month had two surveys which were undertaken at low and high tides (4 and 8 hours respectively). The survey method allowed for observations from two VP. The first VP (VP1) allowed for monthly bird counts of the site and VP2 covered a much wider area encompassing approximately half way across the Mersey and adjacent docks. Thirty minutes was spent at each VP and this was alternated between each VP for the duration of each survey. The results of these surveys have been compared to those of the TEP 2015 'Assessment of Supporting Habitat (Docks) for Use by Qualifying Features of Natura 2000 Sites in the Liverpool City Region', which show that similar bird assemblages have been recorded for the area however WYG survey methods recorded higher numbers of individual wintering birds, likely due to the longer periods of time we spent observing.	November - February

SCOPED IN TOPICS

6.8 WATER ENVIRONMENT

Context

The water environment assessment will address issues relating to flood risk, drainage and water quality conditions at the site and surrounding environment.

Consideration will be given to the proposed development's vulnerability within the context of the site conditions including the effects of climate change. A range of impacts associated with the design, construction and operation of the proposed development will be considered.

The water environment includes BMD, within which the proposed development is situated, and the surrounding dock network to the north and south. The River Mersey borders the western edge of the application site. The local area to the east of Bramley-Moore Dock is drained by a widespread combined sewer network.

The site falls within the Lower Mersey River Basin – Mersey Estuary Catchment. The associated North West River Basin District River Basin Management Plan sets a number of actions to meet the requirements of the Water Framework Directive (WFD).

Baseline Conditions

Flood Risk – Rivers and Sea

The baseline flood risk conditions on site will be reviewed in consultation with the Environment Agency.

The Environment Agency's broad scale mapping shows the site to be located primarily within Flood Zone 1, suggesting the site is predominantly at low risk of flooding from both tidal and fluvial sources. A narrow strip along the western edge of the site is located within Flood Zone 3, at a higher risk of flooding. Site specific flood data in relation to the tidal levels within the River Mersey will be obtained and related to the topographic survey information to more accurately define the boundary extent of the flood zones within the site. The presence and extent of existing flood defences will also be reviewed as part of the assessment.

From work undertaken on the Liverpool Waters development outline permission it was stated by the Environment Agency that any detailed planning applications within this area should include an assessment of the implications of wave overtopping of the existing sea wall defences, this will be included within the Flood Risk Assessment.

Flood Risk – Surface Water

The baseline surface water flood risk will be assessed within the application site and the adjacent access roads. Broad scale surface water flood risk mapping indicates the site and adjacent areas to be generally at low risk.

The majority of the application site is understood to currently discharge surface water into BMD or to the River Mersey. No public sewers are shown to be present within the application site boundary.

The area to the east of BMD is generally drained by a widespread combined sewer network. Combined sewer overflows discharge to the River Mersey via the Docks, although no overflow pipes are known to be present within the application site boundary.

Flood Risk – Groundwater and Groundwater Quality

Baseline conditions for the application site will be established within a desk based assessment that will collate the results of site investigation works in the vicinity of the site.

SCOPED IN TOPICS

The application site has primarily been used as dockyards since the early 1800's; however a number of other uses have been present in areas of the site including a coal and oil fired power station, various depots and warehouses, storage tanks, railway sidings and electrical substations.

Flood Risk – Infrastructure Failure

The baseline risk of flooding due to infrastructure failure will be assessed in liaison with United Utilities.

No major water mains are known to be present within the application site.

Sewer records have been provided by United Utilities for the local area. Major foul and combined water sewer infrastructure is present beneath Regent Road, immediately east of the site. A sewage treatment works is also present immediately to the north.

Key Issues and Requirements for Assessment

An initial review of the existing surrounding water environment suggests that potential significant effects during the construction and operational phases may include:

Flood Risk

- Flood risk to construction workers and plant
- Flood risk to the proposed development and its occupants
- The effects of climate change *and sea level rise* over the life of the development

Surface Water

- Changes to the surface water flow regime across the site, impacting available capacity within sewer networks
- Increases in surface water discharge rates which may increase flood risk to the site, adjacent sites and areas downstream

Water Quality

- Deterioration of the quality of surface water run-off from the site which may impact the quality of downstream water bodies and ground water through infiltration
- Accidental leaks and spillages of hazardous material which could adversely affect the quality of downstream water bodies and groundwater through infiltration

Ground Water

- Impacts to the local groundwater regime and hydrogeological profile due to the dock infilling, hard standing/building cover and foundations

Water Supply and Foul Water

- Increased water demand and foul water demands from the site placing pressure on infrastructure.

Assessment Methodology

The assessment methodology will include completion of the baseline assessment, followed by prediction of the effects and an assessment of their significance.

Effects will be assessed for both the construction and operational phases of the development.

The effect significance will be based on assessing the effect magnitude (i.e. the deviation from the baseline condition) and the sensitivity of the likely receptor. Professional judgement and the use of a matrix approach will determine if potential effects are considered to be significant.

SCOPED IN TOPICS

To inform these assessments the following will be undertaken:

- A review of Environment Agency flood maps and the LCC Strategic and Preliminary Flood Risk Assessments to identify sources of flooding that may affect the site and how the risk of flooding to the site can be mitigated.
- A review of the existing river wall defences and lock gates to identify the level of protection provided and to identify any reinforcement require to protect the development over its lifetime.
- The preparation of a site-specific Flood Risk Assessment (FRA) including the effects of climate change and assessment of wave overtopping from the River Mersey to ensure the proposals are safe and generally improve the risk of flooding to the site.
- An assessment based on the life cycle of the development and the impacts of sea level rise of the required minimum finished flood levels for the main stadium and any ancillary buildings.
- Based on the assessment of flood risks and the final site levels identify the extent of any flood zone 2 and 3 areas and the requirement and scope for a flood evacuation plan and any flood resilience measures.
- The preparation of a surface water drainage strategy to ensure flood risk is not increased as a result of the development, including allowances for climate change. The site is immediately adjacent to the tidal River Mersey, hence an unrestricted surface water discharge to the river is likely to be appropriate with no attenuation required on site. In these circumstances the assessment will focus on water quality, with appropriate mitigation measures.
- The preparation of a SUDs strategy which will review the SUDs options available and assess their suitability and usage for inclusion within the detailed designs.
- The preparation of a foul water drainage strategy in liaison with United Utilities, to ensure downstream sewer networks have sufficient capacity for any increased effluent flow rates and volumes generated by the site. Sports stadia generate large peak flows for short periods (at half time of a match, for example). The system may incorporate attenuation to limit the peak flow leaving the site to mitigate downstream impact
- Review of proposed development within the context of the North West River Basin District River Basin Management Plan, which sets a number of actions to meet the requirements of the Water Framework Directive.

The FRA will be undertaken in accordance with the following guidance:

- Environment Agency 'Flood Risk Assessment (FRA) "Flood risk assessment in flood zone 1 and critical drainage areas" https://www.gov.uk/guidance/flood-risk-assessment-in-flood-zone-1-and-critical-drainage-areas and Flood risk assessment in flood zones 2 and 3 https://www.gov.uk/guidance/flood-risk-assessment-in-flood-zones-2-and-3
- Department of Communities and Local Government 'National Planning Policy Framework' (2012)
- Department of Communities and Local Government Planning Practice Guidance 'Flood risk and Coastal Change (2015)
- The Environment Agency 'Flood Risk Assessments: Climate Change Allowances' (2016);
- The existing, adopted (saved) Liverpool Unitary Development Plan and emerging Local Plan.

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Consultations will also be undertaken with the following statutory consultees:

- The Environment Agency;
- The Marine Management Organisation (MMO);
- Liverpool City Council - Lead Local Flood Authority;
- United Utilities;
- Peel Ports – The Mersey Docks and Harbour Company (Harbour/Port Authority).

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6.9 GROUND CONDITIONS

Context

The ground conditions assessment will address issues relating to existing geoenvironmental conditions at the site, with the aim of ensuring that suitable and safe conditions are achieved for the proposed end-use (football stadium). Consideration will be given to the site's conceptual model including geology, hydrology, hydrogeology and the geoenvironmental conditions (including issues associated with soil gases, chemicals within site soils and groundwater). A range of impacts associated with the design, construction and operation of the proposed development will be considered.

Baseline Conditions

An initial understanding of the likely baseline will be obtained from a review of published mapping and existing reports on nearby sites. The below summary text is an initial appreciation of the baseline ground conditions but it must be recognised that this is subject to revision as more detail becomes available.

The ground conditions at the site are likely to comprise Made Ground (Fill), overlying a sequence of natural geological strata of Tidal Flat Deposits over the Chester Pebble Beds Formation. The particular conditions at the site will be determined by reference to data available from the British Geological Survey (maps and borehole logs) and to any existing site investigation reports.

Detailed site history will be determined with reference to published Ordnance Survey mapping (dating back to the mid 1800s) and to other accessible information and reports (via internet searches). Recent and historic dockyard uses are likely to have involved the storage and use of fuels and chemicals. These recent and any historic uses of the land at the site will then be interpreted to determine the likely location, nature and scale of any ground contamination.

Key Issues and Requirement for Assessment

Potential Effects during Construction

Assessment during the construction period will consider the impact and associated effects of the construction on areas of potentially contaminated land within the spatial scope of the site. The construction activities that could give rise to effects are related to any below ground activities, including backfill, localised excavations, construction of piled or other foundations, construction of below ground services or other infrastructure, dewatering and groundwater control, waste treatment and disposal. The potential effects arising from such activities could be relevant to both human (construction workers, neighbours) and environmental (flora, fauna, groundwater and surface waters) receptors.

Potential Effects during Operation

The operational assessment will consider the effect that any residual contamination could have on the end users of the redeveloped site, the environment and/or the materials used in the construction of the project. The operational activities that could give rise to effects are related to the presence of any residual contamination (in solid, liquid or gaseous form) and the potential for exposure to both human (site occupiers and visitors, neighbours) and environmental (flora, fauna, groundwater and surface waters) receptors.

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Assessment Methodology

Technical Scope

Land contamination is regulated under several regimes, including environmental protection, pollution prevention and control, waste management, planning and development control, and health and safety legislation. The primary regulatory regimes under which contaminated land are managed in the UK are: under the planning process described in the National Planning Policy Framework and under Part 2A of the Environmental Protection Act. The framework for the assessment of potential land contamination adopted in this assessment will be based on current guidance documents regarding the implementation of these regimes and the assessment of potentially contaminated land, with particular reference to: the Environment Agency Model Procedures and their Guiding Principles on Land Contamination; and the relevant British Standard (BS10175:2011). Reference will also be made to local planning policy, comprising the adopted (saved) Unitary Development Plan and emerging draft Local Plan.

A conceptual model of the site will be developed that describes its environmental features together with the expected interaction of potential contamination sources with the environment. Assessment of the potential interactions will then be undertaken by means of a Source – Pathway – Receptor analysis of the site in accordance with the guidance documents referred to above.

Where a source, relevant pathway and receptor are present, or could be created as a result of the proposed development, a "contaminant linkage" is present. The presence (or potential presence) of such a contaminant linkage gives rise to a circumstance through which some level of environmental harm could occur and which, therefore requires assessment and the identification of mitigation, as appropriate.

Baseline Assessment

Baseline conditions will be assessed for the development confines and for a distance of up to 250m beyond. This "halo" around the site boundary is considered in order to take into account the potential for off-site contamination sources and receptors. The baseline data will be sourced from a desk based study and site walkover survey together with available data on the geological and geoenvironmental conditions from any existing site investigation reports, together with published information and existing borehole logs published by the British Geological Survey.

Consideration of the future baseline will take into account currently planned development (and any associated remediation works) which may affect the contamination status of land and/ or may affect the development of the project itself.

Effect Prediction and Assessment of Effect Significance

The methodology for impact prediction is based on assessing both the magnitude of the changes expected and the sensitivity of the receptors. Criteria for assessing the significance of potential human and environmental impacts will be based on a qualitative assessment of the magnitude of the impact, or how far the impact deviates from the baseline condition, and the receptor sensitivity.

The following resources/receptors will be considered in the assessment:

- construction workers;
- future site users;
- surrounding land users;

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- controlled waters (groundwater and surface water bodies);
- ecology; and
- the built environment.

It is not anticipated that these resources/receptors will all be significantly affected but it is necessary to demonstrate that these important receptors have been considered. Incorporation of mitigation such as personal protective equipment (PPE) and the health & safety regime for construction workers will address the majority of any potential health risks associated with the development itself.

Receptors are considered to have varying degrees of sensitivity to contamination potentially present beneath the site, based on the potential scale of exposure and the integrity of any site specific exposure pathways. The scale of receptor sensitivity will be defined on a scale from very low to high.

The criteria used to assess the magnitude of effects will be based on a qualitative assessment of the potential seriousness of the effect or how far the effect deviates from the baseline condition and the period of time that the effect could last. The combination of the sensitivity of the receptor and the magnitude of the impact will provide an indication of the level of contamination on the site, and the nature and severity of possible effects. It should be noted that both rankings may vary in accordance with the different scenarios being considered (i.e. baseline, construction and operation). Beneficial or adverse effects during construction and when the site is operational will be identified. The beneficial effects are associated with the mitigation of risks associated with contamination. The adverse effects are temporary during the construction phase and relate to the increased potential for contaminant exposure (e.g. from the generation of contaminated dusts) and long term from the use of the site during the operational phase (and any residual contamination if remediation was inadequate or not carried out).

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6.10 ARCHAEOLOGY

Context

Bramley-Moore Dock is the largest of group of five docks, including Salisbury, Collingwood, Stanley and Nelson Docks, opened in 1848. The site lies within the UNESCO Liverpool Maritime Mercantile City WHS, contains listed structures designated by Historic England (HE) and is within the Stanley Dock Conservation Area. Consequently, in accordance with the World Heritage conventions, national and local planning policy, high priority must be given to the physical preservation and setting of historic features in development proposals.

The potential for effects on, and proposed assessment methodology of the Heritage assets at the application site is considered separately in Section 6.11, this section addresses below ground archaeology only.

Baseline Conditions

The dock contains three structures of national significance designated by HE; Bramley-Moore Dock Retaining Walls are Grade II listed (Ref. 1072980); the Hydraulic Engine House is Grade II listed (Ref. 1072981) and the Dock Wall from opposite Sandhills Lane to Collingwood Dock with Entrances is Grade II listed (Ref. 1072979). Both the hydraulic tower and the dock walls with their distinctive turret gates remain extant and form significant local features. Historic maps also illustrate the presence of a late nineteenth century high-level railway and structures associated with the use of the dock for the coal trade.

Key Issues and Requirements for Assessment

Potentially significant effects on the below-ground archaeological resource would involve the possibility of disturbance, removal or destruction of archaeological deposits during demolition and construction works.

Assessment Methodology

A desk-based archaeological baseline study will be carried out using existing cartographic, historical and archaeological sources, and data gathered during a site walkover survey. This will be undertaken in accordance with guidelines and best practice set out by HE and the Chartered Institute of Field Archaeologists (CIfA).

The study will identify and characterise the significance of the below ground archaeological assets identified. In accordance with the extent of that significance, it will identify strategies to record, preserve or manage those archaeological assets, and any necessity for further evaluation, where their character or value is not sufficiently defined. The assessment will be informed by WHS, national and local planning policy relating to the historic environment, and appropriate curatorial bodies will be consulted regarding mitigation strategy.

The results of the assessment will be presented in the format of an ES chapter, with the illustrated desk-based study and map-based figures included as an appendix.

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6.11 HERITAGE

Context

This chapter of the ES would assess the likely significant effects of the proposed development on the historic environment with respect to above ground built heritage assets in the vicinity of the application site, extending to include a broad area in which the development may have an effect on heritage assets. This includes the Liverpool Mercantile Merchant City World Heritage Site, Listed Buildings and Conservation Areas.

The UNESCO World Heritage Convention seeks to identify, protect, conserve and present the world's heritage, and all development proposals within the WHS are considered for their potential impact upon the Outstanding Universal Value (OUV) of the WHS.

The potential effects on cultural heritage relate to loss of significant historic fabric, including designated and undesignated structures damage to the settings of protected buildings and structures, harm to the character or appearance of conservation areas, and adverse effect on the OUV of the WHS.

The assessment will be focussed upon the nature and degree of the impact of the development on the heritage significance of the heritage assets in question.

Heritage assets vary in their sensitivity depending on their levels of heritage significance and their relationship to the site and to the development. It can be anticipated that the magnitude of change for some heritage assets will be large and that the majority of effects will be permanent although reversibility will also be considered.

Baseline Conditions

The site comprises Bramley-Moore Dock (BMD), within the Port of Liverpool on the River Mersey.

BMD is situated within the Liverpool Mercantile Merchant City World Heritage Site at its northern end and forms part of a system of interlinked wet docks comprising Salisbury, Collingwood, Stanley, Nelson and Bramley-Moore, representing the culmination of Jesse Hartley's development dock design.

Since the 1850s the site has been in much the same configuration as exists today, save for sheds along the north and west wharves and rail tracks along the east wharf. BMD was closed in 1988. In recent years, the dock has been used for storage of sand and gravel. The site is currently in use by Mersey Sand Suppliers to stockpile sand dredged from the River Mersey.

The Dock Retaining Walls as well the Hydraulic Engine House and Dock Walls are listed Grade II. Nearby are a number of listed structures including Nelson Dock Retaining Walls (Grade II); Stanley Warehouse (Titanic Hotel) (Grade II*); Hydraulic Tower to its west (Grade II); Entrandes to Stanley Dock (Grade II); Tobacco Warehouse (Grade II); Stanley Warehouse to the south of Tobacco Warehouse (Grade II); Bonded Tea Warehouse (Grade II) amongst other dock and canal related structures.

The site also lies within the Stanley Dock Conservation Area.

Key Issues and Requirements for Assessment

Within the context of EIA, consideration of impacts should be given to the following:

- Outstanding Universal Value of the Liverpool Maritime Mercantile City World Heritage Site;

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- Special architectural or historic interest of Listed Buildings;
- Character and appearance of Conservation Areas;
- Significance of non-designated heritage assets

The proposed development will have the potential to generate a temporary visual impact from construction operations on the setting of heritage assets, for example from the presence of tower cranes on the skyline, which may have adverse impacts on sensitive assets. Assessment will also include consideration of the impact of major disasters and accidents. In the context of the historic environment this will include: floods, tidal waves, transport accidents, urban fire and terrorist incidents (including vehicle impact damage).

Assessment Methodology

A detailed assessment of the historic environment in the vicinity of the site will be undertaken in order to establish a baseline condition against which an assessment of the impact of the proposed development can be made.

The methodology for assessing the effects of the proposed development upon the heritage assets identified above is to measure those effects against criteria contained in national and local policy and guidance relating to the historic built environment.

The sensitivity of the receptor as existing will be assessed as very high, high, medium, low, or negligible depending on the importance, value and quality of the receptor.

The assessment of the historic environment will be undertaken using a variety of methods:

- Desk-based assessment of published sources of information on the historic built environment in the area, in the form of statutory information and of studies, histories and research.
- Physical inspection and fieldwork on the site of the development and surrounding area.
- Detailed agreed verified views.
- Consultation with the local authority and Historic England.

The assessment will identify the nature, location and extent of heritage assets, their relationship to the site, the nature of their heritage significance, and their degree of sensitivity to change.

This will be undertaken by means of desk-based analysis and field study as indicated above. Structured, informed and reasoned professional judgment will be used to take account of quantitative and qualitative factors of the changes brought about by the proposed development.

This will be undertaken in accordance with guidelines and best practice set out by HE and the Chartered Institute of Field Archaeologists (CIfA).

The study will identify and characterise the significance of the heritage assets identified. In accordance with the extent of that significance, it will identify strategies to record, preserve or manage those archaeological assets, and any necessity for further evaluation, where their character or value is not sufficiently defined. The assessment will be informed by WHS, national and local planning policy relating to the historic environment, and appropriate curatorial bodies will be consulted regarding mitigation strategy.

The results of the assessment will be presented in the format of an ES chapter, with the illustrated desk-based study and map-based figures included as an appendix.

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The terminology used within the assessment will be consistent with other EIA disciplines. The final assessment of significance of the effect on heritage assets will be based on the combination of existing sensitivity and magnitude of change to produce an assessment of impact of the development, but using professional judgment considered in relation to the specific nature of the heritage assets affected and the nature of the proposal.

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6.12 TOWNSCAPE AND VISUAL AMENITY

Context

A baseline desktop and site walkover study has been carried out for the site area and up to 3km radius from the site boundary. To inform this study, Zone of Theoretical Visibility (ZTV) mapping has been prepared to identify the potential visibility of the proposed development based upon a developed height of 40m above existing ground level. The ZTV can be found on Figure 7 (Appendix A).

Baseline Conditions

Townscape Baseline Summary

At a nation level, the site is located within National Character Area (NCA) 58 Merseyside Conurbation. The Key Characteristics of the character area are described as follows:

- A low-lying but gently rolling platform punctuated by low ridges; however, the extensive urban development generally dominates the topography.
- The underlying geology of Triassic sandstone overlain by glacial till forms part of an aquifer supporting groundwater abstractions.
- Extensive intertidal mudflats/sand flats relating to the Mersey Estuary, although the waterfront is generally built up; wide coastal frontages along the open coast.
- Flowing north-west, the River Mersey dissects the area entering the Irish Sea in Liverpool Bay.
- Woodland cover is significant in such a heavily urban area, with new community woodland being created, while urban parks, cemeteries and suburban street plans provide trees and, in some cases, wooded habitats.
- Pockets of mainly versatile and good-quality farmland remain on the fringes of urban areas, often arable or horticultural.
- Field boundaries are generally hedgerows, sometimes marked by drainage ditches with grassy banks.
- Green infrastructure is interspersed through the urban fabric, while pockets of 'encapsulated countryside' provide important wildlife refuges and opportunities to link local people to the natural world.
- Renowned for its strong maritime heritage, there is much industrial archaeology, along with Victorian public parks and designed gardens.
- The built environment is characterised by a mix of red brick and sandstone within the city and a diverse range of modern materials in the outlying suburbs.
- Distinct urban centres have amalgamated to form the Merseyside conurbation, surrounding the larger dominant centre of the city of Liverpool, but split by the River Mersey.
- Dense settlement pattern with extensive areas of housing and industry.
- Extensive transport infrastructure of motorways and railway lines, while the ports provide for significant international trade and cruise liners, as well as international and local passenger ferries

At a local level, there is no landscape/townscape character assessment for Liverpool city centre. There are however several documents including the Liverpool Maritime Mercantile City World Heritage Site Supplementary Planning Document (March 2009) that carries out an appraisal of the designated World Heritage Site (WHS) area and its buffer zone within

SCOPED IN TOPICS

which the site is located. This will be referred to in the assessment of landscape and visual effects.

The site area including potential temporary construction land take comprises BMD, Nelson Dock and Sandon Half-Tide Dock with surrounding areas of hard standing currently in use for a variety of warehousing, storage and processing purposes. To the north of BMD the area is used for aggregate processing/storage (Mersey Sand Suppliers). Between BMD and Nelson Dock is a large unlisted warehouse building orientated east to west. Immediately south of the buildings are areas used for storage of pipe materials. On the south and east boundary of Nelson Dock is a timber yard with timber stored around the dock area. The west boundary of the site is formed by the River Mersey and dock wall.

Within the surrounding area there are several landscape/townscape features that influence the characteristics of the site and the wider dock area. To the south, these include the Dock Wall on the eastern site boundary with Regent Road; the Hydraulic Engine House, the Tobacco Warehouse and Bascule Bridge to the south east; and the Trafalgar Dock and Victoria Clock Tower to the south. To the north of the site, there is less association with the dock history as the land is occupied by a water treatment works and the ongoing operational docks beyond. Within the wider landscape/townscape, the land to the east is a combination of warehousing/distribution and manufacturing with residential areas beyond. To the south the land use changes as it approached Liverpool city centre. To the west is the River Mersey and on the west bank of the Mersey, the Wirral. The opposing shore line is developed along its length with primarily residential properties extending up to a localised horizon.

Visual Baseline Summary

From within the site, views out to the north extend as far as the water treatment works with filtered views to the inaccessible operational dock areas beyond; the large red and white painted cranes are a prominent feature of the skyline to the north. Views to the east comprise the visually prominent Dock Wall following the alignment of Regent Road with the rooftops of warehousing units beyond. There is a middle to long distance view available to the east extending along Boundary Street reaching approximately 1.5km to the east. From within the west area of the site on the embankment with the Mersey, long distance views to the ridge line at Everton are possible with primarily residential areas visible alongside Everton Park.

Views to the south extend towards Princes Dock and the recent development that has taken place within the dock area; this development restricts views to the city centre beyond although taller buildings do punctuate the horizon. Views of the Three Graces are restricted by development with only the top of the Liver Building visible.

To the west, panoramic views across the River Mersey are possible taking in the promenade along the water front from the Birkenhead ferry landing in the south to Fort Perch Rock in the north before long distance views to sea are available beyond.

Key Issues and Requirements for Assessment

Key Landscape & Townscape Receptors

As set out within the landscape baseline, there are several features within the landscape relating to the areas' heritage that greatly influence the landscape character. Whilst the effect of the development on the historical value of these heritage features is assessed in the Cultural Heritage assessment, there is a clear overlap with the contribution these features make to the landscape character and setting of the site.

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In summary, the key landscape/townscape receptors within the site and a 3km study area that will be considered within the Landscape and Visual Assessment are as follows:

- National Character Area 58: Merseyside Conurbation;
- The potential effects upon the localised landscape characteristics of the former docklands and surrounding industrial, townscape, residential and commercial character areas;
- The potential effects upon existing landscape features including open water bodies of the docks and scrub vegetation in isolated areas;
- The direct effect upon the landscape/townscape character of the Liverpool Maritime Mercantile City World Heritage Site, which includes the Victoria Clock Tower, the Tobacco Warehouse, and the Bascule Bridge;
- The effect upon the landscape character of the Mersey waterfront as perceived from the west bank of the Mersey within the Wirral-; and
- Any relevant landscape planning designations.

Key Visual Receptors

The identification of visual receptors has been informed by desk based studies which have been verified by on site survey work; review of the Liverpool Maritime Mercantile City World Heritage Site Supplementary Planning Document defined vistas and general views; and precedence used for other proposed waterfront development located within the area.

The above sources have been reviewed and long list of potential viewpoint locations was identified as below. Each of the locations has been visited to ascertain the views possible towards the proposed development site and from this the shortlist of viewpoint locations selected. Representative views from each location are contained within Appendix D of this document.

Long List Viewpoint Locations

1. Melrose Road/Westminster Road junction – channelled views along Melrose Road although the stone wall along the west of the road screens views of the site area and it is considered there would be limited visibility of the proposed development. The viewpoint is therefore scoped out of the assessment.
2. Public Open Space parallel to Commercial Road – panoramic views over the adjacent industrial area and towards the docks and Liverpool city centre from the amenity area along Commercial Road. Although the proposed development may be visible it is anticipated it would form a very small part of the view and therefore the viewpoint is scoped out.
3. Regent Road – channelled views along Regent Road with the Bramley-Moore Dock Wall a prominent landscape feature within the view. The proposed development would be a focal element of the view and therefore the viewpoint is scoped into the assessment.
4. Everton Valley/St Domingo Road junction – middle distance views towards the site channelled along Everton Valley road. Existing mature trees enable filtered views only and therefore the view is scoped out of the assessment.
5. Blackstone Street/Derby Road junction – channelled views towards the Dock Wall with the site area immediately beyond. The proposed development is likely to be prominent within the view and therefore scoped in to the assessment.

SCOPED IN TOPICS

6. Boundary Street – elevated channelled views towards the site with the opposite side of the Mersey and the Wirral visible in the distance. The proposed development is likely to be prominent within the view and therefore scoped in to the assessment.
7. Everton Park – elevated panoramic views available towards the site and the wider dockland area seen simultaneously with Liverpool city centre. The proposed development is likely to form a focal point on the skyline and the viewpoint is therefore scoped in to the assessment.
8. Regent Road at Bascule Bridge – views gained from the crossing of the Bascule Bridge towards the timber storage area around Nelson Dock with the warehouse building between Bramley Moor Dock and Nelson Dock. Victoria Clock Tower is seen within the context of the view with the proposed development anticipated to be a prominent component. The viewpoint is therefore scoped in to the assessment.
9. Waterloo Road/Porter Street junction – views gained across the dock areas with the site visible alongside the Victoria Clock Tower, Bascule Bridge and Tobacco Warehouse. The proposed development is likely to be a focal component of the views gained and therefore the viewpoint is scoped in to the assessment.
10. Waterloo Road (tunnel venting tower) – the site itself is screened by the Dock Wall and industrial units in the foreground of the view. The large cranes to the north of the site within the operational docks are visible rising above the Dock Wall. The views gained are similar to those gained at viewpoint 9 and therefore this viewpoint is scoped out of the assessment.
11. Waterloo Road (Costco access junction) – views channelled along Waterloo Road to the north. The existing residential building at East Waterloo Dock is dominant to the west. The existing wind turbines beyond the site area are visible above the industrial units in the middle distance. The views gained are similar to those gained at viewpoint 9 and therefore this viewpoint is scoped out of the assessment.
12. King Edward Street/Leeds Street/Great Howard Street junction – views from the edge of the city centre across the large road junction with views over the rooftops of industrial/warehouse units towards the docks and site area. The viewpoint is representative of the views gained from the edge of the city centre and is therefore scoped in to the assessment.
13. Princes Parade – view north from the edge of Princes Dock towards the site area with the view comprising Victoria Clock Tower in the middle distance. The skyline is dominated beyond the site by the dock cranes and wind turbines. The site is screened by the existing development at West and East Waterloo Dock and therefore scoped out of the assessment.
14. Pedestrian bridge crossing over Princes Dock – the site area is screened at ground level however the existing wind turbines to the north of the site are visible rising above the existing residential units at East/West Waterloo Dock. Views are prevented by the existing buildings within Princes Dock and East/West Waterloo Dock and therefore the location is scoped out of the assessment.
15. King Edward Street (Crowne Plaza) – channelled views north along the road corridor. Although theoretical visibility exists (see Figure 7, Appendix A) the trees in the foreground of the view screen views towards the site. Views towards the site are obscured by the existing vegetation and streetscape clutter and therefore the view is scoped out.
16. North façade of Pierhead building/ferry terminal – although the site area is not visible, the turbines to the north of the site area are visible

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to the left of the tower block at Princes Parade. Although the views from the viewpoint location are restricted, the sensitivity of the Pierhead complex and its association with The Three Graces results in the inclusion of the viewpoint location.

17. Georges Pierhead/Brunswick Street junction – the line of sight to the proposed site is screened by the presence of The Three Graces and therefore no views are possible. The viewpoint location is scoped out of the assessment.

18. Museum of Liverpool – the line of sight to the proposed site is screened by the presence of buildings on the edge of the city centre and within Princes Dock area and therefore no views of the site are possible. The viewpoint location is scoped out of the assessment.

19. Salthouse Quay – the line of sight from the viewpoint location is blocked by buildings within Liverpool city centre and therefore no views of the site are possible. The viewpoint location is scoped out of the assessment.

20. Albert Dock entrance – much of the view towards the site is screened by The Three Graces and Liverpool Museum however a narrow gap exists between them enabling views to the north with the very west extent of the site theoretically visible. However, unless development took place immediately adjacent to the Mersey waterfront, views of the development would not be possible. Due to the limited visibility, the viewpoint is scoped out of the assessment

21. Birkenhead ferry landing – the site is viewed in context with Liverpool city centre and The Three Graces fronting towards the Mersey. The site area is 'framed' by the Victoria Clock Tower and the Tobacco Warehouse within the view. Although the site is visible from this location it is at the extent of the study area and it considered that the view is adequately represented by viewpoint 22. The viewpoint location is scoped out of the assessment.

22. Seacombe ferry terminal – the view of the site area is located beyond the Victoria Clock Tower and is identifiable by the blue roof warehouse building. The site forms part of a panoramic view including the city centre and docks and is therefore scope in to the assessment.

23. Wirral Council offices – slightly elevated panoramic views are available across the river with the Victoria Clock Tower and Tobacco Warehouse forming focal elements within the view from this location. The viewpoint location is therefore scoped into the assessment.

24. Magazines Promenade/Magazine Lane – views towards the site area are available with the Tobacco Warehouse in the background and Victoria Clock Tower to the right of the site. The water works to the north of the site are more prominent within the view from this location. The viewpoint is representative of the views gained towards the site and the city centre and the viewpoint is therefore scoped in to the assessment.

25. Fort Perch Rock – the site forms a minor part of the view from this location; however, it is identifiable and is viewed as part of a diverse panoramic view including much of Liverpool city centre from 3km and is therefore scoped out of the viewpoint assessment.

Following review of the baseline views available from the above locations and the sensitivity of receptors identified at the locations, the short list of viewpoint locations identified in Table 12 is proposed for the assessment of visual effects.

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Table 12

Proposed Short List of View Point Locations & Relevant Receptors

VP. REF.	LOCATION	RECEPTORS
3	Regent Road	Road users Pedestrians
5	Blackstone Street/Derby Road junction	Road users Pedestrians
6	Boundary Street	Residents Road users Pedestrians Represents rail users
7	Everton Park	Amenity/recreation users
8	Regent Road at Bascule Bridge	Road users Pedestrians
9	Waterloo Road/Porter Street junction	Road users Office workers
12	King Edward Street/Leeds Street/Great Howard Street junction	Road users Pedestrians Office workers
16	North façade of Pierhead building/ferry terminal	Commuters Tourists/leisure users
22	Seacombe ferry terminal	Ferry users Magazine Promenade users Residents
24	Magazines Promenade/Magazine Lane	Magazine Promenade users Residents

Assessment Methodology

The methodology used for assessing the landscape and visual effects will be based on the recommendations in Guidelines for Landscape and Visual Impact Assessment 3rd Edition published by the Landscape Institute and the Institute of Environmental Management & Assessment in 2013 (GLVIA3) [24]. A summary of the methodology used is set out below and a full copy of the methodology is available upon request.

The assessment process comprises a combination of desk studies and field surveys, with subsequent analysis, and involves:

- A review of landscape/townscape designations and planning policies for the landscape, and of other landscape/townscape studies relevant to the area, as indicators of landscape value, including national and local landscape/townscape character assessments;
- A survey of the Site and landscape context study areas and inspection of views of the Site from publicly accessible viewpoints, including a photographic survey. The proposed viewpoints will be discussed with the LPA;

SCOPED IN TOPICS

- Evaluation of the features and elements of the landscape and their contribution to the landscape/townscape character, context and setting, based on these studies;
- Analysis of the development proposals and consideration of potential landscape/townscape and visual effects of the proposed development;
- Assessment of the susceptibility, value and sensitivity of the landscape/townscape to the changes likely to arise from the development;
- Identification of the extent of theoretic visibility of the development and potentially sensitive receptors, supported by a viewpoint analysis;
- Consideration of proposals for mitigation measures to avoid, reduce or offset adverse effects;
- Assessment of magnitude of change and the degree and nature of effects on the landscape/townscape and on visual amenity, with the mitigation proposals in place; and
- Assessment of the significance of these affects in EIA terms.

Consultation

Prior to commencement with the assessment of townscape and visual effects consultation will be carried out with the LCC landscape officer, and LCC conservation/design officers in addition to Historic England to ensure that the relevant sensitive townscape and visual receptors are assessed. If required, additional consultation will be carried out with Wirral Council and Sefton Council.

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6.13 SOCIO-ECONOMICS

Context

Given the strategic importance of both the site and Everton FC within Liverpool, a socio-economic impact assessment will be undertaken in order to assess the effect of the proposed development on baseline social and economic conditions within the local and wider area.

The likely effects generated from the proposed development will be examined, accompanied by an assessment of their relative significance. The assessment will address loss of employment associated with the application site's current commercial/warehousing and distribution use, in addition to the direct and indirect employment opportunities generated during the construction and operational phases, and potential regeneration effects within the area.

Baseline Conditions

Overview

In the 2011 census, the population of Liverpool City was estimated to be 465,700, while the population of the wider Liverpool City region was estimated to be 1,506,500. Between 2001 and 2011, the number of residents of the city rose by 6.1%. This represents a slower increase than nationally (7.4%). In this period, the biggest increase in the city's population occurred in the 20-29 age group, while there were also sizeable increases in the 40-64 and 75+ age groups. By contrast, the city's populations aged 5-14 years, 35-39 years and 65-74 years all decreased over the period. ONS projections (2014) forecast that Liverpool City's population will grow to around 495,600 by 2024, while the population of the Liverpool City Region will grow to 1,559,800.

According to ONS figures, the Gross Value Added (GVA) for Liverpool City was £10.9 billion in 2015. GVA per head was reported to be £22,790, which represents 89.9% of the UK average value. ONS Active Business Rate (Businesses per 10,000 Residents aged 16+) data indicates that there were 61 active businesses in Liverpool City per 10,000 Residents aged 16+ in 2015, which is lower than the Great Britain average of 73. In 2016, ONS data indicates that 718,700 people were in employment in the Liverpool City Region, which equates to 72.3% of the population of the region. This is lower than the Great Britain average (77.8%). In regards to earnings, ONS data indicates that both gross weekly pay and hourly pay, excluding overtime, were lower in the Liverpool City Region (£504.1 and £12.86 per full-time worker respectively) than the average for Great Britain (£541.0 and £13.66 per full-time worker respectively).

Establishing the Baseline

The baseline conditions for the application site will be established with reference to the following sources:

- A policy review to provide an outline of the relevant local and regional, social and economic policies and objectives for the area;
- A baseline review of current social and economic conditions prevalent in the local area in comparison with regional and national trends, utilising Geographic Information Systems and information available from the project team, the Local Authority, and published database records such as the Office of National Statistics and NOMIS;
- A review of the existing stadium operation at Goodison Park and liaison with EFC to ascertain the existing economic activity and employment associated with the Club's current operation.

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Key Issues and Requirements for Assessment

Key receptors that will be considered include:

- Existing and future site users;
- Existing businesses in the local area;
- The existing local community;
- Existing employees of EFC;
- EFC supporters;
- Future residential receptors associated with the Liverpool Waters permission;
- Future application site visitors and users not previously listed;
- The local economy.

Human Heath as a Receptor

In accordance with the proposed approach taken by the EIA of considering the requirements of the forthcoming EIA Regulations 2017, human health will be considered across all relevant technical chapters of the ES. However, in addition the socio-economic chapter will also identify and consider the potential for any 'communities of interest' to be disproportionately disadvantaged by the proposed development.

Communities of Interest

There are particular population groups that are known to be of greater risk of having poor health and wellbeing outcomes and experiencing severe inequalities. The Equality Act 2010 identifies a number of groups as those with "Protected Characteristics", of which many experience severe inequalities. Within the act these groups are listed as:

Age, Disability, Gender Reassignment, Pregnancy and Maternity, Marriage and Civil Partnership, Race or Ethnic Minority which includes Gypsies and Travellers and Colour and may include Nationality, Religion or belief or non belief, Sex (Male or Female) and Sexual Orientation.

In addition to the above groups that may be more vulnerable to experiencing inequalities, other vulnerable groups can exist as a result of circumstances. For the purposes of the socio-economic chapter, vulnerability is defined as occurring:

"when threats to the individual (from either the environment or from personal circumstances) become greater than the ability to cope with those threats (ie resilience). When this happens, health outcomes will most likely suffer."

For the health and wellbeing of individuals and groups to improve, either threats should decrease or resilience to these threats should increase.

Vulnerable groups identified in the Liverpool Joint Strategic Needs Assessment (JSNA) include for example, the homeless, carers, refugees and asylum seekers, and, young people not in education, employment or training (NEET).

Consequently, the term 'Communities of Interest' will be used to refer to both those groups with protected characteristics and vulnerable groups that are of relevance to the application site and proposed development.

Assessment Methodology

The proposed socio economics assessment will comprise the following:

- A review of the socio-economic baseline conditions at the application site, the local neighbourhood level (Lower Layer Super Output Area (LSOA Liverpool 22B)), metropolitan district level/sub-region (the LCC), regional level (North West) and national level (England). It should be

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noted that due to data protection/confidentiality requirements, the assessment of some economic factors will be reported at the sub-regional, regional and national levels only.

- Consideration would be given to deprivation, employment and economy and crime using established statistical sources such as the 2011 Census, official labour market statistics and information available from LCC;
- An estimation and quantification of the Full Time Equivalent (FTE) jobs generated by the demolition and construction works using established methodologies including the Homes and Communities Agency (HCA) Additionality Guide and HM Treasury: The Green Book: appraisal and evaluation in central government;
- An estimation and quantification of the FTE jobs created by the completed and operational proposed development using established methodologies including the HCA Employment Density Guide and the HCA Additionality Guide ;
- An estimation and quantification of the additional local spend created by the completed and operational proposed development;
- An estimation of the benefits with regard to skills and training generation;
- A qualitative assessment of the likely effects on crime including perceptions of public safety; and
- Identification of additional mitigation measures, including planning obligations, should any significant adverse effects be identified.

In addition to consultation with EFC, liaison and dialogue will be undertaken with NHS Liverpool Clinical Commissioning Group (CCG) for information regarding the requirements around the various operational scenarios and emergency care cover with particular regard to match day events.

In addition, as part of the design development various other consultees will be consulted by the design team such as the police and counter-terrorism units.

The assessment will present the quantitative and qualitative evaluations of the social and economic effects of the proposed development and, where appropriate, will identify suitable mitigation measures that should be applied during both the construction and operational phases of the proposed development to reduce any potential adverse effects.

The range and extent of socio-economic impacts will be assessed over two phases; the construction stage and the operational stage of the site once the proposed development is complete.

The types of socio-economic impacts anticipated as a result of the scheme include direct, quantifiable employment impacts, community benefits through the creation of a new stadium, and anticipated impacts on emergency services provision (health) as a result of the proposed development.

The results of the socio-economic assessment will benchmark the overall project aims against a variety of additional socio-economic components, such as improving the quality of life for users of the site and local community, and how these meet established social and economic policy objectives at the local, county, regional and national levels.

7 SUMMARY AND CONCLUSIONS

7.1 REQUEST FOR A SCOPING OPINION

This report is a request for a scoping opinion under Regulation 13(1) of the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 (as amended).

In accordance Regulation 13(3), should PCC consider that they have not been provided with sufficient information to adopt a scoping opinion, they should notify the person making the request of the points on which they require additional information.

7.2 LIST OF CONSULTEES

Copies of this scoping report are to be circulated to the following:

- LCC - Planning
- LCC - Environmental Health
- LCC - Highways
- LCC - Lead Local Flood Authority
- Marine Management Organisation (MMO)
- The Environment Agency
- United Utilities
- Civil Aviation Authority – Liverpool John Lennon Airport (LJLA)
- Natural England
- Historic England
- Merseytravel
- Sport England
- Merseyside Police
- Merseyside Environmental Advisory Service (MEAS)
- Peel Ports

7.3 HOW TO COMMENT

Comments on this scoping report should be sent to:

Peter Jones

City Centre Development Management Team Leader

Liverpool City Council

Municipal Buildings

Dale Street

Liverpool

L2 2DH

Alternatively, comments may also be made via LCC's planning website. Information on the closing date for comments is also available on LCC's website.

https://liverpool.gov.uk/planning-and-building-control/search-and-track-current-applications/

7.4 PERIOD FOR ADOPTING SCOPING OPINION

As per Regulation 13(4), the local authority shall now consult with the applicant and the consultation bodies and adopt their scoping opinion within 5 weeks of receiving this request.

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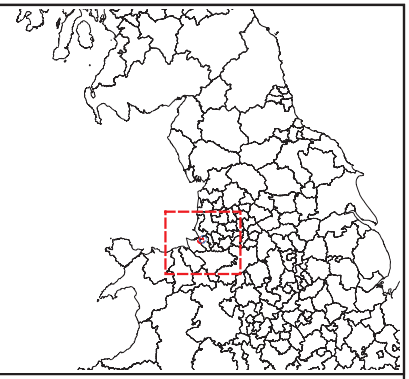
APPENDICES

APPENDIX A FIGURES



Legend

- Bramley-Moore Dock
- Goodison Park

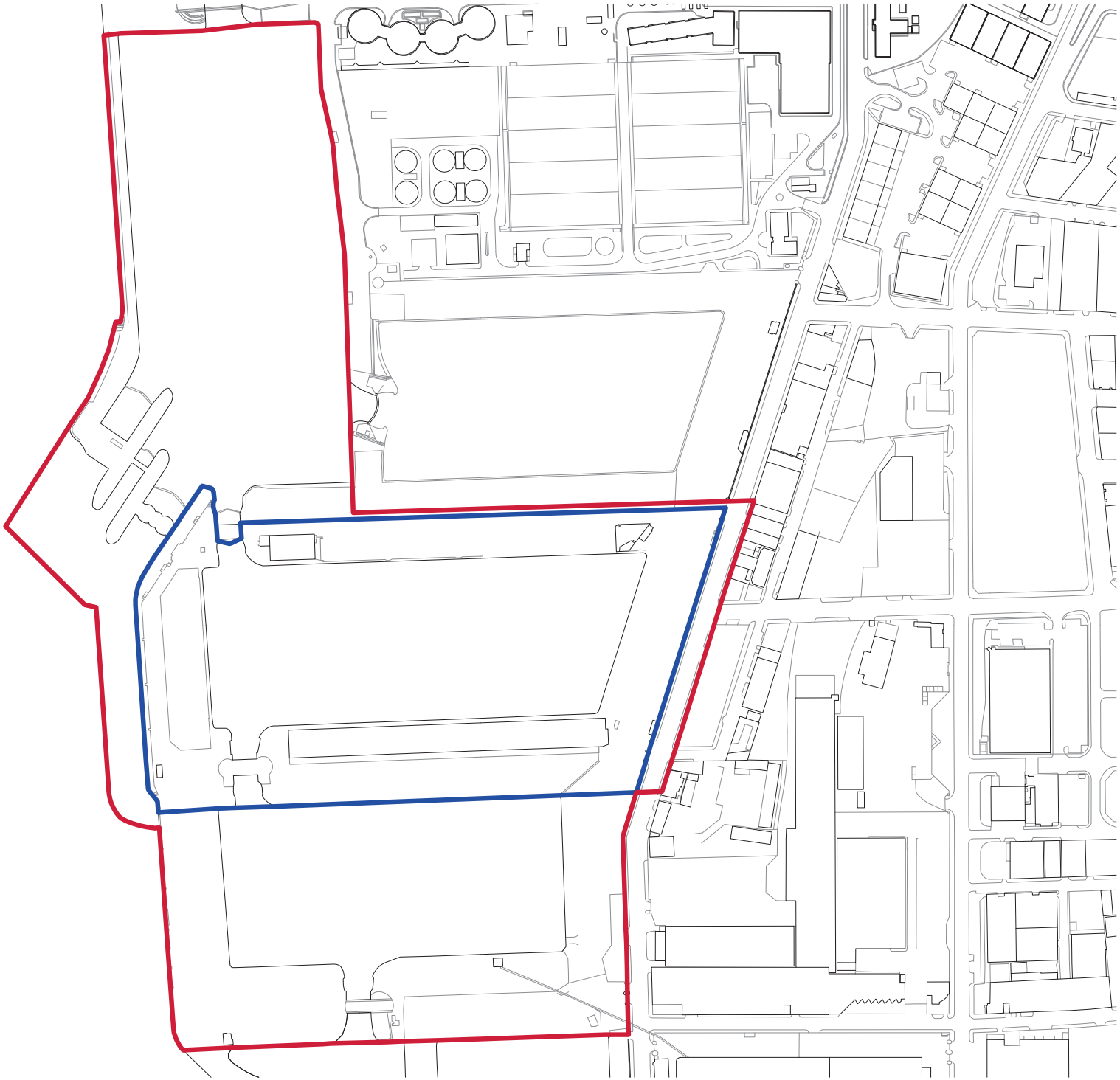
Project:
Bramley-Moore Dock Redevelopment

Client:
Everton Football Club

Map Title:
Figure 1:
Site Location Plan

Author: AC	Scale: 1:40,000
Approved TW	Rev.: F.1.
Date 15/5/2017	Status: FINAL

CBRE



MEIS

DEVELOPMENT SITE AREA
(88,406 sqm)

REDLINE INCLUDING POTENTIAL TEMPORARY LAND TAKE FOR CONSTRUCTION
(238,420 sqm)

Client
EVERTON FOOTBALL CLUB

Project
EVERTON FC STADIUM
LIVERPOOL, UNITED KINGDOM

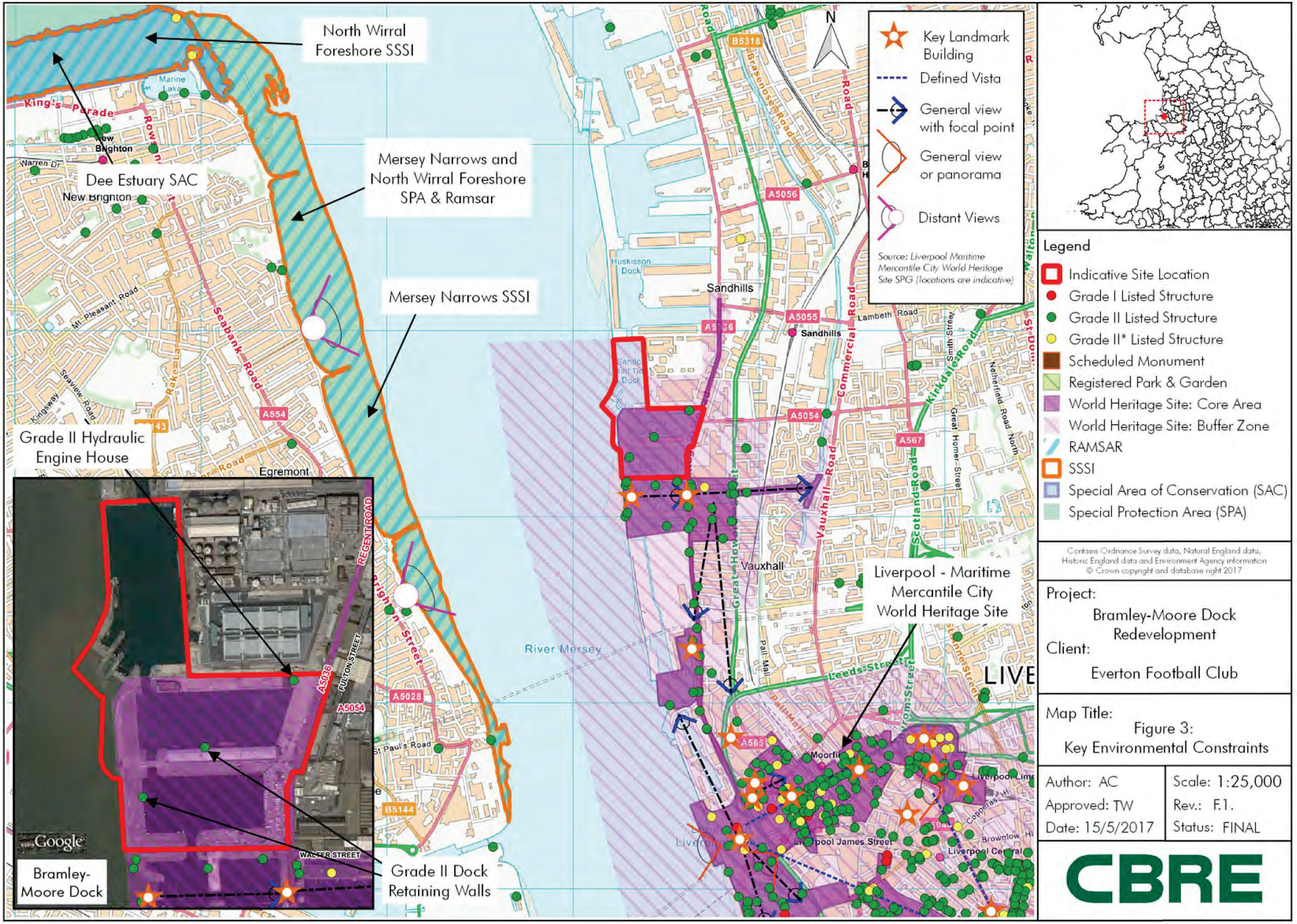
Drawing title
FIGURE 2
REDLINE BOUNDARY

Date generated
MAY 11, 2017

Scale
1:3000

0 3000 6000

Project number
14006.00_EV


North Wirral Foreshore SSSI
Mersey Narrows and North Wirral Foreshore SPA & Ramsar
Mersey Narrows SSSI
Dee Estuary SAC
Grade II Hydraulic Engine House
Bramley-Moore Dock
Grade II Dock Retaining Walls
Liverpool - Maritime Mercantile City World Heritage Site
River Mersey
Vauxhall
Sandhills
Egremont
New Brighton
Key Landmark Building
Defined Vista
General view with focal point
General view or panorama
Distant Views
Source: Liverpool Maritime Mercantile City World Heritage Site SPG (locations are indicative)
N
Legend
Indicative Site Location
Grade I Listed Structure
Grade II Listed Structure
Grade II* Listed Structure
Scheduled Monument
Registered Park & Garden
World Heritage Site: Core Area
World Heritage Site: Buffer Zone
RAMSAR
SSSI
Special Area of Conservation (SAC)
Special Protection Area (SPA)
Contains Ordnance Survey data, Natural England data, Historic England data and Environment Agency information © Crown copyright and database right 2017
Project:
Bramley-Moore Dock Redevelopment
Client:
Everton Football Club
Map Title:
Figure 3:
Key Environmental Constraints
Author: AC
Approved: TW
Date: 15/5/2017
Scale: 1:25,000
Rev.: F1.
Status: FINAL
CBRE