



The People's Project

Bramley-Moore Dock - Planning Addendum
Environmental Statement Volume 1: Non-Technical Summary
January 2021



ENVIRONMENTAL STATEMENT

VOLUME I

Non-Technical Summary

**The People's Project, Bramley-Moore Dock,
Liverpool**

Everton Stadium Development Limited

January 2021



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INTRODUCTION

Everton Stadium Development Limited (hereafter, Everton/The Club) are applying to Liverpool City Council ('LCC') for full planning permission for the development of a stadium with associated facilities and infrastructure on the site of Bramley-Moore Dock (BMD), Regent Road, Liverpool (the 'application site').

The Club, in consultation with LCC, has undertaken a series of extensive site searches over the past 20 years in order to identify a suitable site for the Club to relocate its footballing operations to a new stadium that matches the requirements of a top English Premier League club. Everton confirmed in November 2017 that it had reached an agreement (subject to obtaining planning permission) to acquire land at BMD as the potential location for its new football stadium. Everton considers BMD to provide a site that offers a suitable location and iconic setting for a new stadium; and one which retains Everton's cultural and historic ties to North Liverpool and to Goodison Park, whilst catalysing significant regeneration along Liverpool's North Docks.

In June 2013 Peel Land & Property (Ports) Limited received outline planning permission for a mixed use development, referred to as 'Liverpool Waters' (permission reference 10O/2424). The application site and the adjacent docks to the south (e.g. Nelson Dock) sit within the approved Liverpool Waters scheme. The Liverpool Waters application was referred to the Secretary of State and was not Called-In. The permission approved the following development:

'The comprehensive redevelopment of up to 60 hectares of former dock land to provide a mixed use development of up to 1,691,100 sq m, comprising: up to 733,200 sq m residential (Class C3) (9,000 units), up to 314,500 sq m business (Class B1), up to 53,000 sq m of hotel and conference facilities (Class C1) (654 rooms), up to 19,100 sq m of comparison retailing (Class A1), up to 7,800 sq m of convenience retailing (Class A1), up to 8,600 sq m of financial and professional services (Class A2), up to 27,100 sq m of restaurants and cafes (Class A3), up to 19,200 sq m of drinking establishments (Class A4), up

to 8,900 sq m of community uses (Class D1), up to 33,300 sq m of assembly and leisure (Class D2) up to 17,600 sq m for a cruise liner facility and energy centre (Sui Generis), up to 36,000 sq m for servicing (Sui Generis), and up to 412,800 sq m for parking (Sui Generis) together with structural landscaping, means of access, formation of public spaces and associated infrastructure and public realm works. (Outline Application).'

The permission encompasses five neighbourhood areas:

- Princes Dock
- Central Docks
- Clarence Docks
- Northern Docks
- King Edward Triangle

The application site, BMD, forms the Northern Docks neighbourhood, along with Nelson Dock.

The outline permission includes a condition requiring all reserved matters applications for the entire development to be submitted to LCC within a 32 year period, starting from the date of the permission (19th June 2013).

The outline permission also dictates that prior to commencement of each phase of development delivered through the outline permission, a Neighbourhood Masterplan for the relevant neighbourhood is to be submitted to and approved by LCC. To date, there have been no Neighbourhood Masterplan submissions made in relation to the Northern Docks area.

Changes to the development approved under the Liverpool Waters permission (reference 10O/2424) have been made through three Non-Material Amendments (NMA) (permission reference 18NM/2766 approved 16th November 2018; permission reference 19NM/1121 approved 23rd August 2019; and permission reference 20NM/1801, currently pending determination).

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Peel have also submitted two Reserved Matters applications (reference 18RM/1554 approved 14th June 2019 and reference 19RM/1817 approved 30th August 2019) since 2012 and therefore the outline permission remains extant.

In addition, several planning applications have been submitted and approved for development within the Liverpool Waters boundary. These applications (both outline and detailed) are referred to throughout this submission as 'standalone' as they have not been made pursuant to the outline planning application. These applications are still considered as cumulative developments, identified within the Environmental Statement which accompanies this planning application. Such standalone applications include a Cruise Liner terminal, Isle of Man Ferry Terminal, road links and residential developments.

The application site is centred on National Grid Reference (NGR) SJ3345292491. The Club are proposing to relocate from the existing stadium at Goodison Park, Goodison Rd, Liverpool (L4 4EL). It is located within the administrative boundary of LCC.

The application site (red line boundary) is 8.67 ha and predominantly comprises a dock waterbody, surrounded by a dock retaining wall and hardstanding. There are several brick buildings on the site in various states of disrepair, the most notable of which is the Grade II listed Hydraulic Engine House, to the north-east of the site. There is also a large warehouse building along the southern boundary of the dock.

The dock is separated from Regent Road to the east by a substantial dock wall (hereafter, the 'Regent Road Dock Wall') with two turreted entrances to the north-eastern and south-eastern corners of the site.

To the west of the application site is the River Mersey and this is separated from the application site by the River Mersey Wall, a concrete structure running along the western boundary that is outwith the application site.



Figure 1

Northern Docks consented development plan

Image: MEIS

The application site includes the north quay of Nelson Dock with the Nelson Dock Water body immediately to the south of the application site's boundary. The passage between BMD and Nelson Dock has been filled with an isolation

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structure. However, there remains a dock passage through to Sandon Half-tide Dock to the north.

The application site was previously used for aggregate storage and distribution, operated by Mersey Sands. However, the lease for this use expired in August 2019. It remains occupied by Svitser, which operates their tug boat services, and Cataclean until their leases expire in June 2021.

Within the Unitary Development Plan (adopted 2002), the site is currently allocated as Port land within the Developed Coastal Zone and is situated within a Conservation Area. Policies E3, OE4 and HD7 – HD14 apply (refer to Chapter 6 of this ES for further details). Within the emerging Local Plan (submission version 2018), the site is proposed as a Mixed Use Allocation within the Liverpool Waters area, situated within the 'Waterfront & its Fringes' area. Emerging policies CC10, CC11, CC12, HD1, HD2 and EC6 are relevant.

The application site 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.

The application site includes the following Listed structures:

- BMD Dock retaining walls – Grade II Listed (Ref. 1072980);
- Hydraulic Engine House – Grade II Listed (Ref. 1072981);
- Regent Road Dock wall – Grade II Listed (Ref. 1072979); and
- Nelson Dock retaining walls (north quay wall) – Grade II Listed (Ref. 1209519).

Initial Planning Application (December 2019) and Marine Licence Application Submission (March 2020)

In December 2019, the Club submitted a full planning application to LCC (LPA application reference number 20F/0001) for a previous version of the

proposed scheme. An application for a marine licence was also submitted to the Marine Management Organisation (MMO) in March 2020 (MMO reference: MLA/2020/00109). The applications were supported by a previous version of this Environmental Statement Non-Technical Summary (CBRE, December 2019).

Following the consultation process, the Club has sought to make design changes to the submitted scheme in response to the consultee comments and technical advice from the design team. To take account of the design changes, an updated planning application and marine licence application have been submitted. This revised ES (CBRE, September 2020) has also been prepared in response to the design changes and consultee comments and has been submitted in support of both applications.

ENVIRONMENTAL IMPACT ASSESSMENT

An Environmental Impact Assessment (EIA) has been carried out in accordance with the Town and Country Planning (Environmental Impact Assessment) Regulations 2011, as amended ('the EIA Regulations 2011').

The proposed scheme comprises both terrestrial and marine elements. Consent for the terrestrial and marine aspects of the scheme must be sought from separate regulatory bodies, namely the local planning authority (LCC) and the Marine Management Organisation (MMO).

Terrestrial

The procedures for undertaking EIA for a development within the terrestrial environment are set out within the Town and Country Planning (Environmental Impact Assessment) Regulations 2011, as amended [1] – (herein 'the EIA Regulations 2011'). The EIA Regulations 2011 implement the requirements of EU Directive 2011/92/EU [2] on the assessment of the effects of certain public and private projects on the environment. Whilst the EIA Regulations 2011 were replaced by the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 [3] (herein 'EIA Regulations 2017') on 16 May

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2017, the EIA Regulations 2017 contain transitional provisions under Regulation 76(2)(a) such that the EIA Regulations 2011 continue to apply where an applicant has submitted a request for a scoping opinion before the date that the EIA Regulations 2017 came into effect. Everton submitted their request for a scoping opinion on 15th May 2017 (see Chapter 2 EIA Methodology).

Under the EIA Regulations 2011, the proposed development is a Schedule 2 development (falling within Category 10(b) urban development projects) and Annex II development, for which EIA is required where the development is *“likely to have significant effects on the environment by virtue of factors such as its nature, size or location”*. The EIA regulations 2011 provide definitions of what is considered a ‘sensitive area’ in EIA terms. This list includes *“a property appearing on the World Heritage List kept under article 11(2) of the 1972 UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage”*. As the proposed development is situated within the Liverpool – Maritime Mercantile City WHS, it is considered to be within a ‘sensitive area’ and therefore, is considered to be a Schedule 2 development falling within the scope of the EIA regulations 2011.

Given the nature, size and location of the scheme, the Applicant has therefore chosen to voluntarily submit an ES to accompany the planning application. No request for a screening opinion was submitted to LCC.

Marine

The procedures for undertaking EIA for a development in the marine environment, which requires a marine licence, are set out within Marine Works (Environmental Impact Assessment) Regulations 2007, as amended [4] (hereafter, the “Marine EIA Regulations 2007”).

As per the EIA Regulations 2017, the Marine Works (Environmental Impact Assessment) (Amendment) Regulations 2017 [5] contain transitional provisions at Regulation 34 (1)(c) such that the Marine EIA Regulations 2007 continue to apply where an applicant has submitted a request for a scoping

opinion before 16th May 2017. The Applicant’s Scoping Report was also submitted to the MMO under the Marine EIA Regulations 2007 on the 15th May 2017. As such, the Marine EIA Regulations 2007 continue to apply.

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

The ES is the product of the EIA process and comprises a series of studies, surveys and consultations that have informed the design of the proposed development to seek to avoid and then minimise its environmental effects and to identify measures to ensure that the proposed development is built and ‘operated’ in a sustainable way.

This Non-Technical Summary is intended to provide members of the public, and any other interested parties without specialist technical knowledge, with sufficient information to understand the proposals and the principal findings of the EIA, as presented in the ES.

THE PROPOSED DEVELOPMENT

The proposals are for a stadium with associated facilities and infrastructure. The full description of development as it appears on the full planning application is as follows:

‘Application for Full Planning Permission in accordance with submitted drawings for the demolition of existing buildings/structures on site (listed in the schedule); remediation works; foundation/piling works; infill of the Bramley-Moore Dock, alteration to dock walls and dock isolation works with vehicular and pedestrian links above; and other associated engineering works to accommodate the development of a stadium (Use Class D2) predominantly for football use, with the ability to host other events, with ancillary offices (Use Class B1a); Club Shop and retail concessions (internal and external to the stadium) (Use Class A1); exhibition and conference facilities (Use Class D1);

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food and drink concessions (internal and external to the stadium) (Use Classes A3 / A4 / A5); betting shop concessions (Sui Generis); and associated infrastructure including: electric substation, creation of a water channel, outside broadcast compound, photo-voltaic panels, storage areas/compound, security booth, external concourse / fan zone including performance stage, vehicular and pedestrian access and circulation areas, hard and soft landscaping (including stepped plaza, canopies, lighting, wind mitigation structures, public art, tree planting and boundary treatments), cycle parking structures and vehicle parking (external at grade) and change of use of the Hydraulic Tower structure to an exhibition / cultural centre (Use Class D1) with ancillary food and drink concession (Use Class A3).'

In addition to its operation for the purposes of Everton Football Club, the stadium may also host other events, such as non-football sporting events or concerts. The operation of the stadium for such events will be subject to appropriate controls e.g. in relation to amplified sound.

The current assessment scenario for non-football events is based on four events at full capacity per year (e.g. concerts, other sporting events). In addition, the following events may also take place throughout the year:

- Meetings/Conferences- potential for up to 261 days per year;
- Exhibitions/Conventions- potential for up to 339 days per year;
- Weddings- potential for up to 79 days per year;
- Funerals- potential for up to 261 days per year;
- Banqueting- potential for up to 339 days per year;
- Christmas Parties- potential for up to 27 days per year; and
- Stadium Tours- potential for up to 339 days per year.

The Hydraulic Engine House is intended to function as an exhibition space, the start/end point for the River Walk, part of the stadium tour and as a small café / coffee shop.

The proposed scheme is detailed in Figure 2.

Figure 2

Application Site with Proposed Development

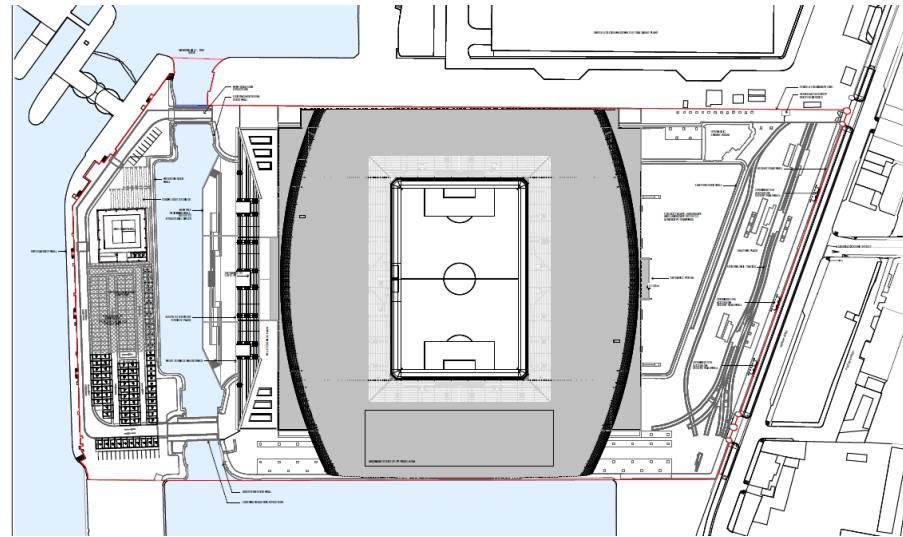


Image: Pattern Design

ALTERNATIVES CONSIDERED

Alternatives are discussed in full in Chapter 5, Volume II of the ES.

Alternative Development Sites and Designs

Due to the longstanding need to relocate from Goodison Park, a number of development sites and initial design concepts have been considered as outlined below.

Walton Hall Park: Initial Feasibility Study

Walton Hall Park was being explored by the club during the period of engagement governed by the initial design brief for the site in 2015 and was

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used as a placeholder by MEIS Architects to initiate design development whilst the site selection process was ongoing. A number of scheme options were explored as outlined below.

Walton Hall Park: Monolith Scheme

The new stadium was conceived as a simple rectilinear volume, incorporating verdant motifs into the facade. This scheme was ultimately discarded because the aesthetics were not considered Club-specific enough, and because the monumental roof and facade envelope would have presented a structural challenge, as well as representing a very costly quantity of material.

Figure 3

Walton Hall Park: Monolith Scheme

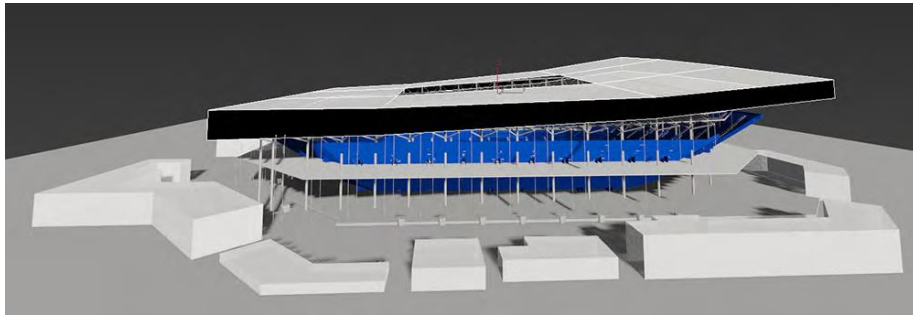


Image: MEIS

Walton Hall Park: Canopy Scheme

The new stadium is conceived as a 'pitch in a clearing in the woods.' A treelike network of spreading columns support a roof canopy, with the bowl largely exposed to external view. This scheme was ultimately discarded because it was not considered Club-specific enough; while this scheme was noted for its obvious link to the park site, the aesthetic was not considered to adequately reflect the Club's heritage.

Figure 4

Walton Hall Park: Canopy Scheme



Source: MEIS

Walton Hall Park: Supertruss Scheme

Inspiration is derived directly from the structural innovations of Archibald Leitch at Goodison Park. The large truss of the Goodison Road stand is referenced in the form of a supertruss above the Home End of the new stadium, with a more traditional exposed cantilever truss system surrounding the stadium envelope.

This scheme was progressed further than previous schemes because of its direct reference to Goodison Park; however, the structural system and facade design was considered too similar to existing English stadia and was not considered innovative enough to adequately reflect the Club's aspirations.

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Figure 5

Walton Hall Park: Supertruss Scheme



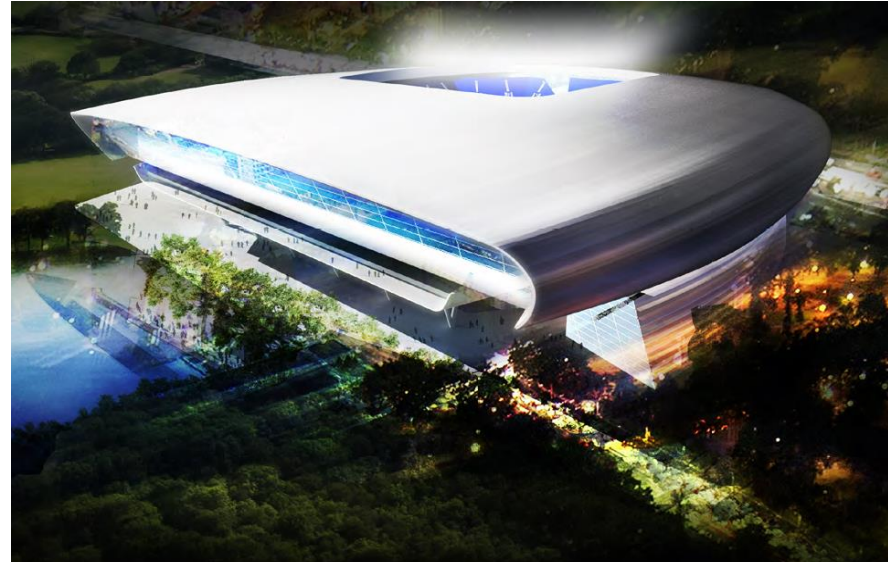
Source: MEIS

Walton Hall Park: Window Scheme

The stadium exterior is expressed as a modern, light form enclosing a bowl that is inspired by the intimate proportions of Goodison Park. The transposition of a curvilinear exterior form around a historically-derived interior was adjudged to meet the Club's project criteria for a scheme that reflects the values of the Club itself, both steeped in history and distinguished for its spirit of innovation. This scheme was 'held', pending confirmation of site by the Club.

Figure 6

Walton Hall Park: Window Scheme



Source: MEIS

Following this initial feasibility study, Walton Hall Park was not progressed as a potential site, as it was not considered to be a suitable or realistic site by either the Club or Liverpool City Council. There were also concerns regarding the amount of enabling development required to fund the scheme. Another overriding reason was the site's allocation as public open space, and significance as a City Park serving as a key resource for the North Liverpool community. This was also reinforced by the significant weight of public opposition generated by the Club's consultation on the site as a possible stadium location.

Following this, the club progressed with BMD as a potential new stadium site.

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Heritage Considerations at Bramley-Moore Dock Site

Assessing Heritage Value

In addition to the Club's brief and design principles, another crucial factor in the design process was the consideration of the heritage value of the site and surroundings.

The Club's eleven Principles of Design set out the approach to heritage, the directives of which are to respect the maritime heritage of Bramley-Moore Dock, capture the features and essence of the Club's new neighbourhood, and to make features of key restored structures on site.

The design approach to heritage can be organized into three main principles: to minimise local impact (i.e. impact to individual artefacts), to reflect the site's heritage in its masterplan, and to be inspired by, and respond to, the site's context in the aesthetic design of new elements, including the stadium.

In terms of minimising local impact, this approach seeks first to achieve a design solution that does not alter or damage existing heritage elements where possible. If impact cannot be avoided, the approach calls for the design to be mediated such that the impact to any heritage element is not permanent or is minimised. In either scenario, heritage elements are to be prominently featured and celebrated in the design, to draw visitors to the site and promote awareness of the history of the North Docks area.

For the dock infilling, which cannot be avoided in order to construct a stadium at BMD, minimising impact means the infilling and stadium engineering are designed in such a way that the historic dock walls are not only not damaged by the construction process, but can also be 'recovered' in their entirety if the stadium is disassembled in the future and the dock is returned to its prior state as a body of water.

For the required openings in the Regent Road wall, this means creating the smallest openings possible to still provide safe access to and from the site.

In terms of masterplanning, the approach to heritage calls for the holistic redevelopment of the site, in particular the public realm, in a way that is sensitive to heritage. One example is in the setting of site levels flush with the tops of the dock walls, such that the dock walls are incorporated into the plaza as a design element. Another example is the position of the stadium on site, far enough west of the Hydraulic Engine House (HEH) that the HEH is afforded room to stand alone, to reduce the impact on setting, but far enough east to allow for the creation of a water channel to visually link the Sandon Half-Tide and Nelson Docks to reduce the impact on setting, preserving the historic feature of dock interconnectivity. Yet another example is the lower pedestrian platform at the east edge of the water channel, which reveals the dock wall's north and south shoulders and provides visitors with the opportunity to examine the shoulders close up.

In terms of aesthetics, the approach seeks to draw design inspiration from, and respond to, heritage elements on site and structures within the wider North Docks area. The industrial palette of the docks provides the basis of the material palette of the new stadium. With regard to principles of facade design, the proportions and material relationships of facades within the North Docks area have been studied to inform the design of the stadium facade. For the design of the public areas, as well as the detail of new openings created in the Regent Road Wall, new design elements are not intended to imitate the existing heritage elements; rather, the new design is intended to complement the existing heritage elements, and in so doing to celebrate that which makes the heritage features unique.

Water Channel

A key heritage component is the retention of a meaningful and authentic water channel to the west of the stadium to provide visual continuity of the historic dock network. The proposed water channel will be bound by an existing isolation structure to the south (between Bramley-Moore Dock and Nelson Dock), and by a proposed isolation structure to the north (between Bramley-Moore Dock and Sandon Half-Tide Dock). The channel will be hydraulically connected to the dock system but will be non-navigable.

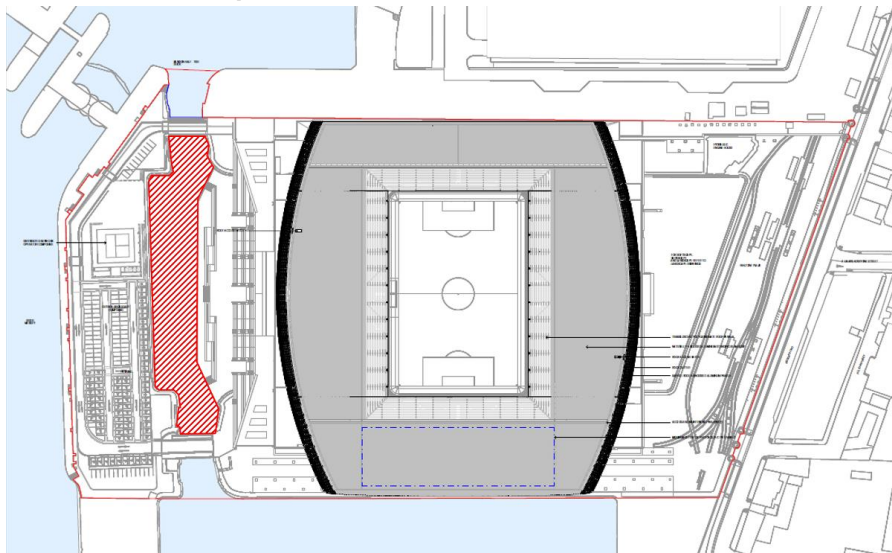
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The existing southern isolation structure is constructed out of two sheet piles with two horizontal ties. Eight pipes provide the method of connection with the two docks, controlled by sluice gates. The northern isolation structure is also proposed to be constructed out of two rows of sheet piles, pre-bored into the underlying Sandstone, connected with multiple horizontal ties. Pipes will be cast in between the two sheet piles at identical levels to the existing southern isolation structure to enable the exchange of dock water to the north and south.

The listed dock wall on the western side of the channel will form the channel's western edge. The eastern edge will be formed by a row of secant piles that will also act as a retaining wall. The retaining wall will support the terraced steps that allow close access to the water edge from the west of the stadium.

Figure 7

Extent of new water channel proposed between north and south isolation structures at Bramley-Moore Dock



Source: Pattern Design (amended)

Interaction with Hydraulic Engine House

Paragraph 1.6.3 of the World Heritage Site Supplementary Planning Document (SPD) (2009) [6] states that the conversion of historic buildings will be encouraged where it will stimulate the city centre economy and enhance the city's profile. The historic fabric of the WHS's historic buildings will be safeguarded to ensure it continues in appropriate use. Buildings considered to be 'at risk' due to their poor condition or which are under-used, will be brought into beneficial and sustainable use (para. 1.6.3).

The stock of listed buildings in the WHS is noted as being fundamental to its Outstanding Universal Value (OUV) and to Liverpool's unique sense of place. Maintaining a viable and appropriate use for historic buildings is considered an important factor in ensuring their survival, particularly as otherwise such buildings can be at an increased risk of decay. The SPD notes that '*...delivering viable and sympathetic uses for these properties is a key issue for the long-term management of the Site*' (para. 5.4.3).

Proposals for the viable and long-term reuse of historic buildings will be generally supported where they are in broad accordance with allocations and policies within the statutory development plan; maintain an appropriate mix of uses; will not result in the loss of significant elements of historic fabric and will not result in the degradation of the character of the street (para. 5.4.5).

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Figure 8

Hydraulic Engine House tower



Source: EFC

As a heritage element unique to Bramley-Moore Dock and the wider Public Realm, the grade II listed Hydraulic Engine House (HEH) is a prominent structure when viewed from Regent Road. Once the HEH is made safe, additional structural surveys are required before works are undertaken to the building and it is brought into viable use as an exhibition/cultural centre with an ancillary café use.

The HEH is an anchor element to the public pedestrian route along the River Mersey through the planned Liverpool Waters development, referred to as the River Walk. The HEH will remain publicly accessible on non-event days as well as event days; along with the retail storefront of the stadium, stadium box office, and any additional, temporary plaza amenities, the availability of the HEH contributes to the year-round usage of Bramley-Moore Dock.

Everton has committed to making the building safe and opening it up to public use. This application seeks a change of use of the building to accommodate an exhibition/cultural centre and ancillary cafe.

Bramley-Moore Dock: Design Development - Orientation

Following the Commonwealth Games feasibility study, design development at Bramley-Moore Dock continued, with operating requirements for the stadium focused on football.

Freed of the requirement for the stadium and seating bowl to accommodate an athletics mode, issues such as stadium orientation and position on site were informed by consideration of heritage elements and the design of public areas, in addition to technical considerations of stadium access and solar paths and interaction with the approved Liverpool Waters development to the south.

The current project brief confirms a minimum target capacity of 52,000, with the potential to increase subject to alteration to the stands and should safe standing be introduced in England in the future under a seating to standing ratio larger than 1:1.

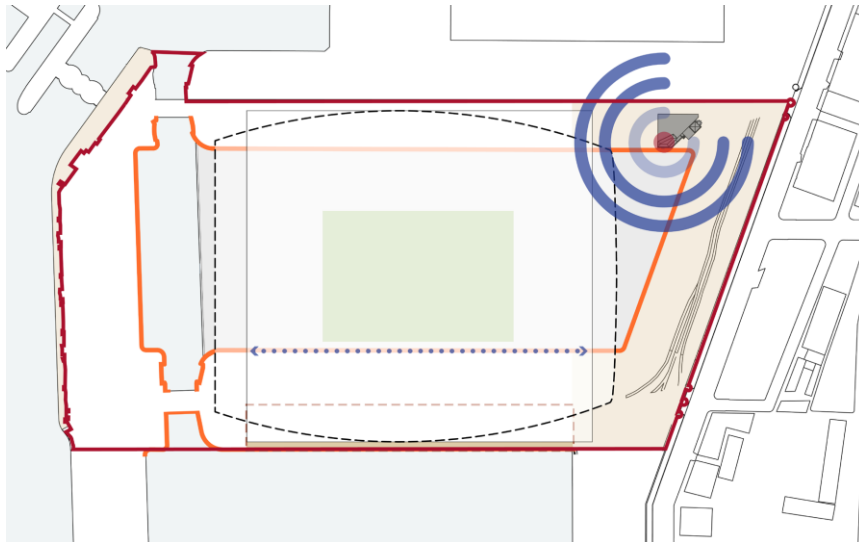
The location of the Grade II listed Hydraulic Engine House and other heritage assets is a fundamental consideration to the position of the stadium within the site. In an East-West orientation, the stadium is closer to the Hydraulic Engine House; more length of the original Grade II listed dock wall is covered by the stadium footprint; and more area of the original cobbles in the East and South of the site are covered by the stadium footprint.

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In a North-South orientation, the stadium stands further away from the Hydraulic Engine House; less length of the original dock wall is covered by the stadium footprint; and less area of the original cobbles in the East and South of the site are covered by the stadium footprint.

Figure 9

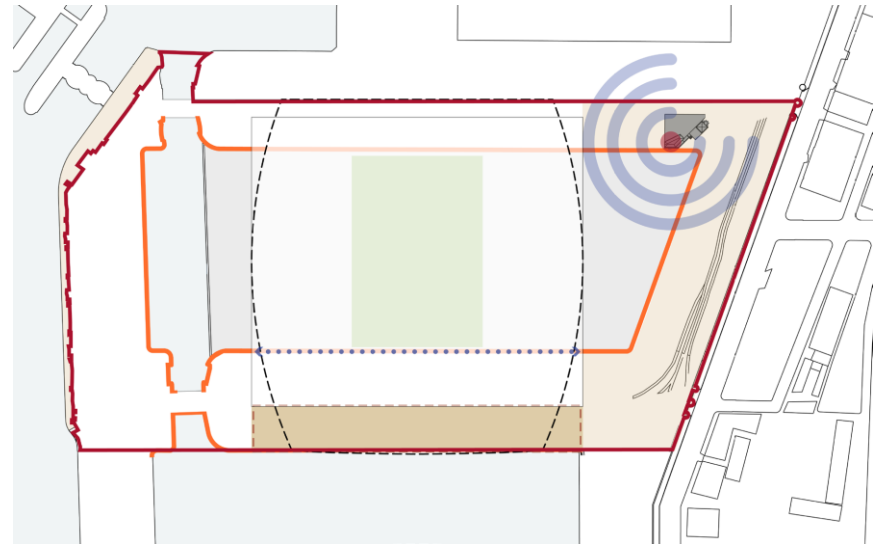
Diagram showing an East-West orientation and the vicinity to Heritage Assets on site



Source: MEIS

Figure 10

Diagram showing a North-South orientation and a further distance to the Heritage Assets on site



Source: MEIS

A number of stadium layout and orientation options were assessed as part of the initial design process with the North/South centred option chosen to progress. Given the site dimensional constraints, it was decided at the outset of the design process that the stadium is to be developed with a double concourse, providing the lower concourse at grade, to provide a tighter building footprint.

Initial Site Layout

Following consultation with HE and LCC, a water channel was included within the layout of the proposed stadium development. This maintains the visual connectivity of the interlinked dock system and, although is non-navigable,

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provides a visual reference to one of the key reasons for the WHS and Conservation Area designations.

A north-south orientation allows for large open areas to the east and west of the stadium, providing great flexibility to the design and usage of public areas and more opportunity to reveal heritage elements. This results in a large public amenity to the east of the stadium, easing ingress and egress from the site and allowing for more space between the Hydraulic Engine House and the stadium.

To the west of the stadium, a wider exterior concourse can be accommodated adjacent to the water channel visually linking the Sandon Half-Tide Dock and Nelson Docks to BMD. This layout was consulted on in Summer 2019 as part of the Liverpool City Region wide public consultation and underwent further technical assessments, including wind modelling, to understand the impact upon the site and surrounding environment.

Wind Considerations

Due to its position at the mouth of the River Mersey in the north-west of England, Bramley-Moore Dock is subject to a coastal climate. The site is exposed to prevailing winds, primarily from the north-west, west, and south-west throughout the year, but also from the south-east during the autumn and winter seasons. Given the pervasive extent of elevated wind speeds on site, any incremental increases in wind speed, including those caused by the aerodynamic performance of a building, increases the incidence rate of wind speeds that exceed thresholds for safety and comfort.

In order to understand the environment of BMD, and to inform the design response of the stadium and public realm in this environment, both physical wind tunnel testing and digital testing, known as computational fluid dynamic (CFD) testing, have been undertaken. Working with both empirical (wind tunnel testing) and predictive (CFD testing) methods allowed the design team to work effectively at a range of scales, from building massing to the design of discrete elements, to design a site that can be safely operated on event and non-event scenarios.

At a 'macro' level, wind mitigation design informed the development of stadium massing. Initially, a freestanding multilevel car park stood on the west quay of the site, with the stadium positioned to the east of the water channel. Wind mitigation performance led to the car park massing shifting to the east and joining with the stadium into one contiguous volume. Following submission of the 2019 planning application, further design refinements were undertaken to take account of construction advice and consultation feedback. This led to the multi storey car park massing on the western elevation of the stadium being removed from the design and being replaced with a stepped public realm terrace area adjoining the western stadium elevation. The stepped terrace provides a covered fan plaza below to ensure the safe arrival and departure of spectators and building users during periods of high winds.

At a 'micro' level, wind mitigation analysis shaped the design and location of elements at the west, south, and north elevations of the stadium volume, including corner conditions and elevated outdoor positions on the west side of the stadium.

More detail regarding site performance and site compliance with standards of wind safety and comfort can be found in the Wind Assessment Report, included separately in Volume II of the environmental statement (Chapter 14).

In order for the stadium and site to function safely, a number of mitigation options were considered.

Wind Mitigation Massing

Iterative testing in both wind tunnel and CFD environments prior to submission of the 2019 planning application demonstrated improved performance if the previously separate multilevel carpark structure to the west of the stadium was joined to the main stadium volume. In 2020, the decision was made to remove the multi storey car park from the western elevation of the stadium; however, it was replaced with a stepped public realm terrace area that includes a covered plaza below, allowing safe access to the western stadium entrances during high winds and adverse weather conditions.

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One of the primary benefits of the new massing is the protection from weather afforded to visitors entering the stadium on the west side. Even though winds in exceedance of safety and comfort criteria are registered to the west of the new mass, these outdoor areas are not required for normal stadium ingress and egress; the area required at ground level is contained entirely within the new covered plaza.

The exposed outdoor area to the west of the stadium, including the lower promenade adjacent to the water channel, will be open to the public in normal conditions. In high-wind conditions, this area along with access to roof terraces will be closed via operational measures, and controlled gates have been proposed to allow this management to take place.

Figure 11

Proposed stadium and stepped terrace area – west



Source: Planit-IE

Wind Mitigation Elements

In addition to the changes in the stadium massing, there are a number of other wind mitigation structures on site. During the wind tunnel testing undertaken prior to submission of the application in December 2019, measures introduced to mitigate high winds in targeted areas included horizontal baffle surfaces, mounted onto freestanding vertical piers or directly to the stadium, as well as hard & soft landscape elements.

In the scheme submitted in December 2019, the south corners of the stadium had large brick portal structures acting as mitigation for wind around the corner of the envelope. These structures extended out to the site boundary, requiring substantial structures and foundations adjacent to the dock walls.

Due to the west terrace redesign, the behaviour of the wind has now changed, lifting the wind in the corners. This has allowed for the replacement of the large brick baffles with a small grove of trees under the 2020 amendments, which offers the necessary protection at ground level for pedestrians to circulate safely around the stadium. This also serves to reduce both the scale and visual impact of the corner mitigation that was previously included within the proposals.

Along the north, west, and south areas of the stadium, mitigation measures of a material palette consistent with the stadium and industrial dock heritage have been deployed to bring the site into compliance on both event and non-event days. In line with the scheme proposals submitted in December 2019, there is a series of baffles fixed to the building along the north passageway. There is also a line of free-standing baffles along the south facade, between the groves of trees at the corners.

The foundations of the baffles and vertical piers will follow the same principles of the stadium foundation design, avoiding conflict with the listed dock retaining walls.

The north baffles along the north passage way and the central baffles at the south facade will be used for advertising and signage. The location of the

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baffles has been tested regarding the pedestrian and crowd modelling as well as the vehicular routes, to confirm they do not impede flows.

Figure 12

Proposed wind mitigation elements at south-west corner of stadium



Source: Planit-IE

Figure 13

Proposed wind mitigation elements at south-east corner of stadium



Source: Planit-IE

Further information on the scale and massing of the proposals is contained in the Design and Access Statement and Design & Access Statement Addendum submitted alongside the planning application.

THE ENVIRONMENTAL STATEMENT

Structure of the Document

This ES comprises the following:

- **Volume I:** Non-Technical Summary of information contained in Volumes II and III to make it readily comprehensible to non-specialists.
- **Volume II:** Main Volume of the ES which describes the proposals, the alternative options considered, the baseline environmental conditions, the

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likely significant effects of the proposed development, the proposed mitigation measures and the residual environmental effects.

- **Volume III:** Technical Appendices containing 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.

Where it has been considered that technical areas are unlikely to exhibit significant environmental effects, these topics have been scoped out of the assessment, in agreement with LCC.

Effect Significance

Effects are generally understood to be 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 generally considered using a common scale, with effects described as being 'major', 'moderate', 'minor' or 'negligible' (which also includes neutral or no impact assessments).

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 generally considered to be 'Significant' where they are of 'Moderate' or 'Major' significance (either adverse or beneficial). The only exception is the assessments reported in the daylight, sunlight, overshadowing and solar glare chapter, where 'Minor' effects are also considered 'Significant'.

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 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 5 years;
- **Medium term** – an effect lasting between 5 and 10 years;
- **Long term** – an effect lasting more than 10 years; and
- **Cumulative** – increasing by one addition after another (e.g. traffic generated by different developments occurring in close proximity to one another).

Cumulative Effects

The EIA Regulations 2011 require that all significant effects of a development are considered, including cumulative effects. The two main types of cumulative effects are as follows:

- **Inter-development effects:** The combined effects of the proposed development together with other reasonably foreseeable developments

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(taking into consideration effects at both the construction and operational phases); and/or

- Intra-development effects: The combined 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.

Inter-development effects are generally considered within each of the technical chapters in Volume II and their corresponding appendices within Volume III, whereas intra-development effects are considered within Chapter 21, Volume II.

The schemes shown in Table 1 have been assessed as part of the cumulative assessment.

Table 1
Cumulative schemes

APP. NO.	ADDRESS
16F/1370 & 17F/2056	"The Lexington", William Jessop Way
17F/1628	"Quay Central", Plot C04 and "Park Central" C06, land to west of Waterloo Road, Central Docks
15L/2749	Southern Warehouse, Stanley Dock, Regent Road
15F/2438	Conversion of former Tobacco Warehouse, Stanley Dock
16F/2252	"Fox Street Student Village", Swainbanks Limited, 50 Fox Street
17F/3525	New Merseyside Police Headquarters, 30 Grosvenor Street
16F/2755	"Aura", Manfred Street/Erskine Street
13F/1599	Royal Liverpool University Hospital, Prescot Street
14F/0874	"One Islington Plaza", Devon Street/Moss Street

APP. NO.	ADDRESS
17F/1037	"Devon House", 33 Devon Street
18F/0347	"Fabric Village", Gildart Street/ Devon Street
19F/0294	"Natex", Land at Norton Street/ Islington (former National Coach Station)
13F/2947	"The Paramount", Pudsey Street/28 London Road
16F/1539	"Horizon Heights", Land bounded by Skelhorne Street, Bolton Street, Hilbre Street
18F/1410	LJMU Campus, Copperas Hill/ Brownlow Hill
18F/2751	Renshaw Hall, Benson Street
17F/1982	"One Wolstenholme Square", 5 Parr Street & Wolstenholme Square
18F/0301	"The Address at One Wolstenholme Square", 18-24 Seel Street
18F/3231	The Isle of Man Ferry Terminal, West Waterloo Dock
16F/1826	"Strand House", 21 Strand Street
16P0/0741	Silkhouse Court, Tithebarn Street
17F/0340 & 19F/1611	"Infinity", Leeds Street/Pall Mall
100/2424	"Liverpool Waters"
18RW/1554 & 19RW/1817	"William Jessop House", William Jessop Way, Princes Dock
170/3230 and 19RW/1037	Liverpool Cruise Liner Terminal, Princes Dock
18F/3247	Plot C02, Liverpool Waters
19F/1290	Site bounded by Waterloo Road/ Paisley Street/ Roberts Street/ Greenock Street
18F/0216	"The Metalworks", Vauxhall Road
17F/0874	9-27 Freemasons Row

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APP. NO.	ADDRESS
18F/1035	"Naylor Street – Phase 1", St Bartholomew Road/Paul Street/ Naylor Street
13RM/2633	Land between Blackstock Street & Paul Street
16F/3078	"The Tannery", Bevington Bush/Gardners Row/ Edgar Street
17F/1911	"Bevington House", Bevington Bush/ Aldersey Street
18F/0417	Land bounded by Whittle Street/Smith Street/ Kirkdale Road
16F/2797	"Rose Place", Virgil Street/Great Homer Street
16F/0823	Citipads, Land at Fox Street/St Anne Street
19F/0454	"Copperas House", Copperas Hill Police Station, Copperas Hill
14F/1313, 17F/0103, 17F/2135 and 17F/3094	"Baltic Square", Park Lane, Beckwith Street, Carpenters Row and Cornhill (former Heaps Rice Mill)
14F/1305, 17F/0107 and 17F/2768	"One Park Lane", Land bounded by Park Lane, Pownall Street, Liver Street and Beckwith Street
16F/2634	30-36 Pall Mall
19F/1789	Pall Mall Exchange Phase 1
OUT/09/06509	Wirral Waters (Wirral MBC)
17F/0913	Vacant Land William Jessop Way Liverpool L3 1QW
20F/1203	Vacant Land, Plot A06 William Jessop Way Princes Dock Liverpool L3 1QP
19F/1038	Plot 11, Land Off Princes Road Princes Dock Liverpool
20F/0217	Land bounded by Blackstone Street, Fulton Street and Regent Road Liverpool 5
20F/1947	Lightbody Street
200/0997	Goodison Park Stadium

APP. NO.	ADDRESS
Awaited	70-90 Pall Mall
Awaited	"The Northern Quarter", Leeds Street/Vauxhall Road/Pumpfields Road
Awaited	"Ten Streets"
Awaited	Mount Pleasant car park site
Awaited	Former ABC Cinema, Lime Street
Awaited	"Ovatus 2", Leeds Street/ Back Old Hall St

EIA 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 to avoid the unnecessarily complicated examination of minor issues. In practice, the process involves determining the information that needs to be included in the ES through consultation with the competent authority, statutory consultees and other stakeholders.

The proposed scheme comprises both terrestrial and marine elements. Consent for the terrestrial and marine aspects of the scheme must be sought from separate regulatory bodies, namely the local planning authority, LCC and the Marine Management Organisation (MMO).

SCREENING

Screening is the first stage of the EIA process. It establishes if a development is 'EIA development' and whether the planning application therefore needs to be accompanied by an ES.

The Club has chosen to voluntarily submit an ES in accordance with Part 2, 4. [2] (a) of the EIA Regulations 2011 (amended 2015) given the location of the site and sensitivity of the surrounding area. A request for a screening opinion was not submitted to LCC under Regulation 5(1) of the EIA Regulations 2011 (amended 2015) [1].

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SCOPING

The Intended 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 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 ES documents that 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.” [4]

Request for a Scoping Opinion

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 to avoid the unnecessarily complicated examination of minor issues. In practice, the process involves determining the information that needs to be included in the ES through consultation with the competent authority, statutory consultees and other stakeholders.

A request for a scoping opinion ('Scoping Report') was compiled and submitted to LCC on 15 May 2017.

Marine

The procedures for undertaking EIA for a development in the marine environment, which requires a marine licence, are set out within the Marine

Works (Environmental Impact Assessment) Regulations 2007 [4] (as amended in 2015 [8]) (hereafter, the “Marine EIA Regulations 2007”).

As per the EIA Regulations 2017, the Marine Works (Environmental Impact Assessment) (Amendment) Regulations 2017 [9] contain transitional provisions at Regulation 34 (1)(c) such that the Marine EIA Regulations 2007 continue to apply where an applicant has submitted a request for a scoping opinion before 16th May 2017. The Applicant's Scoping Report was also submitted to the MMO under the Marine EIA Regulations 2007 on the 15th May 2017. As such, the Marine EIA Regulations 2007 continue to apply.

SCOPED DOWN TOPIC AREAS

The Scoping Report proposed that the following topics would be 'scoped down' (i.e. included within the ES technical appendices but not meriting the preparation of a stand-alone technical chapter within the main volume). It was considered unlikely that these technical topics would exhibit significant environmental effects, but further assessment was required to satisfy planning requirements:

- Solid Waste Management.

A scoping response was received from MEAS on 23rd June 2017 stating they disagreed with the proposal to scope down the topic of Waste Management, however through subsequent correspondence between CBRE and MEAS in September 2017 (and subsequent further consultation with MEAS 21st August 2019 as detailed in Chapter 12 of this ES Volume), it was agreed that this topic was adequately covered elsewhere in the ES and should be scoped down.

As set out in the scoping report, the additional topic areas of climate change and greenhouse gas emissions; major accidents & disasters; and human health, are not provided in individual ES chapters however are covered within each technical chapter where relevant.

SCOPED IN TOPIC AREAS

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The Scoping Report proposed that the following topics would be 'scoped in' for further consideration in the ES, as significant environmental effects are considered likely:

- Socio-Economics;
- Ground Conditions;
- Water;
- Biodiversity;
- Townscape & Visual;
- Built Heritage;
- Archaeology;
- Transport;
- Air Quality;
- Noise & Vibration;
- Daylight, Sunlight & Overshadowing;
- Wind; and
- Lighting.

The EIA Scoping Report is included as **Appendix 2.1, ES Volume III**.

Each technical assessment chapter provides a detailed appraisal of the potential and likely significant effects of the proposed development during construction and operation. Further details regarding the ES findings for each of these technical areas are provided in the following sections.

TRANSPORT (CHAPTER 7, VOL II)

This ES Chapter assesses the impact of traffic in terms of Severance, Pedestrian Amenity, Pedestrian Delay, Accidents and Safety and Driver Delay as outlined within the IEMA guidelines.

Baseline Conditions

These have been assessed for the non-match day / non major event day scenarios. In addition, impact of the proposed development on the operation of the transport network, access to Nelson Dock, and risk of crowd disaster and violence have been assessed for the scenario when the proposed development will host a football match or major event. All these impacts have been assessed in the construction, opening year (modelled year was 2023 which is unchanged from the 2019 submission as agreed with LCC Highways) and during the future operation scenario (2028). The impact of the proposed development on the operation of the road network on match days is considered not to be one of the main impacts of the proposed development. Accordingly, no transport modelling of match /event day road impact is undertaken in this EIA nor assessment of the individual traffic impact on the road network. Instead an assessment of the impact of the operation of the proposed development during match/event days on the transport network and its resilience has been considered.

Construction Phase Effects

The assessment of all the IEMA criteria found that during the construction period, the construction vehicles anticipated for the proposed development are to have a negligible effect on the local network links assessed. This is with the exception of the impact of construction on pedestrian amenity which was found to be minor adverse in significance.

A Construction management plan has been proposed to support the construction period to ensure that there is minimal disturbance due to the construction.

Operational Phase Effects

The same assessment as for construction above has been undertaken for the operational traffic flows on non-match days and non-major event days. The 2023 & 2028 with development scenario has been compared against the 2023 & 2028 Baseline. The assessment demonstrated that there is anticipated

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to be a negligible impact of the proposed development on all of the criteria set out within the IEMA guidance assessed in this section.

For the assessment of impact on pedestrian, cycle and vehicular access to Nelson Dock on match days and major event days, impact was found to be negligible. For the assessment of the impact of the proposed development on the operation of the transport network when a match is played, or a major event is held at the application site, the impact was found to be minor adverse. The assessment of the impact of crowd disaster and violence was determined to be minor adverse.

A Travel Plan is proposed to reduce the number of staff vehicles generated by the site when operational. Mitigation of match day impact will come forward in the form of the Transport Strategy and Crowd Safety Policies and Measures. These will include road closures, and management systems to ensure that the satisfactory operation of the transport network is maintained and the safe movement of crowds and reduction in the risk of crowd violence. These measures will also help to maintain access to local residents and businesses through the traffic restriction period.

AIR QUALITY (CHAPTER 8, VOL II)

The Air Quality Chapter of this ES, prepared by WYG, discusses and predicts the potential effects during the construction and operational phase of the proposed development.

Baseline Conditions

Monitoring of air quality within LCC and SMBC is undertaken through both continuous and non-continuous monitoring methods. These have been reviewed in order to provide an indication of existing air quality in the area surrounding the application site.

As required under section 82 of the Environment Act 1995, LCC has undertaken an ongoing exercise to review and assess air quality within its area of jurisdiction. The assessments have indicated that concentrations of NO₂ are

above the relevant Air Quality Objectives at locations of relevant public exposure.

LCC has one designated Air Quality Management Area (AQMA) for NO₂ that covers the entirety of the City of Liverpool. The application site is within the Liverpool City AQMA; therefore, this has been included within this assessment.

Construction Phase Effects

The potential effects during the construction phase include fugitive dust emissions from site activities, such as demolition, earthworks, construction and trackout. The impacts during the operational phase take into account of exhaust emissions from additional road traffic generated due to the proposed development. The effect on ecological receptors has been assessed during the construction and operational phase.

During the construction phase, it is anticipated that dust sensitive receptors will potentially experience increased levels of dust and particulate matter before using any mitigation and control measures. However, these are predicted to be short-term and temporary impacts. Throughout this period, the potential impacts from construction on air quality will be managed through site-specific mitigation measures detailed within this assessment. With these mitigation measures in place, the effects from the construction phase are not predicted to be significant.

Operational Phase Effects

The assessment of the long-term significance of the effects associated with both the committed and proposed developments with respect to nitrogen dioxide and particulate matter exposure is determined to be 'negligible' at all existing sensitive receptor locations.

The assessment of the short-term effects at the existing residential properties during a pre and post-match day event, with respect to nitrogen dioxide exposure is determined to be 'negligible' at all existing sensitive receptor locations.

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Following the adoption of the recommended mitigation measures during the construction phase, the development is not considered to be contrary to any of the national, regional or local planning policies.

NOISE & VIBRATION (CHAPTER 9, VOL II)

WYG have undertaken a noise and vibration assessment for the proposed development at Bramley-Moore Dock, Regent Road, Liverpool. The Noise and Vibration ES chapter discusses the potential impacts during the construction and operational phase of the development. The noise assessment report considers relevant national and local planning policy and guidance including the National Planning Policy Framework.

Baseline Conditions

The assessment included 'baseline' monitoring to establish existing background noise levels around the application site including locations representative of closest sensitive receptors.

The results were used to determine the noise exposure of both existing and proposed sensitive receptors during construction and in the operational phase.

Construction Phase Effects

During the construction phase, the potential impacts from construction on noise and vibration will be managed through site-specific mitigation measures detailed within the assessment and Chapter 4 of the main ES Volume II. With these mitigation measures in place, the effects from the construction phase are not predicted to be significant.

During the construction phase, it is anticipated that noise and vibration associated with dock infill, demolition and other construction activities will represent a Minor-Moderate significance without the implementation of any mitigation measures. Following the implementation of best practice measures detailed within the CEMP and construction phase noise and vibration

monitoring, the effect of noise and vibration from the construction phase is not considered to be significant.

Operational Phase Effects

During the operational phase, the potential impacts from road traffic noise on existing receptors has been assessed, and noise levels are predicted to change by no more than 2.2 dB. Noise level changes of up to ± 3 dB are generally imperceptible to the human ear, therefore the predicted changes in road traffic noise levels are predicted to be not significant.

During the operational phase of the development, noise intrusion associated with the proposed stadium use is identified as having a Major-Moderate significant effect at the closest existing and proposed residential receptors. However, as the proposed development use is limited to regular, scheduled events that take place over a short time scale, then the assessment of the change in noise level is considered to represent a more suitable approach to determine the significance of effects from the proposed stadium. The change in noise level assessment has identified that the proposed stadium will have a Negligible-Minor significant effect at all existing and proposed receptors.

Based on the assessment undertaken and data, methodology and assumptions used within this assessment, it is concluded that the site is suitable for the proposed development.

GROUND CONDITIONS (CHAPTER 10, VOL II)

Baseline Conditions

The application site comprises Bramley-Moore Dock (BMD), located on the River Mersey. The site predominantly comprises a dock waterbody, surrounded by a Grade II Listed dock retaining wall and hardstanding. A Hydraulic Engine House (Grade II listed) is situated in the northeast corner of the site. A two-storey brick structure sits at the western end of the north wharf and a shed structure sits on the southern wharf. The site was recently used for aggregate storage and distribution, operated by Mersey Sands. However, the

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lease for this land use expired in August 2019. The site remains occupied by Svitzer (operating tugboat services) and Cataclean, until their leases expire in June 2021.

Combined geoenvironmental and geotechnical ground investigations were undertaken over two phases during 2017 and 2018. These included investigation of the dock wharves (on-shore) and within the dock basin (offshore).

A total of 14 groundwater samples were taken during two rounds of sampling in seven monitoring rounds distributed across the dock wharves. Marginal exceedances of relevant screening thresholds were recorded for cyanide, mercury, arsenic, boron, copper and zinc on some monitoring rounds. Oil sheen was recorded over the two monitoring rounds corresponding with the location of the former tar works. 15 samples of Dock Deposits were obtained across the two phases of ground investigation. Exceedances generally were not significant and are likely to be a property of deposits throughout the wider dock system. Ground gas monitoring was undertaken over eight to nine monitoring rounds at five locations on the dock wharves. No methane was recorded over the monitoring period.

Construction Phase Effects

During construction, workers involved in the below ground works may be exposed to contaminants via direct or indirect ingestion, inhalation and/or dermal contact. Mitigation will be achieved through implementation of appropriate health, safety and hygiene regime (to include PPE and welfare provisions), good construction practice and removal of any gross contamination. Measures will also be implemented to minimise infiltration and prevent the creation of downward migration pathways in addition to further monitoring to fully characterise the site's ground gas regime. However, the identified effects from the construction phase to a range of potential receptors following mitigation has been found to be negligible.

Operational Phase Effects

Post development, future site occupiers / visitors may be exposed to contaminants via direct or indirect ingestion, inhalation and/or dermal contact in areas of public open space / soft landscaping. Future site users could also be exposed to flammable or asphyxiating gases and vapours in enclosed spaces. Future site users are site workers and visitors to the Proposed Development (commercial use). There is also the potential for migration of hazardous ground gas / vapour and for its accumulation to hazardous concentrations in any enclosed spaces. However, the identified effects from the proposed development to a range of potential receptors following mitigation has been found to be negligible. When assessed in combination with the Liverpool Waters scenario being built out, the effects are considered to be negligible to minor.

WATER RESOURCES & FLOOD RISK (CHAPTER 11, VOL II)

The assessment of water resources and flood risk includes the hydrological effects of flooding and potential for pollution effects to the Mersey Estuary, Docks, and River Mersey, on and from the proposed development. The study looks at how the operational development will influence flood risk, within the site and beyond its boundary.

A Flood Risk Assessment and Drainage Strategy (Appendix 12.3 and Appendix 12.4, ES Volume III) have been prepared, providing details on how the surface and foul water will be managed to ensure that water quality, flood risk and surface water drainage infrastructure capacity are not compromised. This also includes designed-in mitigation, showing how the scheme will have a beneficial effect upon flood risk on-site.

Consultation with United Utilities (UU) and LCC as LLFA (Local Lead Flood Authority) has led to an agreed surface water strategy with no restricted discharge to watercourse, and agreement to connect to the existing UU combined sewer for foul water drainage.

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Construction Phase Effects

Construction activities could potentially cause temporary but significant effects on water quality, without appropriate mitigation put in place through construction best practice in accordance with industry guidelines. Mitigation measures are recommended including interception methods and soil protection techniques i.e. dust suppression, avoidance of stockpiling, covering of stockpiles where possible, implementation of pollution & drainage controls, spillage containment for fuel / waste storage areas as good practice. With all mitigation measures in place no significant impacts to human health or environmental receptors are expected to arise from potential contamination at the application site.

With the suggested mitigation, the effect to the Mersey Estuary, Docks, and River Mersey is considered to be negligible to minor adverse and temporary. The effects on drainage infrastructure with increased sedimentation during construction are considered to be negligible through the implementation of a number of suggested mitigation measures.

Operational Phase Effects

Although there will be an increase in water demand and capacity required for foul drainage, the development will need to meet water efficiency standards through a number of measures. These will assist in reducing potable water and foul water demand, through design and construction.

Residual Effects and Conclusions

The Flood Risk Assessment demonstrates that through the careful design of the Proposed Development and the incorporation of the mitigation measures outlined, there is no significant change to the flood risk both on-site and offsite and the development is safe from flooding for its designed lifetime.

The Drainage Strategy demonstrates that as the proposed development progresses, the approach to foul and surface water will deliver a sustainable method for managing surface water, which would satisfy both national and local planning policy requirements.

Through a number of mitigation measures, described above, the scheme should have negligible to minor adverse (not significant) effects on all receptors during construction. Negligible effects are predicted during operation on all receptors assessed following the implementation of specified mitigation measures.

TERRESTRIAL ECOLOGY (CHAPTER 12, VOL II)

WYG have undertaken an ecological assessment for the proposed development at Bramley-Moore Dock, Regent Road, Liverpool. This ES chapter discusses the potential impacts during the construction and operational phase of the development. The ecology assessment report considers relevant national and local planning policy and guidance including the National Planning Policy Framework.

Baseline Conditions

The assessment included 'baseline' surveys to establish existing ecological conditions in and around the application site. The results were used to evaluate the ecological importance and potential effects of the application site and proposed development in terms of CIEEM guidelines (CIEEM 2019) [10].

Liverpool Bay/Bae Lerpwl Special Protection Area lies adjacent to the application site which supports internationally important populations of wintering birds. The application site itself contains scattered scrub, tall ruderal vegetation, ephemeral /short perennial vegetation, introduced scrub, Bare ground – Hard standing and Buildings. In addition, the centre of the application site comprises a large deep waterbody which leads into Sandon Half-Tide Dock from the north-west corner, and into Nelson Dock from the south west corner via pipes cast in an existing isolation structure between the two docks.

Construction Phase Effects

During the construction phase of works potentially significant effects of the proposed development include habitat loss for qualifying features of

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designated sites, loss of nesting habitat for bird species and loss of a bat roost. However, mitigation proposed for the construction phase of the proposed development reduces all effects of the construction phase to not significant.

Operational Phase Effects

During the operational phase, potentially significant effects to ecological receptors are confined to potential bird strike incidents which may result in an adverse effect upon qualifying features of the surrounding designated sites, and habitat degradation through deposition of waste/litter.

Mitigation proposed for operational phase of the proposed development reduces all effects of the operational phase to not significant.

AQUATIC ECOLOGY (CHAPTER 13, ES VOL II)

Potential effects originating from the proposed development have been identified and assessed with respect to the construction and operation phases; in addition, cumulative effects have been considered to take into account a number of surrounding developments e.g. Liverpool waters and Liverpool cruise liner terminal. The effects assessed include habitat loss, underwater noise and vibration, increased suspended sediment, changes to hydrodynamic regime, entrainment, accidental spill and release of an environmentally harmful substance, spread of invasive non-native species and lighting / overshadowing. Each of these effects was assessed in terms of their likely effect on fish and shellfish, benthic fauna and flora and marine mammals.

Baseline Conditions

Data used to inform the baseline characterisation of the aquatic ecology chapter were drawn from a combined review of the available literature and site-specific surveys undertaken in support of the proposed development. The site-specific surveys undertaken to inform the assessment provided a snapshot of the fish and benthic assemblages within the study area. Overall the aquatic species and habitats of Bramley-Moore Dock are considered typical of the

surrounding Liverpool dock network and the lower Mersey. Potential receptors identified during the surveys were fish & shellfish, benthic ecology, water quality and marine mammals.

Construction Phase Effects

Active mitigation is recommended in the form of a fish rescue, water quality monitoring and abstraction licencing to mitigate specific effects such as increased fish mortality, entrainment of elvers and reduced water quality because of construction activities. With this mitigation in place there are no potential significant effects to aquatic ecology during the construction phase.

Operational Phase Effects

Development design mitigation measures are proposed to further reduce the overall significance of changes to the hydrological regime, habitat loss and accidental spill and release of an environmentally harmful substance. Potential effects to fish, shellfish and the benthic ecology of the dock during the operational phase are considered negligible and therefore not significant with appropriate mitigation in place.

WIND MICROCLIMATE (CHAPTER 14, ES VOL II)

Background

Wind tunnel testing and Computational Fluid Dynamics (CFD) modelling of the application site, and the proposed development with existing and cumulative development surrounds, has been undertaken to quantify the local wind microclimate.

As part of the 2019 assessment, wind tunnel tests were undertaken to test the effectiveness of the proposed landscaping scheme, design interventions and mitigation measures which were incorporated into the design of the proposed development. These wind tunnel tests were calibrated with CFD modelling, and the CFD was determined to provide an accurate representation of the wind model. As such, for the updated 2020 design, CFD modelling alone was

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used to test the implications of the proposed development on the wind environment. The wind tunnel and CFD tests provided a detailed assessment of the mean and gust wind conditions around the proposed development in terms of pedestrian comfort and safety. The tests also provided a basis to assess the effect of the proposed development relative to the application site conditions and the suitability of the wind microclimate for various proposed pedestrian and site occupant activity/use (sitting at amenity space, standing at entrances, bus stops and mixed use communal amenity space, strolling at thoroughfares and walking) using the well-established Lawson Comfort Criteria. The following four configurations were tested with the updated 2020 design using CFD modelling:

Configuration 1 – Existing application site and existing surrounding buildings (Baseline);

Configuration 2 – Liverpool Waters approved scheme on-site and in Nelson Dock with cumulative surrounding buildings (Future Baseline);

Configuration 3 – Proposed development on-site with existing surrounding buildings, proposed landscaping scheme and design interventions; and

Configuration 4 – Proposed development on-site with cumulative surrounding buildings, proposed landscaping scheme, design interventions.

The meteorological data for Liverpool indicates that the prevailing wind direction throughout the year is from the west quadrant, and secondary winds blow, particularly during the autumn and winter, from the south-easterly direction.

The wind conditions around the existing application site are reported as being suitable for sitting use to uncomfortable for all pedestrian use during the windiest season; which is a particularly windy environment for an urban site. There are a large number of locations both on and off-site in the baseline scenario with unsuitable wind comfort conditions, and safety exceedances occur at a number of locations both on-site and in the surrounding area in the baseline scenario.

Construction Phase Effects

The construction of the proposed development is unlikely to generate winds that are significantly windier at pedestrian thoroughfares around the application site, than those expected around the completed development. Accordingly, the likely effect is judged to be negligible at the construction site and ranging from negligible to minor adverse off-site.

Operational Phase Effects

With the proposed development, proposed landscaping and design interventions, introduced to the existing site, wind conditions on-site would be considerably calmer than in the baseline.

There would still be a number of locations with uncomfortable and unsafe wind conditions at the ground level public realm areas to the west of the proposed stadium (in front of the west terrace by the water channel and the west quayside) as well as the top of the western terrace area. As such, the following mitigation measure would be expected to ensure that these areas would only be accessible when winds are safe and comfortable for the intended pedestrian use:

- A robust monitoring system, which will monitor both local wind conditions and daily meteorological data to only allow access to pedestrians when wind conditions would be both suitable for the intended use and safe, controlling access to the terrace level amenity areas and the ground level amenity space to the west of the stadium.

On-site, wind conditions would range from suitable for sitting to strolling use during the windiest season in locations that are not access controlled. With the monitoring system in place, all thoroughfares and entrances would be suitable for intended use.

There would be designated seating areas in the fan plaza to the east of the stadium, along the southern thoroughfare, and across the water channel from the stadium which would have unsuitable wind conditions during the summer season for their intended use and would require mitigation measures to ensure

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a comfortable wind environment for pedestrians. All other amenity and designated seating locations would only be accessible when wind conditions would be suitable for the intended use during the summer season.

Off-site, wind conditions would not materially change from those in the baseline with conditions ranging from suitable for standing use to uncomfortable for all pedestrian use during the windiest season.

DAYLIGHT, SUNLIGHT AND OVERTHROWING (CHAPTER 15, VOL II)

An assessment has been made of the likely environmental effects of the proposed development with respect to daylight and sunlight on the existing surrounding buildings. The assessments have been undertaken in accordance with the relevant planning policies and industry best practice guidance to assess the significance of the proposed development in terms of daylight and sunlight.

The methodology for the assessment of daylight and sunlight is set out in the Building Research Establishment (BRE) Guidance (BRE Handbook 'Site Layout Planning for Daylight and Sunlight 2011: A Guide to Good Practice') [11]. The guidance is designed to be primarily referenced against residential accommodation.

Baseline Conditions

The assessment includes the current receptors on Regent Road and future receptors of the Liverpool Waters Scheme (approved development blocks on Nelson Dock as per approved parameters plans associated with outline planning permission LPA ref. 10O/2424 and subsequent Non-Materials Amendments).

The following scenarios have been assessed:

- Baseline Scenario
- Future Baseline Scenario: Conditions A and B

- Proposed Development versus Baseline Scenario
- Proposed Development versus Future Baseline Condition A

Baseline Scenario

This scenario consists of Bramley-Moore Dock (the application site) and Nelson Dock in their existing condition and considers the daylight and sunlight currently being received within the existing residential receptors.

Future Baseline Scenario

- The Future Baseline Condition A consists of the Existing conditions at the application site but assuming development of the Liverpool Waters scheme on Nelson Dock.
- The Future Baseline Condition B consists of the consented Liverpool Waters scheme built out across both the application site and Nelson Dock.
- Under both Conditions A and B, the daylight and sunlight levels at both existing residential receptors and future residential receptors within Nelson Dock (included within the consented Liverpool Waters scheme) have been assessed.

Proposed Development versus Baseline Scenario

The assessment considers the potential daylight and sunlight effects of the proposed development at Bramley-Moore Dock on the existing residential receptors assessed against the Baseline Scenario.

Proposed Development versus Future Baseline Scenario A

This assessment considers the potential daylight and sunlight effects of the proposed development at the application site on surrounding receptors assessed against existing conditions at the application site but assuming development of the Liverpool Waters scheme on Nelson Dock has been built out. This assessment considers the potential daylight and sunlight effects on

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both existing sensitive receptors and future sensitive receptors within Nelson Dock (included within the consented Liverpool Waters scheme).

Operational Phase Effects

The effects of the proposed scheme on the daylight and sunlight to the existing neighbouring receptors have been considered and overall will be of negligible adverse significance, which will be permanent (long term) and at a local scale. A high level of daylight and sunlight is retained in the proposed condition, in excess of the BRE guidelines. When comparing the effects of the proposed development and the effects of the approved Liverpool Waters development at Bramley-Moore Dock Site, the Liverpool Waters development was found to have a greater impact on daylight. Therefore, the proposed development represents an improvement in light levels to the existing neighbouring receptors in comparison to the approved Liverpool Waters scheme.

The effects of the proposed scheme on the daylight and sunlight to the consented Liverpool Waters outline residential blocks to the south of the application site have been considered (primarily those to the west and east quaysides of Nelson Dock). The assessment establishes that the proposed scheme still maintains a high level of daylight and sunlight to the facades of the buildings, such that any detailed design of residential accommodation, to be formalised through subsequent reserved matters submissions against the overarching Liverpool Waters outline permission (LPA ref. 20NM/1801 – variation of 10O/2424) will enable adherence to the BRE guideline tests. When comparing the effects of the proposed development and the effects of the approved Liverpool Waters development at Bramley-Moore Dock Site, the Liverpool Waters development was found to have a greater impact than the proposed development.

Overall no significant effects are anticipated in relation to Daylight, Sunlight and Overshadowing.

LIGHTING (CHAPTER 16, VOL II)

WYG have undertaken a lighting assessment for the proposed development at Bramley-Moore Dock. This ES chapter discusses the potential impacts resulting from lighting during the construction and operational phases of the development. The lighting assessment report considers the scheme against policies in the statutory development plan (Liverpool UDP) and other relevant material considerations including the National Planning Policy Framework (NPPF) and the emerging Liverpool Local Plan.

Baseline Conditions

The assessment included baseline monitoring to establish existing lux levels around the application site and to determine the appropriate Environmental Zone criteria.

The proposed development lighting was then modelled to allow for prediction of light spill with the proposed development in place.

Construction Phase Effects

During the construction phase, the construction lighting will be managed through site-specific mitigation measures such as specified working hours, specific locations of floodlights and visual barriers. With these mitigation measures in place, the effects of the construction phase are not predicted to be significant.

Operational Phase Effects

During the operational phase, the potential impacts from event and non-event lighting on existing and committed residential receptors as well as surrounding ecological receptors has been assessed.

Ecological habitats along the northern and western boundaries of the site are not predicted to experience light trespass that significantly exceeds 2 lux. Committed and existing residential receptors are not predicted to receive lighting levels above the pre-curfew or post-curfew criteria respectively.

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Therefore, the effects from the operational phase are not predicted to be significant.

TOWNSCAPE & VISUAL IMPACT ASSESSMENT (TVIA) (CHAPTER 17, VOL II)

The TVIA has considered the potential townscape and visual effects of the proposed 52,888 seated capacity football stadium, related ancillary development, external landscape works including a public plaza, upon the site (including infill of the existing dock waterbody by marine won aggregate and demolition of all structures with the exception of the Grade II listed Hydraulic Tower) and surrounding study area. The assessment considers all mitigation to be embedded within the scheme design.

Baseline conditions

The desk-based study and site-based studies have identified a number of local townscape character areas to be assessed. The site is also located within the Stanley Dock Conservation Area and the Liverpool Maritime Mercantile World Heritage Site.

The scope of the TVIA has been agreed following pre-application consultation with Liverpool City Council and its independent heritage advisor (Graeme Ives Heritage Planning). The TVIA has considered the relevant requirements of the adopted WHS SPD (2009), including key views/vistas within and towards the WHS.

Construction Phase Effects

The assessment of townscape effects concludes that there would be major adverse and significant effects upon the townscape character of Character Area 3 – Stanley Dock Conservation Area during the construction phase. However, such effects would improve to major beneficial and significant post construction. There would also be a moderate adverse and significant effect upon The Waterfront and Its Fringes character area during the construction phase which would improve to moderate beneficial and significant effects post

construction. The Hydraulic Engine House would also experience moderate adverse effects as the works are being undertaken to the structure, however these would be short term in nature.

The assessment of visual effects concludes that there would be moderate adverse and significant effects experienced during the construction phase by pedestrian and cyclist receptors at Viewpoint 3 Regent Road and Viewpoint 8 Bascule Bridge. There would also be moderate adverse and significant effects experienced at Viewpoints 26 and 27 within Trafalgar Dock for all receptors.

Operational Phase Effects

Such adverse and significant effects would improve to moderate beneficial and significant effects from the first day of opening of the stadium at all of the above viewpoint locations, during all scenarios with the exception of match day scenarios in relation to Viewpoints 3 and 8. The day time non matchday, along with day time and night time match day scenarios would remain moderate adverse and significant. Viewpoint 26 and 27 around Trafalgar Dock would however experience a moderate beneficial and significant effect for all scenarios.

The assessment of cumulative townscape and visual effects concludes that the addition of the proposed development to a baseline that includes the Liverpool Waters mixed-use scheme (original outline permission 10O/2424 – latest non-material amendment is 20NM/1801) will not give rise to any significant effects. Similarly, when the proposed development is considered in the context of the approved Liverpool Waters parameter plans and all other relevant and agreed cumulative schemes, there are also no significant effects arising.

Overall, the TVIA concludes that significant townscape and visual effects are likely to occur within the local environs of the site only.

BUILT HERITAGE (CHAPTER 18, VOL II)

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This chapter of the ES assesses the likely significant effects of the proposed development on the environment in terms of Built Heritage. It should be read in conjunction with the Archaeology Chapter (19, Volume II).

Baseline Conditions

The historic core of Liverpool and its docks became a World Heritage Site in 2004. The inscription states that it is 'the supreme example of a commercial port at the time of Britain's greatest global influence'. Within it are six areas of distinct character, each reflecting different patterns of historic growth and aspects of mercantile culture. Bramley-Moore Dock lies within the Stanley Dock Character Area 3 which also forms the Stanley Dock Conservation Area. This area contains nine 'named' docks that contain a waterbody. Bramley-Moore Dock Retaining Walls, Nelson Dock Retaining Walls, the Dock Wall from opposite Sandhills Lane to Collingwood Dock, with entrances, and the Hydraulic Engine House at Bramley-Moore Dock are all listed Grade II. There are a number of listed buildings and structures nearby that have been assessed as relevant to this application.

The Liverpool World Heritage Site, Bramley-Moore Dock, Nelson Dock, the Hydraulic Engine House, the Regent Road Dock Wall, the Stanley Dock Conservation Area and nearby listed buildings are 'designated heritage assets', as defined by the National Planning Policy Framework (NPPF). Other buildings and structures that make a positive contribution to the conservation area can be considered as 'non-designated heritage assets', for example the Bascule Bridge on Regent Road.

The effect of the proposed scheme on these assets will be on the Outstanding Universal Value ('OUV') of the World Heritage Site ('WHS'), the special architectural and historical importance of the listed Dock and Walls, the character and appearance of the Conservation Area and the setting of other listed buildings.

An assessment has been made of the likely connection between the proposed development and heritage receptors in the surroundings of the application

site. This identification of the baseline historic environment has been undertaken using a variety of methods outlined below:

- Desk-based assessment of published sources of information on the historic built environment in the area, in the form of statutory information and studies, histories and research including the Merseyside Historic Environment Record;
- Physical inspection and fieldwork at the application site and the surrounding area, including a systematic data search undertaken for heritage assets in the vicinity of the application site that may be affected by the proposed development;
- Preparation of a Heritage Asset Schedule to identify all artefacts across the site; and
- Consultation with the local planning authority and Historic England.

The assessment was undertaken based on the description of development and construction methodology contained in Chapters 3 and 4 of Volume II of the ES. The scale of impact magnitude used in undertaking the assessment is based on that found in the 'Guidance on Heritage Impact Assessments for Cultural World Heritage Sites prepared by ICOMOS but directly modified from 'Major', 'Moderate', 'Minor', 'Negligible' & 'No Change' to the common Magnitudes used for the purposes of this Environmental Statement. To ensure a correlation of approach between the two methodologies the Medium and Small scales of magnitude have been combined in terms of their description allowing a professional judgment to be made with regard to the significance matrix.

In general, the Significance is recognised as being either 'Beneficial' or 'Adverse'. In the case of the *setting* of some key receptors, the additional criteria of 'Neutral' has been introduced for occasions when the proposal will appear within the visual setting of a receptor but this presence does not affect the ability to appreciate the special interest of the receptor or its contribution to the OUV of the WHS and thus the proposals have a neutral effect.

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Construction Phase Effects

The potential significant impacts that the proposed development may have on the key heritage receptors relate primarily to the construction phase and relate to the physical impact of the works on the heritage receptors on the site. There have been a number of design interventions incorporated into the proposals to mitigate the impact of the proposals on the receptors. These include: Dock Infill Methodology; protection of the historic dock retaining walls; incorporation of the water channel; making safe and securing viable use of the Hydraulic Engine House; a comprehensive and sensitive public realm strategy; careful design of the proposed new openings in the Regent Road Dock Wall; thorough design studies to ensure a contextual architectural approach to the stadium and other new structures.

In terms of the assessment pre-mitigation, the greatest effects are on the Bramley-Moore Dock Retaining Walls (Major Adverse) and Stanley Dock Conservation Area (Major Adverse) and the WHS (Major Adverse). This is having regard for OUV of the whole WHS and the impact that this will have on that totality. The direct impact on the Hydraulic Engine House is Major Beneficial (the impact on its setting is Moderate Adverse). The proposals will also have a moderate adverse impact on Regent Road Dock Wall and its setting as the proposals will require the loss of some historic fabric through the openings of three new entrances. For a number of receptors, the impact would be moderate due to the presence of the proposal in their setting, however it is not regarded that the presence of the proposal will impact the ability to appreciate the special interest of the receptor or its contribution to OUV. These receptors include the Nelson Dock Wall; Hydraulic Engine House; Tobacco Warehouse; and the Victoria Clock Tower. The effect of the proposals on all other receptors is regarded as being either Minor or Negligible.

The proposals have also been considered, pre-mitigation, against a scenario that presumes the Liverpool Waters Masterplan has been built. Whilst this will have a large impact on the wider area, in most cases the effect of the proposals on the receptors does not change except for those receptors where

the impact was just on its setting. For example, the effect on Tobacco Warehouse reduced from Moderate Neutral to Minor Neutral.

A number of mitigation measures are proposed which are primarily aimed at ensuring the receptors which will be physically impacted by the proposals are subject to full methodologies and protection. Whilst these measures will ensure best practice and protection during the construction phase, they do not change the magnitude of effect on the receptors. As a consequence, the Residual Effect post-mitigation on the key receptors remains the same for both the baseline and Liverpool Waters scenario.

Operational Phase Effects

It is not likely that the operation of the proposed development will have any impacts on any of the key receptors other than Lighting (which is considered in another of the technical chapters) and improved Public Access so it is therefore largely scoped out of this chapter.

The Future Baseline is based upon the presumption of the completion of the Liverpool Waters Masterplan as approved (LPA ref. 10O/2424 – latest non-material amendment being ref. 20NM/1801). The conclusions of the Heritage Impact Assessment that formed part of the Liverpool Waters ES Heritage Chapter (Nov 2011) with regard to the impact on the setting of the Stanley Dock Character Area (which also forms the Stanley Dock Conservation Area) is, in summary, that the impact of the proposed development (Liverpool Waters Masterplan) on urban grain will be moderate beneficial; on the physical fabric it will be large beneficial; the impact on setting will be moderate adverse; the impact on views will be slight adverse; the impact on access and permeability will be large beneficial; and that the cumulative impact on the Character Area will be moderate beneficial. With regard to compliance with the World Heritage Site SPD, the Heritage Impact Assessment concludes that the proposals are in 'full compliance' with the Council's vision for the Stanley Dock Conservation Area. The Assessment concludes 'whilst some limited harmful impacts...remain...these are greatly outweighed by the benefits

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offered, and that overall there is no risk to the inscription of the Liverpool World Heritage property.'

With regard to a consideration of the identified inter-development cumulative schemes effect, the majority are either at too great a distance to have an impact on heritage receptors in the context of this application or have been considered through the townscape views in the Townscape Chapter. The scheme at plot CO2 (LPA ref. 18F/3247) which includes partial infill of West Waterloo Dock – (application is currently undetermined) has been considered, but on the basis that it is outside the WHS (but within the buffer zone) and the principle of development (including the partial infill of the Dock) has already been agreed via the Liverpool Waters Masterplan this will not alter the cumulative effect on any receptors.

Since the application was submitted, two further applications have been submitted that are likely to have an impact on a number of heritage assets identified above. Land bounded by Blackstone Street, Fulton Street and Regent Rd, L5 (Application 20F/0217) is within the WHS Buffer Zone and will directly affect 15-17 Fulton Street and 66&68 Regent Road and the immediate setting of 9 Blackstone Street, to the north of the site. 2-6 Lightbody Street (Application 20F/1947) is also in the Buffer Zone and is likely to appear particularly in the backdrop of Stanley Dock and those buildings and structures surrounding it. However, it is not regarded that these applications would alter the effects of the proposals on the surrounding built heritage receptors.

In summary, the assessment concludes that the greatest Residual Effect is on the Bramley-Moore Dock retaining walls and the Stanley Dock Conservation Area which would be Major Adverse and also a Major Adverse effect on the OUV of the WHS. The direct impact on the Hydraulic Engine House would be Major Beneficial. The proposals will also have a moderate adverse impact on Regent Road Dock Wall as the proposals will require the loss of some historic fabric through the creation of three new entrances. For a number of receptors the impact would be moderate due to the presence of the proposal in their setting, however it is not regarded that the presence of the proposal will impact the ability to appreciate the special interest of the receptor or its contribution

to OUV. These receptors include the Nelson Dock Walls; Hydraulic Engine House; Tobacco Warehouse; Victoria Clock Tower; and the Sea Wall. The effect of the proposals on all other receptors is regarded as being either Minor or Negligible.

ARCHAEOLOGY (CHAPTER 19, VOL II)

Bramley Moore Dock is constructed on land reclaimed from the River Mersey, to the north of the Stanley Dock system. The site is within the core of the Liverpool Maritime Mercantile City World Heritage Site and within the Stanley Dock Conservation Area. Bramley Moore Dock forms the northern extent of Jesse Hartley's central dock system of 1848; the dock retaining walls, the dock wall and gated entrances off Regent Road are constructed of Hartley's characteristic 'Cyclopean granite' stonework and represent the height of his dock-building career in Liverpool.

The Site Area contains four heritage assets that are Grade II listed and afforded statutory protection; these are Bramley Moore Dock walls, a hydraulic accumulator tower/engine house, the Regent Road wall and two sets of gated entrances. The southern boundary of the application site lies directly on Nelson Dock northern wall face which is also listed. In addition to the listed structures, 17 areas of potential archaeological interest within the Site Area have been identified. This chapter focuses only on undesignated archaeological heritage assets; designated structures are discussed in the cultural heritage chapter.

Bramley Moore Dock provided bunker coal for steamships transported from the Lancashire coalfields. In the 1850s, the High Level Coal Railway was constructed by the Lancashire and Yorkshire Railway Company, which allowed coal wagons to access the eastern quaysides of Bramley Moore and Wellington Docks and dump coal directly into the holds of waiting ships. It was extended to include the north quay in 1883/4. Whilst this elevated structure was largely demolished in the 1970's, elements of it survive, connected to the listed accumulator tower/engine house at the north-eastern

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corner of the dock, which were built to power cranes and capstons associated with the railway.

In 1893, The Liverpool Overhead Railway was constructed; this was an electric railway which ran along the whole length of the Liverpool docks. The electricity generating station for the railway was at Bramley Moore Dock and comprised engines powered by coal, which was dropped into them from the High Level Coal Railway which passed directly above. The structure may well also survive within the accumulator tower/engine house complex.

The development of the application site can be traced with reference to historic maps. In addition to the main dock structures, built 1848, these illustrate the presence of the accumulator tower/engine house on the north quay, a chimney and pumphouse on the east quay, warehouses/transit sheds, ground-level dock railways, the High Level Coal Railway and the Liverpool Overhead Railway. Ancillary structures, such as cranes and mooring posts/bollards, are also marked.

The significance of the heritage assets identified rests largely on the period and group value of Jesse Hartley's 1848 central docks development, and the important part played by the subsequent development of railway infrastructure in the later nineteenth century. The remains of the High Level Coal Railway and its connections to the Liverpool Overhead Railway are significant in terms of their rarity, survival, vulnerability and potential to provide significant archaeological evidence pertaining to the importance of Bramley Moore Dock to the railway infrastructure of the Liverpool Docks (Appendix 13.1).

Whilst most of the High Level Coal Railway- and Overhead Railway-related infrastructure has been demolished, the remains of one brick-built structure remains, abutting the Regent Road wall, and it was anticipated that the footings of these elevated structures may survive below the present surface, as would other ancillary features. These include a pumphouse on the east quay of Bramley Moore Dock, and crane bases on the northern and eastern quays. Several ground-level dockside railways and areas of granite setts also remain extant.

It was recommended, in 2019, that archaeological survey and excavation be undertaken prior to the onset of construction works on the site. Survey should include photogrammetric survey of the site, to record and accurately locate visible/extant remains. Two extant buildings, one of which is the warehouse/transit shed on Bramley Moore Dock's south quay, were also to be surveyed prior to their demolition. Sub-surface archaeological evaluations were to be undertaken in advance of the development, to assess the survival and condition of former transit sheds/warehouses, and on the north and east quays, the structure of the High Level Coal Railway and associated stores beneath the railway arches. Several former buildings, including a pumphouse on Bramley Moore Dock's eastern quay, a building possibly associated with the Overhead Railway and Nelson Dock Customs depot were to be subject to archaeological evaluation. Following the submission of a Written Scheme of Investigation (WSI) which would fulfil the recommendations made to Merseyside Environmental Advisory Service (MEAS), OA North undertook a programme of evaluation trenching, building survey and photogrammetric survey in May/June 2020 (Appendix 19.2). Although it was not possible to fulfil all the recommended mitigation measures due to the proposed location of trenches close to listed structures and open water, and other site conditions at the time, the evaluation trenches ascertained that the footings of warehouses and railway infrastructure remained beneath historic and modern surfaces on the northern, western and eastern quays of BMD.

In addition to completion of the agreed mitigation partially fulfilled by the programme of works undertaken in May/June 2020, it is recommended that any sub-surface interventions which take place during the pre-construction phase of the development, such as geotechnical trenching, drainage runs and site stripping (particularly of historic surfaces), should be carried out under archaeological supervision. Any further mitigation measures will be decided upon by MEAS in their capacity as advisors to Liverpool City Council.

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SOCIO-ECONOMICS (CHAPTER 20, VOL II)

Chapter 20: Socio-Economics, supported by Appendices 20.1, 20.2 and 20.3, Volume III, considers the baseline data for the Local area (Kirkdale Ward); Regional area (Liverpool City Region); Sub-Regional area (North West Region) and National area (UK) as appropriate.

The assessment has considered the impacts of the proposed development on a number of socio-economic indicators, including:

- Generation of employment;
- Generation of training and apprenticeship opportunities;
- Generation of GVA;
- Generation of additional wage income;
- Generation of additional expenditure;
- Increase in marketing and sponsorship revenue;
- Generation of societal value associated with the Goodison Park Legacy Project (GPLP) and Everton in the Community (EitC); and
- Social and heritage value associated with the new stadium development.

During the construction phase, the following benefits are anticipated:

- From the £505m of total expenditure creation of over 8,100 jobs for the sub-region;
- Generation of 505 new trainees or apprentices' places; and
- From the £505m of total expenditure, generation of £420m GVA.

During the operational phase, the following benefits are anticipated:

- Taking account of additionality factors, creation of 93 net additional jobs at the sub-regional level and around 196 net additional jobs at the regional level. In regards to supplier jobs, creation of 15 net additional jobs at the sub-regional level and 69 jobs supported at the regional level.

With the attraction of approximately 1.15m football fans to the city each season, this should support 20 additional jobs at the sub-regional level. From five non-footballing events during the year, this would support 184 jobs locally at the sub-regional level;

- Taking account of additionality factors, generation of an estimated net additional almost £4.5m GVA the sub-regional level and more than £9m GVA at the regional level. In regards to suppliers, generation of almost £19m GVA of which around 50% are with regional based companies. The enhanced stadium will therefore increase the scale of net additional GVA by £0.72m at the sub-regional level and approximately £3m at the regional level. The enhanced stadium will generate additional supporters which would yield £0.96m of GVA at the sub-regional level. From five non-footballing events during the year, this would yield approximately £4.9m of GVA at the sub-regional level;
- Taking account of additionality factors, estimated net additional wage income at the sub-regional level is therefore estimated at £14.5m annually; rising to over £58m at the regional level;
- In regards to suppliers, generation of almost £19m expenditure of which around 50% are with regional based companies. The enhanced stadium will therefore increase the scale of net additional expenditure by £1.8m at the sub-regional level and £4.6m at the regional level. With the attraction of approximately 1.15m football fans to the city each season, this should yield net additional local expenditure of £2.38m at the sub-regional level. From five non-footballing events during the year, this would yield approximately £11m of additional direct spending at the sub-regional level. Assuming that the displacement effects of the new stadium is very low then the net expenditure by additional tourists/visitors would amount to approximately £9.3m at the sub-regional level;
- Marketing value of £40m in 2019 based on current sponsorship. A conservative estimate of the marketing and sponsorship revenue for the

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Applicant at 2024 is estimated to be £55m – a net additional increase of £15m as a result of the new stadium development;

- Maintaining the linkages between the old and new stadium and supporting the growth of EitC, generating additional societal value over a 10-year period of £102.9m, or £10.3m annually accordingly to Real Worth; and generating additional societal value over a 25-year period of £148m, split between BMD (£47.5m), GPLP (£58.2m) and EitC (£42.3m) according to Simertrica-Jacobs; and
- The net present value of the stadium development at BMD to the Merseyside population is positive at £205m over 30 years in the 2019 pre-Covid survey, which has increased by £14m to £219m over 30 years in the 2020 post-Covid survey, demonstrating that the people of Liverpool attach a significant positive social and heritage value to delivering a new stadium at BMD. The increase has been in part driven by the Covid-19 pandemic and the uncertainty it provides to the economy, which makes a major investment in a sport stadium and ancillary uses on a currently inaccessible part of the Liverpool waterfront more attractive to local residents. This figure captures the wider social and heritage benefits and impacts of the new stadium and does not duplicate the above economic benefits, which are additional to this figure.

As only positive socio-economic impacts have been identified as a result of the proposed development, there is no requirement for mitigation measures. For both the construction and operational phases, it is recommended that a working group, or Local Employment Group (LEG), is established involving key local stakeholders in order to maximise job and training opportunities for local people. The LEG could be secured via a planning condition with suitable triggers.

Due to the Applicant's fundamental commitment to ensuring local benefits and the generation of training and apprenticeships, including employers' requirements for such measures within early contractor tender exercises, the consideration of these has been combined with the design interventions and

undertaken as one comprehensive assessment rather than the individual interventions being broken down. In relation to this the Construction Management Plan (CMP) includes the following commitments:

- Creating a pipeline of future talent (apprentices) where requirements will be reviewed for on-site, off-site and heritage;
- Supporting economic growth (employment and supply chain);
- Running programmes in partnership with EitC mirroring their programmes using construction as a 'pull', as they do with sport;
- Being innovative by moving away from traditional commitment to just numbers, i.e. work experience, school visits, combining these into meaningful and structured programmes where benefits can be seen; and
- Supporting adults on EitC programmes to the jobs market.

There would be no significant changes to the effects between the proposed development and the Liverpool Waters permission, with the exception of a moderate improvement in generation of construction employment due to the complexities of construction associated with the stadium which will require a significant number of highly-skilled construction workers.

In terms of cumulative impacts, based on consideration of Goodison Park and Ten Streets, it is anticipated that alongside the proposed development these schemes will have additional beneficial effects. In terms of construction employment, construction GVA, operational employment, operational GVA, operational additional expenditure and societal value, the cumulative effects are assessed as being of major beneficial significance. The effects on training and apprenticeship opportunities, household income, marketing and sponsorship revenue and social and heritage value of the new stadium, the cumulative effects are assessed as being of moderate beneficial significance.

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MITIGATION MEASURES

The following mitigation measures are proposed to reduce any potential adverse impacts associated with construction and operation of the proposed scheme.

Table 2

Proposed Mitigation Measures

PHASE	POSSIBLE EFFECT BEING MITIGATED	MITIGATION MEASURE	HOW SECURED / TRIGGER
Transport			
Construction	Severance, pedestrian delay, pedestrian amenity, driver delay, road safety	<p>Construction Management Plan (CMP)</p> <p>Prior to construction taking place a construction management plan will be agreed with LCC. This will contain a range of measures to reduce the traffic impact of the construction of the development.</p> <p>A draft version of the document to inform the planning application is provided at Appendix 4.1. The draft plan sets out a range of measures that would be employed at the site to reduce transport impact. This includes:</p> <ul style="list-style-type: none"> Workers to be encouraged to use public transport, walking and cycling wherever possible, staff private vehicles not to be permitted to park on the site and discouraged from parking in nearby streets. Remote car parks to be used by workers who choose to drive. Potential for a shuttle service to these. Designated HGV access routes so that HGVs do not adversely impact on residential areas. The site normal working hours will generally be 7.00am to 7.00pm Monday to Friday and 7.00am to 1.00pm on Saturdays. No works are planned for Sundays or Bank Holidays. Some work outside of normal working hours will be required at times; this will be agreed with LCC in advance in writing. <p>Where appropriate CMPs typically identify temporary traffic management measures which can be deployed on the local road network to mitigate impact this can include temporary signalised pedestrian crossing points. It is also possible in construction management plans to identify specific construction traffic routes. In this way HGV traffic can be limited to use the most appropriate routes to site.</p>	Planning Condition
Operation	Severance, pedestrian delay, pedestrian amenity, driver delay, road safety	<p>Travel Plan</p> <p>Within a defined period following occupation a staff travel plan will be agreed with LCC which contains a series of measures to encourage the sustainable travel of staff working at the proposed development. The measures will seek to reduce travel by single occupancy vehicles and encourage sustainable travel where practical.</p>	Planning Condition

NON-TECHNICAL SUMMARY

PHASE	POSSIBLE EFFECT BEING MITIGATED	MITIGATION MEASURE	HOW SECURED / TRIGGER
Operation	Operation of the Transport Network	<p>Match Day Transport Strategy and Event Day Transport Strategy</p> <p>On match days and event days, a series of transport measures will be in place in the interest of safety, encouraging sustainable travel and maintaining the operation of the transport system. As part of this a series of permanent and temporary match / event day measures will be in place. This includes the following:</p> <p>Match Day & Event Day Only Measures:</p> <ul style="list-style-type: none"> ■ Hard road closures enforced by Hostile Vehicle Mitigation HVM barrier to both protect and provide road space to pedestrians in streets in the immediate vicinity of the application site; ■ Soft Road closures to prevent match day traffic from entering the streets in the wider vicinity of the application site to provide more road space to pedestrians and protect the amenity of residents and businesses; ■ Traffic Restrictions to slow traffic speeds on key routes and provide more pedestrian space to pedestrians in the post — match period; ■ A pass system will be implemented so that residents and businesses will still have access to their properties and car parking through the closure period. This will be managed by marshals on street; ■ Match day shuttle buses to the city centre and north to Bootle; ■ Match day taxi ranks; ■ Rail staff to manage and marshal the operation of Sandhills station; ■ Coach parking areas created on closed roads; and ■ Disabled shuttle services from Sandhills station and Stanley Park car park (latter being a pre-booked 'park & ride' service). <p>Permanent Match Measures:</p> <ul style="list-style-type: none"> ■ The creation of a waiting area outside Sandhills station for supporters to wait in the post-match period in a safe environment prior to boarding trains. <p>Parking restrictions within a wide area to prevent match day parking- creation of residents and business only parking zones like those already in existence at Goodison Park. This will prevent supporters from parking within residential, business and other unsuitable areas.</p>	Planning Condition / Section 278 & Section 106
Operation	Crowd Disaster & violence	<p>Crowd Safety Policies and Measures</p> <p>As part of the development, on match days and event days an 'Event Safety Policy', 'Event Day Contingency Plan' and 'Event Transport Strategy' will be in place. These plans will set in place crowd safety and transport measures to be employed at every match and event day.</p>	Planning Condition and Licencing Requirements

NON-TECHNICAL SUMMARY

PHASE	POSSIBLE EFFECT BEING MITIGATED	MITIGATION MEASURE	HOW SECURED / TRIGGER
		<p>The Clubs existing Safety Policy sets out responsibilities, and actions to ensure a reasonable level of spectator safety on event days. These would be applied at the new development. Lines of communication with police, internal communications, CCTV monitoring are all described in detail to ensure that each event is as safe as possible. In summary, it sets out the approach to monitoring and preventing crowd disasters and crowd violence including:</p> <ul style="list-style-type: none"> ■ Stewarding; ■ Crowd management; ■ Inspection & safety reviews; ■ Communications; ■ Fire Precautions; ■ Medical & First Aid requirements ■ Counter — terrorism arrangements ■ Crowd Disorder & Anti-Social Behaviour ■ Contingency Plans. <p>In addition to the Safety Policy, the Working Contingency Plan sets out the plans in place for dealing with emergencies including:</p> <ul style="list-style-type: none"> ■ Fire; ■ Bomb threat / suspect packages / hazardous substances; ■ Damage to structures / gas leaks, electricity supplies; ■ Safety systems; ■ Crowd problems (including disorder); ■ Evacuation procedures; ■ Control of major incidents; ■ Adverse weather conditions. <p>As can be seen, a comprehensive package of policies and measures will be in place to ensure the risk of crowd disaster and crowd violence is kept to a minimum and that should such an incident occur its impact is minimised as much as practically possible.</p>	

Air Quality

NON-TECHNICAL SUMMARY

PHASE	POSSIBLE EFFECT BEING MITIGATED	MITIGATION MEASURE	HOW SECURED / TRIGGER
Construction	Dust associated with demolition, construction, earthworks and trackout	Mitigation within Section 7.1 of Appendix 8.1, ES Volume III, to be incorporated into Construction Environmental Management Plan (CEMP)	Planning condition
Construction	Exceedance of Long-Term NO2 Pollutant AQO due to construction traffic	Mitigation in the form of a revised routing plan (such as with more vehicles using Bankhall Street) will need to be undertaken to ensure construction vehicles avoid, where possible the Sefton AQMA.	CEMP via a Planning Condition
Noise & Vibration			
Construction	Noise associated with dock infill, demolition and other construction works on sensitive receptors surrounding the proposed development site during the construction phase.	<p>Best practice noise mitigation, set out in full in Appendix C of Appendix 9.1, to be incorporated into the CEMP.</p> <p>Construction phase vibration monitoring of Grade II listed Bramley Moore Dock walls will be undertaken; baseline monitoring will be undertaken by the contractor immediately prior to the commencement of works on site to identify appropriate thresholds for vibration monitoring to be adopted during construction works.</p> <p>Where practicable, phasing of any percussive piling activities will be scheduled to avoid migration/mating periods of sensitive ecological species as advised by the project ecologist.</p> <p>2.4m solid hoarding to be erected around the site boundary.</p>	CEMP, secured by planning condition
Operation — Stadium	Potential noise breakout from Building Services Plant and internally-generated noise sources associated with conference/exhibition spaces.	Noise emission limits in relation to breakout from building services plant, conference and exhibition spaces have been specified at 63.6 dB(A) at 1m or 59.3 dB(A) at 3m during the daytime, and 57.4 dB(A) at 1m or 53.8 dB(A) at 3m during the night-time, to achieve levels at least 10 dB below background noise levels.	Secured by planning condition, built into the scheme upon construction
Ground Conditions			

NON-TECHNICAL SUMMARY

PHASE	POSSIBLE EFFECT BEING MITIGATED	MITIGATION MEASURE	HOW SECURED / TRIGGER
Construction	Construction workers and site neighbours coming into contact with soil or contaminated materials (e.g. during earthworks, raking of BMD) with potential for human uptake.	Implementation of appropriate health, safety and hygiene regime (to include PPE and welfare provisions) and good construction practice.	Remediation Strategy and Construction Environmental Management Plan (CEMP) secured by planning condition, implemented by contractor, recorded in Verification Report.
Construction	Construction workers and site neighbours coming into contact with soil or contaminated materials with potential for human uptake.	Implementation of good construction practice and dust suppression measures (e.g. dampening, wheel washing, site vehicle speed and route control, control of drop height spoil loading etc.)	Remediation Strategy and CEMP secured by planning condition, implemented by contractor, recorded in Verification Report.
Construction	Infiltration and promotion of leaching of contamination to groundwater (Principal Aquifer)	Carry out a Foundation Works Risk Assessment (FWRA). Remove any gross contamination. Implement measures to minimise infiltration. Avoid stockpiling contaminated soil. Any stockpiled material will be covered/ placed on an impermeable surface. Control of shallow groundwater during excavation.	Remediation Strategy and CEMP to accord with FWRA, secured through planning condition implemented by contractor, recorded in Verification Report.

NON-TECHNICAL SUMMARY

PHASE	POSSIBLE EFFECT BEING MITIGATED	MITIGATION MEASURE	HOW SECURED / TRIGGER
Construction	Infiltration and promotion of leaching of contamination to surface water (River Mersey, Port of Liverpool Dock System)	Remove gross contamination. Implement measures to minimise infiltration. Avoid stockpiling contaminated soil. Any stockpiled material will be covered/ placed on an impermeable surface. Control of shallow groundwater during excavation.	Remediation Strategy and CEMP secured by planning condition, implemented by contractor, recorded in Verification Report.
Construction	Disturbance of Dock Deposits during raking with potential impact to water quality (Port of Liverpool Dock System) and marine flora and fauna.	Methodology for identification of obstructions / artefacts in Dock Deposits (i.e. raking) will be agreed with the MMO. A separate assessment of risk to water quality or marine flora and fauna will be undertaken as necessary.	Methodology agreed with relevant parties (Natural England, MMO, MEAS)
Operation	Vapour / gas migration to enclosed spaces with potential to affect future site users.	Undertake ground gas monitoring of Dock Deposits to define the nature of the ground gas regime, design for any protection measures and inform health and safety for works in confined spaces. Control of entry into any enclosed below ground spaces. Removal of areas of contamination with potential to generate vapours.	Remediation Strategy secured by planning condition, implemented by contractor, recorded in Verification Report.
Operation	Future site users coming into contact with soil or contamination materials with potential for human uptake.	All soft landscaping to be isolated from underlying Made Ground using marker layer, with any planting in suitable imported soils.	Remediation Strategy secured by planning condition, implemented by contractor, recorded in Verification Report.

NON-TECHNICAL SUMMARY

PHASE	POSSIBLE EFFECT BEING MITIGATED	MITIGATION MEASURE	HOW SECURED / TRIGGER
Operation	Infiltration and promotion of leaching of contamination to groundwater (Principal Aquifer)	Carry out a Foundation Works Risk Assessment. Remove any gross contamination. Implement measures to minimise infiltration (including raising of site levels).	Remediation Strategy and CEMP secured by planning condition, implemented by contractor, recorded in Verification Report
Operation	Infiltration and promotion of leaching of contamination to surface waters (River Mersey, Port of Liverpool Dock System)	Remove gross contamination (the likely source of any leachate). Implement measures to minimise infiltration (including raising of site levels).	Remediation Strategy and CEMP secured by planning condition, implemented by contractor, recorded in Verification Report
Operation	Loss of flora and fauna due to root uptake of phytotoxic metals in Made Ground.	All soft landscaping to be isolated from underlying Made Ground using marker layer, with any planting in suitable imported soils.	Remediation Strategy and CEMP secured by planning condition, implemented by contractor, recorded in Verification Report
Operation	Direct contact (below ground concrete and water supply pipework)	Appropriate selection of concrete class and materials for water supply pipework (with agreement from water supply company).	Remediation Strategy secured by planning condition, implemented by contractor, recorded in Verification Report.

NON-TECHNICAL SUMMARY

PHASE	POSSIBLE EFFECT BEING MITIGATED	MITIGATION MEASURE	HOW SECURED / TRIGGER
Operation	Gas migration to enclosed spaces with potential to accumulate to explosive concentrations.	Undertake ground gas monitoring of Dock Deposits to define the nature of the ground gas regime and design for any protection measures. Control of entry into any enclosed below ground spaces.	Remediation Strategy secured by planning condition, implemented by contractor, recorded in Verification Report.

Water Resources & Flooding

Demolition / Construction - Dock Infill	Migration of sediments into adjacent water bodies	<p>Development and implementation of a Construction Environment Management Plan (CEMP) that considers the following measures:</p> <ul style="list-style-type: none"> Discharging water during the dock infilling from BMD to Sandon Half-Tide Dock (SHTD) has been agreed by Peel Ports. The dredged material/water mix will be pumped into BMD via a floating pipeline from a dredger moored in the Mersey. The spent water will be cleared of suspended material via stilling ponds within BMD, and finally through a temporary weir over which excess water will spill into SHTD. Whilst the vast majority of the suspended sediment will be captured in BMD to maximise the efficiency of the operation, some residual suspended material may be taken into SHTD. <p>The following considerations have been made to prevent pollution during the infilling works:</p> <ul style="list-style-type: none"> The vessels used will be sea certified; Method statements and plans will be in place by the appointed contractor to prevent a pollution incident from occurring. The method statement will need to contain full details of all pollution control measures and will be required in order to obtain the necessary consents and licences from the relevant stakeholders; and The pipeline will be secure to ensure there are no spillages during pumping. 	CEMP to be secured through planning condition and implemented by contractor.
Demolition / Construction - Stadium Construction	Elevated sediment loads in surface water and dewatering of excavations	<p>Development and implementation of a Construction Environment Management Plan (CEMP) that considers the following measures:</p> <ul style="list-style-type: none"> Soil gradients should be kept as shallow as possible to prevent large amounts of earth being washed away during periods of heavy rainfall. Areas which are exposed should be surfaced as soon as practicable. Enforce tight control of site boundaries including minimal land clearance and restrictions on the use of machinery adjacent to water bodies. Bunding of stockpiles within 10 m of water bodies or drainage lines. Wheel washing facilities should be provided at all entry and exits points. Water from wheel wash facilities must be contained and filtered in an appropriate manner to remove suspended solids before discharge into the on-site surface water sewerage network. 	CEMP to be secured through planning condition and implemented by contractor.

NON-TECHNICAL SUMMARY

PHASE	POSSIBLE EFFECT BEING MITIGATED	MITIGATION MEASURE	HOW SECURED / TRIGGER
		<ul style="list-style-type: none"> ■ Capture runoff from site in perimeter cut off ditches and/or settlement tanks where possible. Any dewatering required from site excavations should be pumped into a settlement tank or lagoon and not discharge direct to a water body or the on-site surface water sewerage network. ■ Sediment should be removed from water pumped during any extractions required. Sediment should be removed prior to discharges to the surface water network through the use of a baffle tank system or equivalent. ■ Sediment/soils encountered during construction activities such as earthworks could be contaminated. This has an associated risk of mobilising pollutants, which could be released to surface waterbodies. The working practices that should be put in place to prevent and manage this issue are described in Chapter 18 Ground Conditions. ■ CEMP to include dust suppression measures such as dampening and wheel washing. 	
Demolition /Construction	Accidental release of hydrocarbons and oils into the on-site drainage system or directly to the neighbouring Docks	<p>Development and implementation of a CEMP that considers the following measures:</p> <ul style="list-style-type: none"> ■ Incorporation of interceptors where appropriate into the site drainage system at high risk areas, such as parking, unloading and refuelling areas, to remove hydrocarbons and oils from surface water prior to discharge. ■ Other measures including drip trays under equipment such as generators, and wheel washing facilities should also be implemented to minimise the risk of pollutants infiltrating groundwater or the surface water drainage network. ■ Emergency Response Plan to be prepared and implemented in the event of a spill. Measures such as spill containment kit to be strategically located around site particularly at high risk locations such as fuelling points and car parks. 	CEMP to be secured through planning condition and implemented by contractor
Demolition/ Construction	Accidental leaks and spillages of significant amounts of hazardous materials migrating into the on-site drainage system or directly to the neighbouring Docks and Surface Water Features	<p>Development and implementation of a CEMP that considers the following measures:</p> <ul style="list-style-type: none"> ■ Provision of storage facilities and tanks; conduct refuelling of machinery within bunded areas, which should not be located within 10m of water bodies or drainage lines. ■ Storage and bunded areas to be constructed of impervious floors and walls with the capacity for the contents of the storage tank and an additional ten per cent safety margin. ■ As a remedial measure, spill containment equipment such as absorbent materials to be stored on site. ■ Mixing of construction materials, such as cement, will be conducted in designated areas located away from water bodies and drainage lines. 	CEMP to be secured through planning condition and implemented by contractor

NON-TECHNICAL SUMMARY

PHASE	POSSIBLE EFFECT BEING MITIGATED	MITIGATION MEASURE	HOW SECURED / TRIGGER
Demolition/ Construction	Dust and debris blowing into the Mersey Estuary, Docks and Surface Water Features	<p>Apply dust management procedures typically implemented for air quality management issues, such as:</p> <ul style="list-style-type: none"> ■ Damping down to suppress the creation of dust. Mitigation measures typically used for dust management are discussed in Chapter 8 Air Quality. ■ Implement good site practice, perimeter fences and tight control of materials and waste to minimise the risk of debris entering water bodies. 	CEMP to be secured through planning condition and implemented by contractor
Demolition/ Construction	Increased water demand during construction	<p>All relevant contractors should investigate opportunities to minimise and reduce the use of water, such as:</p> <ul style="list-style-type: none"> ■ Selection and specification of equipment; ■ Implementation of staff-based initiatives such as turning off taps, plant and equipment when not in use both onsite and within site offices; ■ Use of recycling water systems such as wheel washes, site toilets' handwash; and ■ Use of a rainwater harvesting system for use in equipment and vehicle washing. 	CEMP to be secured through planning condition and implemented by contractor
Demolition/ Construction	Flood risk to site workers during construction	<ul style="list-style-type: none"> ■ Contractor to prepare a flood emergency and contingency plan including arrangements to make safe any static plant, move any mobile plant, and to evacuate site operatives in a flood risk emergency. ■ Construction workers should be made aware of risks associated with excess surface water caused by overland flows and standing water. For example, risks to excavations and damage to plant. ■ To minimise any risk from groundwater flooding during excavation of the site, cut levels should be limited to at least 0.5m above the groundwater level. Where this is not possible, dewatering and other groundwater control measures should be employed. Any such groundwater control measures will also require pollution control measures in accordance with EA guidance. 	CEMP to be secured through planning condition and implemented by contractor
Operation	Increased pressure on water service infrastructure: Supply	<p>On -site potable water network will be provided for the site as part of the proposed development. This will be connected to the existing United Utilities network in Regents Road. Water efficiency measures that will reduce potable peak demand and subsequent foul flows including the following:</p> <ul style="list-style-type: none"> ■ Cold water storage tanks provided to smooth out peak flow rates from the public main Low flow fittings: low flush toilets, spray taps, low flow showers and waterless urinals; ■ Efficient water supply: Leak detection, smart meters and pressure reduction 	Through the development of potable water and foul water strategy between now and construction of the development

NON-TECHNICAL SUMMARY

PHASE	POSSIBLE EFFECT BEING MITIGATED	MITIGATION MEASURE	HOW SECURED / TRIGGER
		The advantage of demand management is not only for reducing supply but also for minimising the volume of the foul drainage element to the combined sewer.	
Operation	Flood risk to site users	<p>Flood warning: For areas of car parking and public realm below the Design Flood Level (DFL), due to heritage value of dock walls, and for a 15m wide strip of land adjacent to the River Mersey wall, there remains a residual risk of flooding despite the design interventions. Non-match day operations may continue within the Stadium which is protected from flooding, but events involving large number of visitors would be cancelled. A flood warning and emergency plan shall be prepared prior to occupation for the application site. The plan will include trigger points aligned with recorded live flood levels and/or rainfall predictions and the actions taken following the trigger points. The plan will include for the safe isolation of these specific areas.</p> <p>Flood resilient measures will be incorporated within the ground level of the stadium, east stairwells and lift lobbies, hydraulic tower, and at-grade car park and compounds located on the western quay, e.g. raising of sensitive equipment such as vehicle charging points.</p> <p>The DNO compound and OB kiosk are located outside the 15m wave risk zone and the transformers, switchroom, sensitive equipment of electric vehicle charging points, and the OB kiosk have been raised above 7.3m AOD to protect from water associated with wave overtopping that may penetrate the compound walls. Drainage is provided within the DNO compound to convey penetrated water volumes.</p>	Flood Risk Assessment and preparation and acceptance of flood warning management plan
Terrestrial Ecology			
Construction	Loss of habitat supporting qualifying/notifiable features of designated sites.	Provision of 2 floating pontoons in accordance with with Liverpool Waters SEMP (ARUP 2020) within Nelson Dock to the south of site. The specification of these is detailed in the Construction Management Plan (Appendix 4.1, ES Volume III).	Planning condition
Construction	Breeding birds	Removal of vegetation outside of bird breeding season. Provision of alternative nesting habitat such as 2 floating rafts in surrounding dock network	Planning condition
Construction	Wintering birds	Provision of 2 floating pontoons in Nelson Dock to the south of the application site	Planning condition
Construction	Passage birds	Provision of 2 floating pontoons in Nelson Dock to the south of the application site	Planning condition
Construction	Bats	Provision of alternative roost location subject to Bat Mitigation Class Licence. Supervision of works which affect roost space. Application for EPSL. Provision of additional roosts.	Planning condition

NON-TECHNICAL SUMMARY

PHASE	POSSIBLE EFFECT BEING MITIGATED	MITIGATION MEASURE	HOW SECURED / TRIGGER
Operation	Statutory Designated Sites (SPA/Ramsar and SSSI)	Use of non-reflective glass or installation of patterning, fritting, UV glass or netting on exterior façade on the southern, northern and western elevation of the stadium to reduce transparency and reflective value of high risk glazed areas.	Planning condition
Aquatic Ecology			
Construction	Risk of increased mortality to fish via habitat disturbance / increased suspended sediment concentration	Fish rescues and translocations will take place during construction to reduce fish mortality. The first will commence prior to raking to mitigate the associated risk from increased suspended sediment concentrations. A second will be undertaken following dock closure works. Methods will be agreed in advance with the relevant Statutory Nature Conservation Bodies (SNCBs) to target all known fish species including pouting, European eel and coal fish known to inhabit the dock. In addition, bubble curtains will be installed to deter fish away from the northern water channel adjacent to Sandon Half-Tide Dock. The bubble curtain and subsequent silt curtain will be in place until the permanent northern isolation structure is installed.	Planning condition
Construction	Risk from underwater noise and vibration to fish.	Selected construction approach such as all percussive piling activities taking place after the dock has been drained will mitigate the effects on fish from underwater noise and vibration.	Planning condition
Construction / Operation	Risk to fish and shellfish as well as marine mammals and benthic communities from environmentally harmful substances.	Selected construction approach such as adoption and implementation of a suitable Construction Environmental Management Plan (CEMP) and appropriate drainage systems to minimise risk of occurrence and to resolve any incidents quickly will mitigate risk.	Planning condition
Construction / Operation	Habitat Disturbance / Net Loss of Habitat for fish and benthic ecology	Biodiversity enhancements within newly created western channel to increase habitat complexity in the form of artificial cracks and crevices, achieved through the use of textured concrete cladding tiles fixed to the channel walls, increasing the substrate rugosity and providing enhanced surface textures and crevices for both mobile and sessile benthic fauna to establish. The bed of the channel may also be enhanced through the placement of rock substrate, although some soft substrate should also be retained to provide habitat for soft sediment infauna species. This will enhance overall food sources for a wide range of fish species that will remain within the Nelson Dock and Sandon Half-Tide Dock and within the new channel itself.	Planning condition

NON-TECHNICAL SUMMARY

PHASE	POSSIBLE EFFECT BEING MITIGATED	MITIGATION MEASURE	HOW SECURED / TRIGGER
Construction	Risk to fish inhabiting the lower Mersey, particularly juvenile eel, from entrainment during infilling.	Abstraction will most likely need to adhere to the terms set out in an abstraction licence. These are likely to include consideration of the volume / rate of abstraction and seasonal occurrence. The extraction will be restricted to occur outside the peak seasonal arrival of elver within the lower Mersey Estuary. This will be variable year-on-year due to environmental perturbations but is likely to run between March and April. Should that need to change, this would be consulted upon and agreed with the Environment Agency in advance.	Planning condition
Construction	Risk to benthic ecology through net loss of habitat.	Opportunistic retention of mobile benthic fauna made during the fish rescue will result in a small proportion of the benthos being translocated. Use of bubble curtains and silt curtain within the northern entrance to Bramley-Moore Dock will help prevent re-entry of marine life into Bramley-Moore Dock.	Planning condition
Construction	Risk to benthic ecology and water quality through release of contaminants.	Approximately two months of standby time will occur between the completion of raking operations and the infill of aggregate within Bramley-Moore Dock. This is to allow time for the re-suspended particulate (including remobilised contaminants) to settle back out of the water column.	Planning condition
Construction	Risk to benthic ecology via release of invasive or non-native species.	During the raking process, Bramley-Moore Dock will be isolated from the remainder of the dock network and the Mersey Estuary; this will prevent the inadvertent release of mobilised Invasive Non-Native Species (INNS) into adjacent areas and habitats through water transfer. In addition, approximately two months of standby time will occur between the completion of raking operations and the initial careful infill with aggregate.	Planning condition

Wind Microclimate

Operation	Expected unsafe and uncomfortable wind conditions at ground/first floor level amenity areas at the western side of the stadium and the western quayside	<p>In the context of both the existing and cumulative surrounds, a robust monitoring process, which will involve an individual (or several) monitoring the wind conditions and when certain trigger conditions are met, mobilising to restrict access to the ground floor public realm areas and also the top of the western terrace area.</p> <p>The triggers would be:</p> <ol style="list-style-type: none"> 1. Forecast wind speeds above a certain threshold that would be determined through further analysis 2. Local wind speeds above a certain threshold that would be determined through further analysis <p>If either of these trigger conditions are met, the terrace level amenity spaces would be closed to pedestrians.</p> <p>This monitoring strategy would require in order to determine:</p>	Planning Condition
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NON-TECHNICAL SUMMARY

PHASE	POSSIBLE EFFECT BEING MITIGATED	MITIGATION MEASURE	HOW SECURED / TRIGGER
		<div><div>3. An appropriate location for anemometers</div><div>4. The appropriate wind speed threshold to close restricted areas</div><div>Additionally, the applicant and its design team will be required to develop a strategy:</div><div>5. To control how access will be restricted to this area (via the porous gates proposed within the three openings in the west terrace steps and the north and south entrances to west terrace)</div><div>6. Define who will be monitoring the wind speeds</div><div>7. Define who will be responsible for closing/opening restricted areas</div><div>With this system in place the ground floor public realm areas (by the water channel in front of the west terrace steps), the top of the west terrace and the western quayside will only be accessible to the general public when wind conditions are safe and suitable for sitting or standing use. In undertaking this piece of work, a good understanding of how many days in each year that these would need to be closed off for can be established.</div></div>	
Lighting			
Construction	Lighting associated with dock infill, demolition and other construction works on sensitive receptors surrounding the proposed development site during the construction phase	<div>The Construction Management Plan for the project produced by Laing O’Rourke states the following with regards to lighting; “All site lighting will be LED energy efficient and kept low level and angled to point into the site. Lighting will be switched off outside of working hours”</div> <div>Lighting effects associated with the construction phase will be mitigated by implementing good practice measures across the Site including implementing a CEMP.</div> <div>Measures to be implemented include but not limited to:</div> <div><div>■ specified working hours, uses of lighting, locations of floodlights;</div><div>■ lighting to be switched off unless specifically needed; and</div><div>■ barriers to be erected to shield adjacent receptors where appropriate.</div></div>	CEMP, secured by planning condition, implemented by the contractor.

NON-TECHNICAL SUMMARY

PHASE	POSSIBLE EFFECT BEING MITIGATED	MITIGATION MEASURE	HOW SECURED / TRIGGER
		All on Site light installations will be positioned sensitively and targeted away from nearby receptors as identified above. Glare from floodlighting will be minimised by positioning lights to less than 70 degrees from the vertical uplift and will be directed into the Site. This will reduce upward light spill and subsequently reduce the impact on the Dark Sky environment. Further Construction mitigation measures can be found within the lighting technical report.	
Operation	Lighting during post-curfew periods (after 23:00) on Liverpool Waters scheme	Car park/ public realm lighting at the closest point to the committed Liverpool Waters would be turned off during post-curfew event conditions (after 23:00) to comply with relevant Institution of Lighting Professionals (ILP) environmental zone limits at committed receptors at Liverpool Waters.	Implemented into Lighting management once operational
Built Heritage			
Construction	Protection of listed structures on site	Preparation of a Conservation Management Plan to detail the protection of the heritage assets and features of the site during construction, including procedures in areas of contamination and for vehicle movements	Planning Condition /Listed Building Consent
Construction	Protection of listed structures on site	All listed structures, including the hydraulic tower and any dock walls, will be protected from damage during demolition and construction, with hoardings attached where appropriate to prevent any damage. Where agreed with Liverpool City Council and Historic England, removal of heritage assets will be undertaken for safe storage and later reuse.	Listed Building Consent
Construction	Loss of elements of heritage assets e.g. capstans/bollards that form part of Bramley-Moore Dock	Ahead of demolition, any heritage assets designated for reuse will carefully be removed and either stored safely on site, where they will be stored ready for reuse later in the project or sent for appropriate restoration. The majority of historically important artefacts will be retained in situ or relocated within the proposed public realm/landscaping scheme.	Listed Building Consent
Construction	Loss of historic materials from creation of openings in Regent Road Dock Wall	Granite facing stones from removed wall portions to be stored safely on site. Subsequently, larger granite facing stones to be reinstated on the overhead 'intel' portion rebuilt to hide the new structural supports. The metalwork will be fully encapsulated to side and top faces to hide the structural support. Sufficient ties will be provided between the stone and the supporting metal frame to ensure robustness. The remnant brick structure from the former Overhead Railway will be consolidated and repaired (only sections where the new openings are to be created are to be removed).	Listed Building Consent

NON-TECHNICAL SUMMARY

PHASE	POSSIBLE EFFECT BEING MITIGATED	MITIGATION MEASURE	HOW SECURED / TRIGGER
Construction	Installation of permanent northern isolation structure	A bored concrete solution is being proposed to permanently isolate Bramley-Moore Dock from the northern waterbodies. Two pile walls are being proposed which will be formed by constructing a series of reinforced concrete piles in the 'dry' water channel to the south of a temporary isolation structure, that interlock to form a water tight barrier. Eight pipes will be cast in between the two rows of piles at identical levels to the existing southern isolation structure to enable the exchange of dock water to the north and south. The approach has been undertaken at other Docks within the WHS/buffer zone (Nelson & Wellington Docks) and the exact methodology and interaction with the Dock Wall will be subject to Listed Building Consent.	Listed Building Consent
Construction	Repair and re-use of Hydraulic Tower	A series of measures to make the building safe, carry out measured internal building survey, structural condition surveys and eventually remedial works	Planning condition and Listed Building Consent
Archaeology			
Construction	Destruction of archaeological heritage asset (Receptor 08)	Sample/selective excavation to identify and record heritage asset	Planning condition
Construction	Destruction of archaeological heritage asset (Receptor 10)	Sample/selective excavation to identify and record heritage asset	Planning condition
Construction	Destruction of extant archaeological heritage asset (Receptor 11)	Historic building survey (Historic England 2016; Level 2)	Planning condition
Construction	Destruction of archaeological heritage asset (Receptor 12)	Sample/selective excavation to identify and record heritage asset	Planning condition
Construction	Destruction of archaeological heritage asset (Receptor 13)	Photogrammetric survey, sample excavation and archaeological watching brief	Planning condition

NON-TECHNICAL SUMMARY

PHASE	POSSIBLE EFFECT BEING MITIGATED	MITIGATION MEASURE	HOW SECURED / TRIGGER
Construction	Destruction of archaeological heritage asset (Receptor 14)	Sample/selective excavation of footings and ancillary features	Planning condition
Construction	Destruction of archaeological heritage asset (Receptor 15)	Sample/selective excavation of footings and ancillary features	Planning condition
Construction	Destruction of archaeological heritage asset (Receptor 16)	Photogrammetric survey, sample excavation and archaeological watching brief	Planning condition
Construction	Destruction of archaeological heritage asset (Receptor 17)	Sample/selective excavation, of footings and ancillary features	Planning condition
Construction	Destruction of archaeological heritage asset (Receptor 18)	Evaluation trenching followed by full excavation if appropriate	Planning condition
Construction	Destruction of archaeological heritage asset (Receptor 19)	Photogrammetric survey, sample/selective excavation and archaeological watching brief	Planning condition
Construction	Destruction of extant archaeological heritage asset (Receptor 23)	Sample/selective excavation to identify and record heritage asset	Planning condition
Construction	Destruction of archaeological heritage asset (Receptor 24)	Historic building survey (Historic England 2016; Level 1)	Planning condition

NON-TECHNICAL SUMMARY

PHASE	POSSIBLE EFFECT BEING MITIGATED	MITIGATION MEASURE	HOW SECURED / TRIGGER
Construction	Destruction of archaeological heritage asset (Receptor 25)	Sample/selective excavation to identify and record heritage asset	Planning condition
Construction	Destruction of archaeological heritage asset (Receptor 28)	Evaluation trenching followed by full excavation if appropriate	Planning condition
Construction	Destruction of archaeological heritage asset (Receptor 29)	Evaluation trenching followed by full excavation if appropriate	Planning condition
Construction	Destruction of archaeological heritage asset (Receptor 30)	Photogrammetric survey, sample excavation and archaeological watching brief	Planning condition
Socio-Economics			
Construction	Generation of construction employment	<div>The Construction Management Plan (CMP) includes the following commitments:<ul style="list-style-type: none">■ Creating a pipeline of future talent (apprentices) where requirements will be reviewed for on-site, off-site and heritage;■ Supporting economic growth (employment and supply chain);■ Run programmes in partnership with EitC mirroring their programmes using construction as a ‘pull’, as they do with sport;■ Being innovative by moving away from traditional commitment to just numbers, i.e. work experience, school visits, combining these into meaningful and structured programmes where benefits can be seen; and■ Supporting adults on EitC programmes to the jobs market.</div>	Planning condition

NON-TECHNICAL SUMMARY

SUMMARY

This ES has considered:

- The scale and nature of the proposed development;
- Legislation, policy and guidance;
- Baseline data;
- Environmental impacts resulting from the proposed development;
- Recommended mitigation measures; and
- Residual effects.

Table 3 sets out the significant residual effects (Moderate or Major Significance) of the proposed development as identified through the EIA process and reported in the technical chapters of ES Volumes II and III. This is not a list of all residual effects as various Negligible and Minor effects have also been identified, however, these are not considered to be 'Significant' in terms of the EIA Regulations 2011. It is an amalgamation of the residual effects tables presented at the end of each technical chapter within Volumes II and III of the ES.

LIKELY SIGNIFICANT EFFECTS

Following implementation of mitigation measures, the following potential residual significant effects have been identified as a result of the proposed development over the construction and operational phases:

- Noise & Vibration:
 - Moderate adverse noise effects on receptors TR09 (Titanic Hotel, Stanley Dock, Regent Road) (short-term 2023) and TR10 (62 Regent Road) (short-term 2023 and 2028) associated with increased vehicle movements; and
- Moderate adverse noise effects associated with matchday operations prior to kick-off (crowd footfall in and around the stadium, noise associated with the proposed fan zone, noise associated with food and drink vans, parking movements and adjacent to the sea wall and use of the PA/VA system) on receptor R11 (62 Regent Road).
- Moderate adverse noise effects associated with matchday operations during match (crowd noise including contributions from fans cheering and chanting, a goal being scored and celebratory music and full use of the PA/VA system in and around the stadium) on receptor R11 (62 Regent Road).
- Wind Microclimate:
 - Wind conditions in parts of on-site thoroughfares in Areas A, B, C, D1, D2, F2, H2, J2, K, L, M, N1, P2 – Moderate Beneficial effects;
 - Wind conditions at on-site entrances in Area I2 – Moderate Beneficial effects;
 - Wind conditions on UU WwTW land (parts of UU2 and UU3) – Moderate Adverse effects;
 - Wind conditions on UU WwTW land (UU4) – Moderate Beneficial to Moderate Adverse effects.
- Townscape & Visual:
 - **Construction:**
 - Moderate adverse effects on townscape character of the Bramley-Moore Dock waterbody and associated dock walls are anticipated;
 - Moderate adverse effects on townscape character of the Hydraulic Engine House anticipated;
 - Moderate adverse effects on townscape character of the Waterfront and Its Fringes City Centre Character Area anticipated;

NON-TECHNICAL SUMMARY

- A major adverse effect on townscape character of WHS SPD Character Area 3 (Stanley Dock Conservation Area) is anticipated; and
- Moderate adverse effects on Viewpoints 3 (Pedestrians/Cyclists) 8 (pedestrians/cyclists) 26 (all receptors), 27 (all receptors) anticipated.
- **Operation:**
 - Moderate beneficial effects on townscape character of the Waterfront and Its Fringes City Centre Character Area (all scenarios) and Residential Docks Townscape Character Area (day time non-matchday/matchday, night-time match day);
 - Major adverse effects on townscape character of the Hydraulic Engine House;
 - Moderate adverse effects on townscape character of the Bramley-Moore Dock waterbody and associated dock walls;
 - Major beneficial effects on townscape character of WHS SPD Character Area 3 (Stanley Dock Conservation Area) (all scenarios);
 - Moderate beneficial effects on Viewpoints 3 and 8 (both daytime non-matchday - pedestrians/cyclists), 26 and 27 (both all receptors under all scenarios); and
 - Moderate adverse effects on Viewpoints 3 (daytime/night time matchday – all receptors) and 8 (daytime/night time matchday, night time non-matchday – pedestrians/cyclists).
- **Built Heritage:**
 - **Construction**
 - Physical changes to and effects on the setting of Bramley-Moore Retaining Dock Walls – Major adverse effect;
 - Physical changes to and effects on the setting of Regent Road Dock Wall – Moderate adverse effect;
 - Commitment to repair, restore and convert the Hydraulic Engine House – Major beneficial effect;
 - Physical changes to elements of the Stanley Dock Conservation Area and effects on the conservation area's setting – Major adverse effect;
 - Physical changes to and effects on the setting of heritage assets that contribute to the Liverpool Maritime Mercantile City World Heritage Site – Major adverse effect;
- **Operation**
 - It is not considered likely that the operation of the proposed development will have any impacts on any of the key heritage receptors beyond those identified as a consequence of its built form during the construction phase.
- **Socio-economic:**
 - During the construction phase, two moderate beneficial effects have been identified on labour market and skills and on the local economy for the generation of GVA. One major beneficial effect has also been identified on labour market and employment.
 - During operation two moderate beneficial effects have been identified on the labour market and employment due to the generation of GVA and operational employment. A further three moderate beneficial effects have been identified on the local economy owing to the generation of additional wage income, additional expenditure and an increase in marketing and sponsorship revenue;
 - Two moderate beneficial effects on the local community during operation have been identified with the generation of societal value and preservation and heritage value.

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The remaining potential environmental effects during construction and operation are considered to be of negligible to minor residual significance and therefore are considered not significant.

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Table 3

Residual Significant Effects

TECHNICAL AREA	PHASE	RECEPTOR	RESIDUAL IMPACT	RESIDUAL EFFECT SIGNIFICANCE	ADVERSE / BENEFICIAL
Noise & Vibration	Operation – Traffic (Short-term 2023)	TR09-TR10	Noise associated with increased vehicle movements	Moderate	ADV
Noise & Vibration	Operation – Traffic (Short-term 2028)	TR10	Noise associated with increased vehicle movements	Moderate	ADV
Noise & Vibration	Operation – Stadium Scenario 1 Noise Intrusion	R11	Noise associated with matchday operations prior to kick-off: crowd footfall in and around the stadium, noise associated with the proposed fan zone, noise associated with food and drink vans, parking movements within the west stand and adjacent to the sea wall and use of the PA/VA system	Moderate	ADV
Noise & Vibration	Operation – Stadium Scenario 2 Noise Intrusion	R11	Noise associated with matchday operations during match: crowd noise including contributions from fans cheering and chanting, a goal being scored and celebratory music and full use of the PA/VA system in and around the stadium.	Moderate	ADV
Wind - On-Site Receptors	Operation	Thoroughfares A, B, C, D1, D2, F2, H2, I2, J2, K, L, M, N1, P2	Wind comfort conditions that are suitable or calmer than the target comfort conditions	Moderate	BEN
Wind - Off-Site Receptors	Operation	UU2, UU3, UU4	Wind comfort conditions that are windier than the target comfort conditions	Moderate	ADV
Wind - Off-Site Receptors	Operation	UU4	Wind comfort conditions that are calmer than the target comfort conditions	Moderate	BEN
Townscape & Visual	Construction	Bramley-Moore Dock waterbody and associated dock walls	Effects on townscape character	Moderate adverse: Significant	ADV

NON-TECHNICAL SUMMARY

TECHNICAL AREA	PHASE	RECEPTOR	RESIDUAL IMPACT	RESIDUAL EFFECT SIGNIFICANCE	ADVERSE / BENEFICIAL
Townscape & Visual	Construction	Hydraulic Engine House	Effects on townscape character	Moderate adverse: Significant	ADV
Townscape & Visual	Construction	The Waterfront and Its Fringes City Centre Character Area	Effects on townscape character	Moderate adverse: Significant	ADV
Townscape & Visual	Construction	WHS SPD Character Area 3 - Stanley Dock Conservation Area	Effects on townscape character	Major adverse: Significant	ADV
Townscape & Visual	Construction	Viewpoint 3. Regent Road	Effects on view	Pedestrians / Cyclists — Moderate adverse: Significant	ADV
Townscape & Visual	Construction	Viewpoint 8. Bascule Bridge	Effects on view	Pedestrians / Cyclists — Moderate adverse: Significant	ADV
Townscape & Visual	Construction	Viewpoint 26. Trafalgar Dock	Effects on view	Moderate adverse: Significant - all receptors	ADV
Townscape & Visual	Construction	Viewpoint 27. South-Western edge of Trafalgar Dock	Effects on view	Moderate adverse: Significant - all receptors	ADV
Townscape & Visual	Operation - All scenarios	Bramley-Moore Dock waterbody and associated dock walls	Effects on townscape character	Major adverse: Significant	ADV
Townscape & Visual	Operation	Hydraulic Engine House	Effects on townscape character	Moderate beneficial: Significant	BEN

NON-TECHNICAL SUMMARY

TECHNICAL AREA	PHASE	RECEPTOR	RESIDUAL IMPACT	RESIDUAL EFFECT SIGNIFICANCE	ADVERSE / BENEFICIAL
	— Day time non match day - Day time match day				
Townscape & Visual	Operation — Night time non match day - Night time match day	Hydraulic Engine House	Effects on townscape character	Moderate beneficial: Significant	BEN
Townscape & Visual	Operation - Day time non match day	The Waterfront and Its Fringes City Centre Character Area	Effects on townscape character	Moderate beneficial: Significant	BEN
Townscape & Visual	Operation - Day time match day	The Waterfront and Its Fringes City Centre Character Area	Effects on townscape character	Moderate beneficial: Significant	BEN
Townscape & Visual	Operation - Night time non match day	The Waterfront and Its Fringes City Centre Character Area	Effects on townscape character	Moderate beneficial: Significant	BEN
Townscape & Visual	Operation - Night time match day	The Waterfront and Its Fringes City Centre Character Area	Effects on townscape character	Moderate beneficial: Significant	BEN
Townscape & Visual	Operation - Day time non match day	WHS SPD Character Area 3 - Stanley Dock Conservation Area	Effects on townscape character	Major beneficial: Significant	BEN

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TECHNICAL AREA	PHASE	RECEPTOR	RESIDUAL IMPACT	RESIDUAL EFFECT SIGNIFICANCE	ADVERSE / BENEFICIAL
Townscape & Visual	Operation - Day time match day	WHS SPD Character Area 3 - Stanley Dock Conservation Area	Effects on townscape character	Major beneficial: Significant	BEN
Townscape & Visual	Operation - Night time non match day	WHS SPD Character Area 3 - Stanley Dock Conservation Area	Effects on townscape character	Major beneficial: Significant	BEN
Townscape & Visual	Operation - Night time match day	WHS SPD Character Area 3 - Stanley Dock Conservation Area	Effects on townscape character	Major beneficial: Significant	BEN
Townscape & Visual	Operation - Day time non match day	Residential Docks Townscape Character Area	Effects on townscape character	Moderate beneficial: Significant	BEN
Townscape & Visual	Operation - Day time match day	Residential Docks Townscape Character Area	Effects on townscape character	Moderate beneficial: Significant	BEN
Townscape & Visual	Operation - Night time match day	Residential Docks Townscape Character Area	Effects on townscape character	Moderate beneficial: Significant	BEN
Townscape & Visual	Operation - Day time non match day	Viewpoint 3. Regent Road	Effects on view	Pedestrians / Cyclists — Moderate beneficial: Significant	BEN
Townscape & Visual	Operation - Day time match day	Viewpoint 3. Regent Road	Effects on view	Pedestrians /Cyclists — Moderate adverse: Significant	ADV

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TECHNICAL AREA	PHASE	RECEPTOR	RESIDUAL IMPACT	RESIDUAL EFFECT SIGNIFICANCE	ADVERSE / BENEFICIAL
				Vehicular road users /People at place of work — Moderate adverse: Significant	
Townscape & Visual	Operation - Night time match day	Viewpoint 3. Regent Road	Effects on view	Pedestrians / Cyclists — Moderate adverse: Significant Vehicular road users / People at place of work — Moderate adverse: Significant	ADV
Townscape & Visual	Operation - Day time non match day	Viewpoint 8. Bascule Bridge	Effects on view	Pedestrians / Cyclists — Moderate beneficial: Significant	BEN
Townscape & Visual	Operation - Day time match day	Viewpoint 8. Bascule Bridge	Effects on view	Pedestrians / Cyclists — Moderate adverse: Significant	ADV
Townscape & Visual	Operation - Night time non match day	Viewpoint 8. Bascule Bridge	Effects on view	Pedestrians / Cyclists — Moderate adverse: Significant	ADV
Townscape & Visual	Operation - Night time match day	Viewpoint 8. Bascule Bridge	Effects on view	Pedestrians / Cyclists — Moderate adverse: Significant	ADV

NON-TECHNICAL SUMMARY

TECHNICAL AREA	PHASE	RECEPTOR	RESIDUAL IMPACT	RESIDUAL EFFECT SIGNIFICANCE	ADVERSE / BENEFICIAL
Townscape & Visual	Operation - Day time non match day	Viewpoint 26. Trafalgar Dock	Effects on view	Moderate beneficial: Significant - all receptors	BEN
Townscape & Visual	Operation - Day time match day	Viewpoint 26. Trafalgar Dock	Effects on view	Moderate beneficial: Significant - all receptors	BEN
Townscape & Visual	Operation - Night time non match day	Viewpoint 26. Trafalgar Dock	Effects on view	Moderate beneficial: Significant - all receptors	BEN
Townscape & Visual	Operation - Night time match day	Viewpoint 26. Trafalgar Dock	Effects on view	Moderate beneficial: Significant - all receptors	BEN
Townscape & Visual	Operation - Day time non match day	Viewpoint 27. South-Western edge of Trafalgar Dock	Effects on view	Moderate beneficial: Significant - all receptors	BEN
Townscape & Visual	Operation - Day time match day	Viewpoint 27. South-Western edge of Trafalgar Dock	Effects on view	Moderate beneficial: Significant - all receptors	BEN
Townscape & Visual	Operation - Night time non match day	Viewpoint 27. South-Western edge of Trafalgar Dock	Effects on view	Moderate beneficial: Significant - all receptors	BEN
Townscape & Visual	Operation - Night time match day	Viewpoint 27. South-Western edge of Trafalgar Dock	Effects on view	Moderate beneficial: Significant - all receptors	BEN

NON-TECHNICAL SUMMARY

TECHNICAL AREA	PHASE	RECEPTOR	RESIDUAL IMPACT	RESIDUAL EFFECT SIGNIFICANCE	ADVERSE / BENEFICIAL
Built Heritage	Construction	Bramley-Moore Retaining Dock Walls – asset	Whilst protection of the listed structures will not change the impact of the proposals on the receptor, the residual effect will be to safeguard the historic fabric to ensure its long-term survival following construction works and to allow for the long-term possibility of reversibility. A detailed Listed Building Consent for the installation of a permanent northern isolation structure will ensure the works are carried out in a way that protects the existing listed dock walls and allows for the long-term possibility of reversibility, it will not, however change the effect.	Major	ADV
Built Heritage	Construction	Bramley-Moore Retaining Dock Walls – setting	Effects on the setting of the heritage asset.	Major	ADV
Built Heritage	Construction	Regent Road Dock Wall - asset	Whilst the protection of the listed wall will not change the effect of the proposals on the receptor, the residual effect will be to safeguard the remaining historic fabric to ensure its long-term survival following construction works. A methodology secured by Listed Building Consent for the storing and reinstatement of historic granite that is removed for the new openings in the Dock Wall will ensure a high quality finish and that the receptor is not further harmed by the proposals.	Moderate	ADV
Built Heritage	Construction	Regent Road Dock Wall – setting	Effects on the setting of the heritage asset.	Moderate	ADV
Built Heritage	Construction	Hydraulic Engine House – asset	Commitment to repair, restore and convert the heritage asset. A series of reports and surveys and ultimately remedial works will ensure that the benefits offered by the proposals to the Hydraulic Engine House are delivered as effectively as possible.	Major	BEN
Built Heritage	Construction	Hydraulic Engine House – setting	Effects on the setting of the heritage asset.	Moderate	ADV
Built Heritage	Construction	Stanley Dock Conservation Area	The mitigation measures will ensure that works carried out to elements of the conservation area that are regarded as making a positive contribution to the character and appearance of the conservation area are safeguarded and their long-term survival ensured.	Major	ADV

NON-TECHNICAL SUMMARY

TECHNICAL AREA	PHASE	RECEPTOR	RESIDUAL IMPACT	RESIDUAL EFFECT SIGNIFICANCE	ADVERSE / BENEFICIAL
Built Heritage	Construction	Liverpool Maritime Mercantile City World Heritage Site	The mitigation measures will ensure that works carried out to elements of the WHS that are regarded as displaying attributes contained in the Statement of OUV are safeguarded and their long-term survival ensured.	Major	ADV
Built Heritage	Construction	Nelson Dock Retaining Walls — asset and setting	The proposals will require the removal of the existing capstans that currently line the dock retaining wall. The majority of these are damaged, however those in good repair will be retained. It will also change its setting.	Moderate	NEU
Built Heritage	Construction	Tobacco Warehouse	Effects on the setting of the heritage asset.	Moderate	NEU
Built Heritage	Construction	Victoria Clock Tower - setting	Effects on the setting of the heritage asset.	Moderate	NEU
Socio-economics	Construction	Labour Market & Employment	Generation of construction employment	Major	BEN
Socio-economics	Construction	Labour Market & Skills	Generation of training and apprenticeship opportunities	Moderate	BEN
Socio-economics	Construction	Local Economy	Generation of GVA	Moderate	BEN
Socio-economics	Operation	Local Economy	Generation of additional expenditure	Moderate	BEN
Socio-economics	Operation	Local Economy	Generation of additional wage income	Moderate	BEN
Socio-economics	Operation	Local Economy	Increase in marketing and sponsorship revenue	Moderate	BEN
Socio-economics	Operation	Local Community	Generation of societal value	Moderate	BEN

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TECHNICAL AREA	PHASE	RECEPTOR	RESIDUAL IMPACT	RESIDUAL EFFECT SIGNIFICANCE	ADVERSE / BENEFICIAL
Socio-economics	Operation	Local Community	Preservation of social and heritage value	Moderate	BEN
Socio-economics	Operation	Labour Market & Employment	Generation of GVA	Moderate	BEN

NON-TECHNICAL SUMMARY

DETERMINATION PERIOD

Terrestrial

As per Regulation 16(5) of the EIA Regulations 2011, LCC shall not determine the EIA application until the expiry of 14 days from the last date on which a copy of the statement was served to any of the above persons / bodies. The determination must also be made after the expiry of 21 days from the display of the site notice and 14 days from the date of publication in the local newspaper (whichever is the later).

In contrast to a normal planning application, which should be decided upon within either 8 or 13 weeks of submission, those applications accompanied with an ES are to be decided within 16 weeks of submission (Regulation 61(2)).

Marine

As per Regulation 17 (5) of the Marine EIA Regulations 2007, neither the regulator nor the appropriate authority may reach a regulatory decision, until the consultation period (including any agreed extensions) has expired.

HOW TO COMMENT

The ES and the planning application will be available to be viewed and downloaded at LCC's (application reference: 20F/0001) and the MMO's (application reference: MLA/2020/00109) respective websites:

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

<https://marinelicensing.marinemanagement.org.uk/mmofox5/fox/live/>

For anyone without personal access to the internet, the documents can be viewed online at any of LCC's libraries through the computer/internet facilities available, or a hard copy of the ES and supporting documents can be viewed at LCC's offices (provided no COVID-19 restrictions are in place at the time of reading).

Comments on the planning application and ES should be addressed to Mr Peter Jones, Planning officer, at the address below or may be made online via LCC's planning applications website.

Liverpool City Council
Planning
Cunard Building
Water Street
Liverpool
L3 1AH

Paper copies of this ES can be obtained for £500.00 (to reflect printing and distribution costs) by contacting:

CBRE Ltd - Environmental Planning & Assessment
St Martins Court
10 Paternoster Row
London
EC4M 7HP

Alternatively, an electronic copy of the ES can be obtained for £10.00 by contacting CBRE at the above address. Charges for paper and electronic copies of the ES are made in accordance with Regulation 21 of the EIA Regulations 2011.

NON-TECHNICAL SUMMARY

WORKS CITED

- [1] H. Government, The Town and Country Planning (Environmental Impact Assessment) Regulations 2011, London.
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- [6] L. C. Council, "Liverpool Maritime Mercantile City World Heritage Site Supplementary Planning Document (SPD)," 2009.
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- [11] B. R. E. (BRE), "Building Research Establishment (BRE) Handbook 'Site Layout Planning for Daylight and Sunlight 2011: A Guide to Good Practice," 2011.