

3 APPLICATION SITE & PROPOSED DEVELOPMENT

3.1 INTRODUCTION

This chapter describes the application site location, existing land uses and features. It also provides an overview of the wider area to place it in the context of its surrounding environment. Greater detail on the existing environment is provided in the baseline conditions sections contained within the technical chapters of this ES and the appendices in ES Volume III.

This chapter also describes the physical characteristics of the proposed development, including the land use requirements during the construction and operational phases, to enable the likely significant effects of the proposed development to be identified.

3.2 SITE LOCATION

3.2.1 The Application Site

The application site comprises Bramley-Moore Dock (BMD), within the Port of Liverpool on the River Mersey (centred on National Grid Reference (NGR) SJ3345292491), as shown on Figure 1.1 (Site Location Plan).

The application site area, comprising BMD, is 8.67 ha. and is currently accessed through two gated openings in the Grade II listed dock wall from Regent Road (ref. 1072979), at the southeast and northeast corners of the site. The application site is part of the wider dock network which is shown on Figure 3.1.

To the north of BMD is Wellington Dock, which has been infilled and houses the United Utilities Wastewater Treatment Works (UU WwTW) (Planning Ref: 11F/1581, approved 12/01/2012), whilst to the northwest lies Sandon Half-Tide Dock, which remains connected to BMD via a pair of dock gates. Unlike BMD, Sandon Half-Tide Dock lies within the operational Port.

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

To the south lies Nelson Dock, the connective dock gate to which is sealed (via existing isolation structure) with hydraulic connectivity to BMD maintained via pipe works/sluice gates.

The western boundary of the application site is the elevated River Mersey wall, which forms a flood defence to the site, however, this is situated outside of the redline boundary associated with this application. To the west of this boundary wall lies the River Mersey. On the far west bank of the River Mersey directly opposite the application site is the Wirral with a mix of uses, predominantly residential dwellings, fronting the river bank.

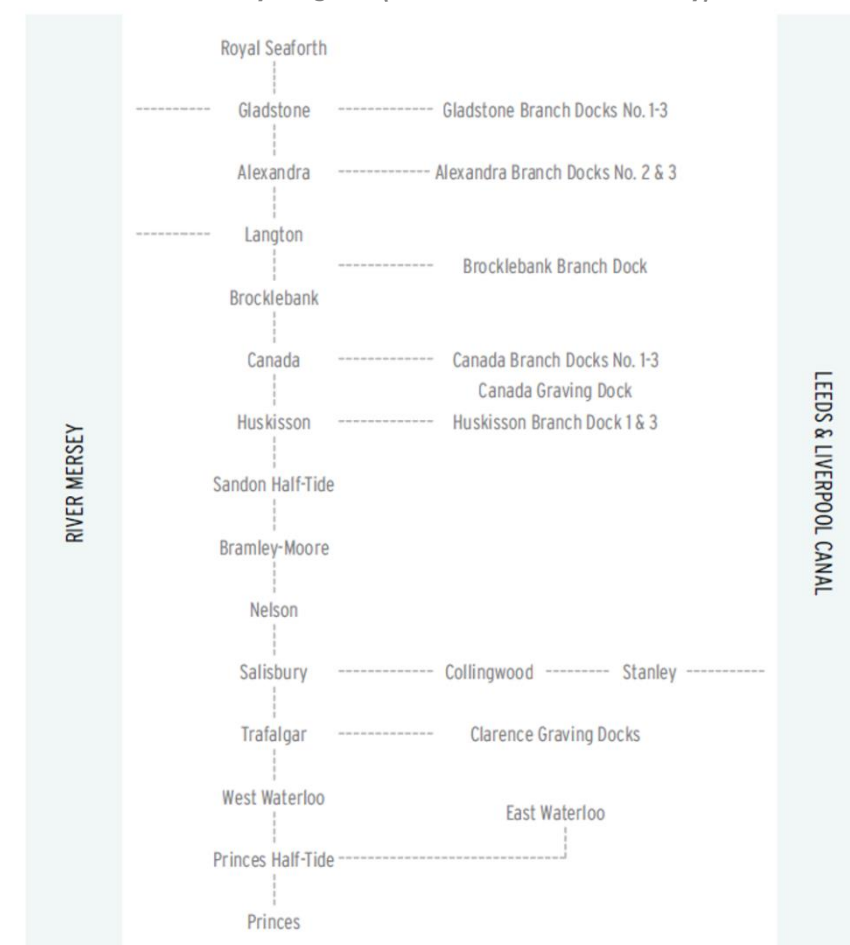
The following designations cover the application site:

- UNESCO World Heritage Site: Liverpool - Maritime Mercantile City (LMMC) (Ref. 1000104);
- Listed Buildings:
 - Bramley-Moore Dock Retaining Walls, Grade II (Ref. 1072980);

- Hydraulic Engine House at Bramley-Moore Dock, Grade II (Ref. 1072981);
 - Dock Wall from opposite Sandhills Lane to Collingwood Dock with Entrances, Grade II (Ref. 1072979); and
 - Nelson Dock Retaining Wall (northern wall), Grade II (Ref. 1209519).
- Stanley Dock Conservation Area.

Figure 3.1

Dock interconnectivity diagram (indicates water connectivity)



Source: MEIS Architects

3.3 HISTORICAL USE OF THE SITE

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

BMD was named after John Bramley-Moore, the Chairman of the Dock Committee and Mayor of Liverpool, who had made his fortune trading with Brazil. At circa four hectares in area, it is the largest in the group of five

dock water bodies- including Salisbury, Collingwood, Stanley and Nelson – that were opened in August 1848. Together with Nelson Dock, BMD was intended to take the largest steamships of the day.

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

Since the earliest map (1851) the site has been in much the same configuration as exists today, save for buildings along the north and west wharves and rail tracks along the east wharf (see Appendix 19.1). By 1890 the northern building had been replaced with further train tracks. On the 1907 map, these tracks were labelled as being part of a high-level coal railway and included several cranes around the dock edge. Little changed on site until 1967 when the rail tracks on the north wharf were scaled back and a small structure of unknown use was constructed in the northwest corner, adjacent to the gate to the Sandon Half-Tide Dock to the north.

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

Planning permission and associated listed building consent (Liverpool City Council (LCC)) ref. 12F/0845 & 12L/0847) were granted to United Utilities in May 2012 for the following:

'To reopen existing entrance to Bramley-Moore Dock, demolish brickwork and replace with palisade fencing/gate.'

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

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

Outline planning permission was granted in June 2013 for the 'Liverpool Waters' scheme (LPA ref. 10O/2424), which encompasses BMD and the docks to the south. Details of this scheme are provided below.

Historical mapping and further information on the historical uses of the application site are included in Appendix 10.2 Geoenvironmental Interpretative Report and Appendix 19.1 Archaeological Desk-based Assessment.

APPLICATION SITE & PROPOSED DEVELOPMENT

3.4 RECENT PLANNING HISTORY

3.4.1 Liverpool Waters Outline Consent

Peel Land & Property ('Peel L&P') received a resolution from LCC to grant outline planning permission (Ref.10O/2424) in 2012, and a decision notice was issued in June 2013 after the application was referred to the then Secretary of State and was not called-in. The permission for the Liverpool Waters project is defined as:

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 sqm 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 consented scheme encompasses five neighbourhood areas:

- Princes Dock (Phase 1 – 2019-2024 delivery timeframe);
- Central Docks (Phase 2 – 2020-2036);
- King Edward Triangle (Phase 3 – 2021-2029);
- Clarence Docks (Phase 4 – 2031 – 2036); and
- Northern Docks (Phase 5 – 2036 – 2041).

The Bramley-Moore Dock application site forms part of the Northern Docks neighbourhood area within the consented masterplan. The permission includes a 32 year period for submission of Reserved Matters applications, starting from the date of the permission.

Since planning permission was granted in 2013, Peel L&P has submitted several discharge of condition applications and a Reserved Matters application to ensure the permission remains extant. Peel L&P has also amended the permission through Non-Material Amendments, the most recent of which was submitted on 30th July 2020 (LPA reference 20NM/1801, currently pending determination). The masterplan for the Central Docks neighbourhood has been submitted under a discharge of conditions application (Discharge of Condition 11 application ref. 19DIS/1315) and was approved on the 12th November 2019.

Further to this, several standalone full planning applications have been submitted and approved within the Liverpool Waters site boundary.

The Northern Docks Neighbourhood (comprising Bramley-Moore Dock and neighbouring Nelson Dock) is identified as the final phase of the Liverpool Waters development, which is scheduled to take place between 2036 and 2041. Condition 2 of the Liverpool Waters outline planning permission identified planned floorspace per neighbourhood. The following summarises the development proposed for the Northern Docks area:

Table 3.1
Use Class floorspace for the Northern Docks Neighbourhood of the Liverpool Waters development

USE CLASS	AREA (SQ M)
A1Shops (comparison)	4,000
A1 Shops (convenience)	1,000
A2 Financial & Professional	300
A3 Restaurants & Cafes	2,200
A4 Drinking Establishments	1,200
B1 Business	1,800
C3 Dwelling Houses	219,500
D1 Non-Residential Institutions	6,600
D2 Assembly & Leisure	1,000
Servicing	5,800
Sui Generis (other)	1,000
Sui Generis (Parking)	103,100
Total	347,500

3.5 CURRENT SITE USE AND FEATURES

3.5.1 Overview of the Current Site Use

As discussed, BMD is currently accessed through two gated openings in the dock wall from Regent Road (Grade II listed, ref. 1072979), at the southeast and northeast corners of the site. This is a granite boundary wall with turreted double gate entrances, a flanking pair of round towers and a larger central tower incorporating a watchman's hut. These accesses allow vehicular and pedestrian access. The site predominantly comprises a dock waterbody, surrounded by a Grade II Listed dock retaining wall (Ref. 1072980) and hardstanding.

The retaining walls of the dock are authentic to the time of their construction or reconstruction and many original ground surfaces and ancillary structures and objects survive in situ around the docks. The eastern end of BMD is splayed, following the dock road, to maximise water space and is bounded to the east by the Regent Road dock wall.

The Hydraulic Engine House, built in 1883, is Grade II Listed (Ref. 1072981) and is situated in the northeast corner of the site. It was used for providing hydraulic power to operate the dock gates.

A two-storey brick structure sits at the western end of the north wharf and a shed structure sits on the southern wharf. Both structures are unlisted.

There are also two small structures on the western quay, one to the north-east adjacent to the passage to Sandon Half-Tide Dock and one in the south-west corner of the quayside (both unlisted). A substation is located to the east of the site, adjacent to the Regent Road Dock Wall (also unlisted).

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

The site was previously used for aggregate storage and distribution, operated by Mersey Sands. However, the lease for this use expired in August 2019.

The site is occupied by Svitser, which operates tug boat services, and by Cataclean under lease arrangements which have been extended to June 2021.

3.6 APPLICATION SITE CONTEXT

3.6.1 Transport

3.6.1.1 Highway Network

The application site is bounded by Regent Road to the east, with highway connectivity access to the city centre and northwards provided by the parallel north – south routes of the A565 Great Howard Street and Regent Road.

Regent Road is currently a single carriageway, 30mph adopted highway route and mainly used by vehicles travelling to the surrounding businesses or as an alternative route to A565 Great Howard Street. Some on-street informal car parking exists along the route as well as marked coach parking bays.

The A565 Great Howard Street is the key north-south dual carriageway corridor in the area that connects to the city centre and onwards to the M62 in the south and to the north to the A5036 for access to the M57 and M58 and it forms part of the Liverpool City Region's Key Route Network. Regent Road serves a lower level, local distributor function.

In the vicinity of the site the north - south corridors of Regent Road and A565 Great Howard Street are connected to one another by the east – west routes Boundary Street, Blackstone Street and Walter Street. All these east – west connecting streets are single carriageway and on account of the industrial nature of the area are particularly wide and able to accommodate HGV movements. These connecting routes take the form of priority junctions with Regent Road being the main route.

APPLICATION SITE & PROPOSED DEVELOPMENT

All streets in the vicinity of the application site are subject to a 30mph speed limit apart from Great Howard Street, which, once improvement works are completed on this route in 2020 will be a 40mph dual carriageway.

3.6.1.2 Bus Services

Due to the current land use around the application site not providing significant demand, there are limited existing bus services which travel to/from the immediate area, however there are good service connections on A565 Great Howard Street which runs parallel to Regent Road. Current services on this route include the 101 to Belmont Road (Anfield), and the 135 and 235 both to Netherton, with all three services connecting in the opposite direction with Liverpool City Centre. Between them, they provide a service on Great Howard Street approximately every 15 minutes in each direction. The bus network is predominantly concentrated along Vauxhall Road, Stanley Road, Scotland Road and Great Homer Street.

3.6.1.3 Rail Services

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

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

3.6.1.4 Pedestrian Facilities

There are existing footways along Regent Road to support pedestrian movements and a new puffin crossing just south of the junction with Walter Street near the Titanic Hotel. Other crossing points along the road are minimal with limited central reservations or pedestrian islands provided south of the application site to support pedestrian crossings. As part of the North Liverpool Key Corridor scheme the footways on Regent Road have recently been resurfaced and widened. Furthermore, footways on Derby Road and Great Howard Street have been resurfaced and widened.

3.6.1.5 Cycle Facilities

Regent Road has recently been upgraded as part of the North Liverpool Key Corridor scheme to include a segregated cycle lane separated from the footway and from the vehicular carriageway.

As part of the upgrade to Regent Road/Derby Road to a dual carriageway advance stop lines for cyclists were incorporated at the three major junctions close to the application site including Derby Road/Boundary Street; Derby Road / Blackstone Street / Great Howard Street; and Great Howard Street / Lightbody Street / Walter Street.

Further information on the existing transport, connectivity and highway network is contained within Chapter 7 Transport of the ES and the Transport Assessment, provided at Appendix 7.1, ES Volume III.

3.6.2 Topography

The application site comprises relatively level quay areas. Topographical surveys of the site have been undertaken to detail the composition of its groundscape, dock walls, and existing structures. The existing site ground is an amalgamation of soil, tarmac, concrete, sand, dock wall capstones, original granite setts, and in-ground rail track segments. An existing isolation structure at southwest provides the only current land connection between the west quay and the rest of the site. The majority of the application site falls between the level of +6.60m - 7.00m above Ordnance Datum (AOD). In a few places, notably near the northern end of the River Mersey wall, the site level rises as high as +7.40m AOD. Bathymetric survey information indicates the dock floor varies in elevation by approximately 3m.

3.6.3 Ground Conditions

3.6.3.1 Geology

The site is directly underlain by Tidal Flat Deposits over Glacial Till and Sherwood Sandstone Group (Chester Formation). The Tidal Flat Deposits indicated by British Geological Survey (BGS) Sheet 96 (1) (2) are not indicated to be present in the available historic borehole records. It is possible that the Tidal Flat Deposits were removed when the dock was constructed. Anecdotal information from adjacent docks suggests that the docks would have been excavated to bedrock and lined with a layer of puddle clay. A layer of soft sediment is expected at the base of the dock, having settled out of the water over time.

Due to the developed nature of the application site, the ground will have been disturbed, and a nominal thickness of Made Ground (i.e. fill material) is expected beneath the site and surrounding area.

3.6.3.2 Hydrogeology

The Tidal Flat Deposits are designated as an unproductive aquifer. The Glacial Till is designated Secondary (undifferentiated) aquifer and the Chester Formation bedrock underlying the Site is a designated Principal aquifer.

Groundwater conditions are expected to be strongly influenced by the adjacent water bodies of the impounded dock and tidal fluctuations of the adjacent River Mersey. The presence of the existing quay walls and probable low permeability lining to the dock means that dock water levels are not strongly influenced by tidal fluctuations.

Further information on the ground conditions at the site is contained within Chapter 10 Ground Conditions and its Appendices.

3.6.4 Water Environment

3.6.4.1 Hydrology

The nearest surface water feature to the application site (excluding the dock water bodies) is the River Mersey, bordering the western edge of the application site. The local area to the east of BMD is drained by a widespread combined sewer network. The Leeds and Liverpool Canal is situated approximately 500m east of the site, running approximately north-south, with an exit through Stanley, Collingwood and Salisbury Docks via a series of locks 150m to the south of the site.

The River Mersey has the second highest tidal range in the UK, varying from 4m at neaps to 10m at spring tides. The river flow is about 1% of the tidal flow.

The water quality of the River Mersey has been classified by the Environment Agency under their regional River Basin Management Plan (RBMP) as having 'moderate' ecological potential and 'good' chemical status.

It is understood that there are no licenced surface water abstractions within a 1 km radius of the application site. There are also no recorded pollution incidents to controlled waters and/or substantiated pollution incidents attributable to the site, or within a 250 metre radius of the site.

3.6.4.2 Flood Risk

The most severe risk of flooding is likely due to high tidal levels, however the EA flood maps for planning do not differentiate between fluvial and tidal flooding. The EA flood zone mapping indicates the four areas of the application site within flood zones 1 to 3 as follows:

- West wharf: predominantly flood zone 3;
- South wharf: predominantly flood zone 2;
- East wharf: predominantly flood zone 1, with small areas of flood zone 2;
- North wharf: predominantly flood zone 1, with some areas of flood zone 2.

It is also noted that the adjacent Regent Road is also shown as Flood Zone 1.

The Environment Agency's online geo-spatial records do not show the application site to have been subject to historic flooding. The closest record of historic flooding, according to the data, is approximately 3 km north-west of the site.

APPLICATION SITE & PROPOSED DEVELOPMENT

The Environment Agency Long Term Flood Risk mapping delineates risk from pluvial sources (i.e. flooding caused by rainwater exceeding capacity of drainage systems). The mapping identifies the northern part of the application site to be at Very Low risk of pluvial flooding and land in the south and west of the site to be at Medium or High risk of such flooding. However, the EA’s modelling is based on bare earth topography derived from LiDAR data, which, is shown to be inaccurate at this location. Environment Agency mapping indicates that the application site is not at risk of flooding as a result of reservoir failure.

There are no known records of groundwater flooding in Liverpool.

Further information on flood risk and drainage is contained within the Flood Risk Assessment (including SUDS Assessment and Drainage Strategy), provided in Chapter 11 Water Resources & Flood Risk and Appendix 11.1 in ES Volume III.

3.6.5 Townscape & Heritage Designations

3.6.5.1 Heritage Designations

BMD is situated within the Liverpool Maritime Mercantile City World Heritage Site (WHS), close to the northern extent of the designated site. The WHS’s Outstanding Universal Value (OUV) is connected to its development as one of the major trading centres globally in the 18th – 20th centuries, including the place where innovative technologies and methods in dock construction and port management were developed.

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

The site also lies within the Stanley Dock Conservation Area, designated as a system of interlinked wet docks which represent the culmination of Jesse Hartley’s development of dock design, and is an important component of Liverpool’s historic dockland, characterised by massive warehouses, walls and docks, but also by smaller structures such as bridges, bollards and capstans.

Further information on the heritage designations in the area surrounding the application site is contained in Chapter 18 Built Heritage and the Heritage Statement, provided in Appendices 18.1, 18.4 and 18.5, ES Volume III.

3.6.5.2 Townscape Designations

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

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

At a local level, there is no landscape/townscape character assessment for Liverpool city centre.

3.6.6 Further information on the townscape character is contained in Chapter 17 Townscape & Visual and Appendix 17.1, ES Volume III.

3.6.7 Biodiversity

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

- Liverpool Bay/Bae Lerpwl Special Protection Areas (SPA) (Ref. UK9020294A);
- Mersey Narrows & North Wirral Foreshore Ramsar Site (Ref. UK11041);
- Mersey Narrows & North Wirral Foreshore SPA (Ref. UK9020287);
- Mersey Narrows Site of Special Scientific Interest (SSSI) (Ref. 1056551);
- Dee Estuary Special Area of Conservation (SAC); and
- Ribble and Alt Estuaries SPA and Ramsar site.

In addition to the above, although not initially highlighted by NE as a site to be considered, the Mersey Estuary Ramsar site has also been included within Biodiversity assessment as it shares the same boundary as the Mersey Estuary SPA.

There are several non-statutory sites within 2km of the application site. These include:

- Leeds-Liverpool Canal- Liverpool Local Wildlife Site (current and proposed extension);
- Melrose Cutting- Liverpool Local Wildlife Site;
- Everton Park Nature Garden- Liverpool Local Wildlife Site (Potential);
- Everton Quarry, Mark Street- Liverpool Local Geological Site; and
- Netherfield Road North, Everton- Liverpool Local Geological Site.

The application site does not support any habitats of conservation importance and is unlikely to support any important plant communities.

There are potential for bats to be roosting in the Hydraulic Tower and birds nesting, particularly feral pigeons, on the application site; however, no other protected species are expected to be present.

Overall, the application site is considered to be of low ecological importance.

Further information on the ecological baseline is contained within Chapter 12 Terrestrial Ecology, Chapter 13 Aquatic Ecology and in the Ecological Survey reports, provided those respective chapters’ appendices in ES Volume III.

3.6.8 Air Quality

The whole of the City of Liverpool was declared an Air Quality Management Area (AQMA) for exceedances of both the short and long term NO₂ national Air Quality Objectives (AQOs) in 2009.

Liverpool City Council (LCC) operates a network of passive diffusion tubes. The closest diffusion tube is diffusion tube N20, which is located adjacent to Blackstone Street, approximately 221 m east of the application site. Data for this location is summarised in Table 3.1 below.

APPLICATION SITE & PROPOSED DEVELOPMENT

Table 3.1
Predicted Background Pollutant Concentrations

POLLUTANT	PREDICTED 2019 BACKGROUND CONCENTRATION (Mg/m ³)
NO ₂	18.93
PM ₁₀	10.47

The published background Air Quality levels show that the background levels are predicted to be below the relevant AQO within the study area. The relevant Air Quality study area is defined within Figure 1, Appendix 8.1, ES Volume III). Further information on the current air quality conditions at the application site and in the surrounding area is contained within the Air Quality Impact Assessment, provided in Chapter 8 Air Quality.

3.7 THE NEED FOR DEVELOPMENT

Everton were one of twelve founding members of the Football League in 1888 and Goodison Park has been home to Everton Football Club for 124 years since opening in 1892, remaining one of the oldest purpose-built football grounds. Goodison Park has a capacity for 39,572 spectators maximum (with further reductions anticipated) making it the 12th-largest league stadium in England. It not only falls behind the stadiums of many similar clubs in terms of ground capacity, but also in terms of the quality of its facilities.

The vision is not a new one, and indeed Everton has been looking for an alternative site for some time with initial discussions about the limitations of Goodison and the need to consider a move dating back to before 2000.

3.7.1 Limitations of Goodison Park

The challenges of Goodison Park have long been recognised. Its age, size and configuration restrict commercial growth and the Club has previously explored the potential of developing and extending existing stands on the same footprint. Redevelopment on site, including expansion of the seating bowl and corresponding expansion of concourses and amenities to accommodate any additional capacity, is not practicable due to land ownership constraints and proximity to existing housing. Further, any expansion of the current plot in which Goodison sits would require relocation of roads and acquisition of residential and civic properties, materially impacting the local community and resulting in a new site for which the same inherent site circulation and area constraints remain.

Following changes to stadia safety legislation in the 1990s, and due to general ageing of the facility, Goodison Park has fallen behind the standards of modern comparable facilities in terms of accessibility, fan experience, and commercial viability. Goodison's current facilities require

significant maintenance costs to remain fit for purpose, a condition exacerbated by existing site and infrastructure constraints that limit the scope of potential redevelopment to modern standards.

The overall capacity of the Goodison's seating bowl is subject to downward pressure as a result of ongoing efforts to improve and expand the accessible seating provision as set out in the Accessible Stadia Guide (ASG), which the English Premier League (EPL) committed to implementing in 2015. Per ASG guidance, 207 wheelchair positions should be provided at Goodison, with 75% of those positions located in elevated positions and within 40m of accessible toilet facilities. By 2017, Goodison provided 121 wheelchair seats meeting ASG criteria, with existing bowl and structural constraints making additional seats increasingly difficult to add. Further works have been undertaken since 2017 in order to meet the standards imposed by the ASG; however, the complex nature of the stadium has made it extremely difficult for the Club to fully meet ASG and Equalities and Human Rights Commission ("EHRC"). Whilst the Club is currently legally compliant, the stadium still does not provide appropriate proximity to WC facilities for wheelchair positions, sufficient numbers of elevated positions or accessible positions in all stands around the ground (with no elevated positions in the Bullens Road or main section of the Gwladys Street Stand). Given the constraints of the stadium, infrastructure issues at Goodison Park will continue to restrict the ability of the Club to continue to meet future accessibility requirements and has come at a significant capital expenditure cost the Club.

Approximately 53% of the stadium capacity - almost 21,000 seats - have an obstructed view of the pitch, most commonly in the form of structural posts supporting a tier or roof above. Of these seats, more than 8% - over 3,000 seats - have an obstructed view of the goal area. Seating terrace tread depths and seat spacing dimensions are generally narrow, and seats themselves are of lower quality in comparison to those of modern standards.

Corporate hospitality facilities are insufficient to meet current demand, both in the quantity of seats and quality of accompanying facilities. In particular, Goodison features a shortage in the number of executive boxes and dedicated amenity areas. In comparison to the executive and corporate seating offer at the stadia of other peer clubs, the lack of an equivalent hospitality offer at Goodison, together with an inability to expand this offer due to bowl constraints, represents a lost revenue opportunity.

The media facilities at Goodison, including gantry, camera positions, commentary positions, press box, television studio, and interview areas, are below the current specifications of EPL and the Union of European Football Associations (UEFA) and constrained from expansion. As the most watched sports league in the world, the Premier League offers unique commercial opportunity to its clubs by way of its broadcast reach, as well as exposure by association to the communities in which those clubs are based.

Broadcast revenues are shared amongst clubs through a system in which equal sharing is supplemented by weighted 'merit payments' based on league position, and 'facility fees' based on the number of a club's matches chosen for live broadcast at the discretion of rights holders. In this context, clubs are incentivised to provide state of the art stadium broadcast facilities, in addition to fielding competitive squads to grow their commercial profiles and promote their respective home cities across the globe.

The capacity of Goodison continues to grow at a lesser rate compared to the capacity of other peer clubs. From 1996/1997 to 2007/2008, over 130,000 additional seats were added to Premier League stadia, an aggregate increase in capacity of 23%. By contrast, the capacity of Goodison Park during this period increased only 2%, from 36,186 to 36,955. In November 2019, the Club had a Season Ticket waiting list of 8,677 individuals, who had requested a total of more than 11,000 tickets¹.

1.1 Options have previously been considered to extend Goodison Park by increasing the capacity of existing stands. This has included considering additional tiers, including at the Park Stand and the Bullens Road Stand, which would require an extended footprint that would result in the encroachment onto Bullens Road and adjacent houses – requiring acquisition of residential properties.

1.2 The expansion or redevelopment of Goodison Park is not realistic, practical or deliverable to meet the needs of Everton. Whilst some modest expansion of the stadium may be feasible, it would not deliver the capacity, benefits or amenities that the Club requires to remain competitive.

In addition to the loss of revenue and operational impact to the Club from playing at Goodison during a partial or phased redevelopment, or from having to relocate matches for a minimum of two seasons during a full redevelopment, any expansion of existing seating tiers would not address critical shortcomings to existing stadium infrastructure or site access. Within the stadium, these shortcomings include poor sightlines, narrow concourses, inadequate accessible accommodation, lack of integrated technology and communication systems, and general ageing of facilities; surrounding the stadium, these shortcomings include lack of open space for crowd marshalling and restricted circulation around the site.

Therefore, the Club has recognised that an increase in stadium capacity will require a move from the existing Goodison Park. A site search has shown there are no other suitable alternative locations, with BMD identified as the only site that meets the Club's criteria for a new stadium. BMD provides an opportunity to meet the future needs of the club and its supporters, without moving far from its roots in the local community.

A stadium capacity increase, together with expanded amenity spaces and the ability for elements of the stadium to operate commercially on non-matchdays, are vital to create a competitive financial platform for the Club.

¹ Everton season ticket waiting list, November 2019

APPLICATION SITE & PROPOSED DEVELOPMENT

3.8 THE PROPOSED DEVELOPMENT

This application seeks permission for:

‘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); 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).’

3.8.1 2020 Design Revisions

As discussed in Chapter 2 (EIA Methodology), ES volume II, following submission of the initial planning application in December 2019 (reference 20F/0001), a number of amendments have been made to the proposed development. These amendments are set out in the sections below.

3.8.1.1 West Terrace

The revised scheme features a new elevated fair-weather terrace on the west side of the stadium, replacing the Multi Storey Car Park (MSCP) which has been omitted from the design. It provides a covered fan zone below to ensure the safe arrival and departure of spectators and building users during periods of high winds.

The West Terrace offers sweeping views of the Mersey and Liverpool and is a potential end to the planned River Walk through the Liverpool Waters scheme to the south. It is anticipated that the West Terrace will be open to the public on non-event days and is a major new public space along the Mersey waterfront. Visitor lift access will be provided from the stadium to ensure inclusive access.

3.8.1.2 Rationalisation of Wind Mitigation Measures

The previously submitted scheme featured many large (circa 12m high) wind baffles and screens that stood like outriggers from the main stadium building. As a result of the West Terrace redesign and option testing

Computational Fluid Dynamics (CFD) wind modelling, the largest of these wind baffles/screens have been removed from the scheme and replaced with groves of trees with associated seating.

The removal of these structures provides additional amenity and places of character from which visitors can appreciate the views of central Liverpool, the World Heritage Site (WHS), Stanley Dock Conservation Area and the river waterfront setting.

3.8.1.3 West Quay

The western-most part of the site, referred to as the west quay, has been reconfigured with a smaller substation building from the previously submitted design, which has been moved from the southern area of the western quay to the north-west corner of the site.

Following consultee feedback, the canopy over the surface car park in the previously submitted scheme has been removed and the photovoltaic solar panel array (PVs) has been moved to the top of the main stadium roof (south stand). The removal of the canopy now permits views from the West Terrace out to the Mersey and the Irish Sea.

This new open area provides flexibility for a number of uses. It can be used as event-day parking, turned over for a match-day outdoor broadcast compound, host a public event like a festival, or allow pop-up uses like a summer market.

3.8.1.4 Massing

The removal of the MSCP on the west elevation of the stadium allowed for the adjustment of the building massing and internal space planning so that it is now symmetrical when seen from the south through the wider WHS.

The changes to the stadium massing are most clearly seen on the west elevation of the stadium, where the MSCP has been replaced by the stepped West Terrace. The steps link the building to the water channel. A new glazed portal features centrally on the west stand, providing the hospitality spaces within views of the Mersey and the Wirral. This is constructed from the same black metal cladding of the east stand portal that houses the Club retail shop.

The proportion of the curved metal roof and the rectangular brick box has changed slightly in the revised design, with the east elevation of the stadium having stepped east by 4.5m to accommodate the changes to internal space planning. This movement 4.5m east has also resulted in the stadium foundation design having been updated to ensure no physical impact on the existing Grade II listed BMD dock walls.

Minor adjustments to the design of the roof have reduced the overall height of the building to fall below 45m, meaning the scheme is now classified as a “mid-rise building” within the LCC World Heritage Site Supplementary Planning Document (SPD).

3.8.1.5 Simplified Façade

The LCC Urban Design officer and the Places Matter panel both commented that the previously submitted scheme elevations appeared too busy. In response, the design team has simplified the building façade in close consultation with LCC and HE. This has included:

- The distinctive Leitch Truss pattern has been adjusted for better legibility.
- The Leitch Truss pattern now appears only in the brickwork, and not in the metal panels or glazing.
- Removal of the thinnest brick piers to give the project a more solid presence in line with the warehouse setting.
- A preferred brick has been selected and a mock-up is installed on site for review of the brick panels.
- The East Stand openings have been reduced to one glazed portal.
- A new large glazed portal has been introduced to the West Stand.

3.8.1.6 Public Realm

The new West Terrace is situated between the west public realm and the stadium itself. As an elevated terrace, it features similar surface materials to that of the ground level to establish it as an extension of the public realm. Similarly, the reconfigured west quay has enabled a selection of finishes that will support the multi-use, flexibility of this space.

The outrigger wind baffles have been replaced by a grove of trees that feature some seating beneath them. This improves the overall provision for seating, especially along the south concourse overlooking Nelson Dock and the wider WHS and Stanley Dock Conservation Area.

Other detail developments, for example the materiality of the dock infill paving, have also been developed with input from the appointed contractor Laing O’Rourke. Further work has also been undertaken to catalogue, assess, and identify the further works required to repair or re-purpose existing maritime heritage artefacts (capstans and mooring bollards) as part of the proposed public realm.

In addition, through consultation with LCC and HE, the overall size of the new openings through the Regent Road wall have been reduced. These have reduced by approximately 25m, and now stand at a total opening of 24.45m combined.

3.8.1.7 Inclusive Design

The design has also been revised to ensure inclusive design is considered throughout. The revised scheme features the following improvements over the previously submitted scheme:

- A greater number of wheelchair seating positions.
- Accessible amenity seating identified in the seating bowl.

APPLICATION SITE & PROPOSED DEVELOPMENT

- Additional toilet facilities, including gender neutral toilets and more changing places facilities.
- Lift access to the West Terrace.

3.8.2 Description of the Proposed Development (2020 Revised Scheme)

The following sections describe the various elements of the revised 2020 scheme that are relevant to the assessment of its environmental effects. Further detail is provided in the Planning Statement and Design & Access Statement, which both accompany the planning application, as well as the Transport Assessment and Drainage Strategy, which are provided in Appendices 7.1 and 11.4 in ES Volume III respectively.

3.8.2.1 Site Layout

The proposed development comprises the stadium, located mostly within the infilled section of the waterbody of BMD. The foundations of the stadium and all other proposed structures have been designed to ensure that they do not conflict with the listed retaining walls of either Nelson Dock or BMD.

A large area of public space is proposed to the east, which is to be used as a fan zone plaza on match days, when it will be occupied by temporary structures associated with fan entertainment and the match day experience.

The north-east corner of the site is occupied by the Hydraulic Tower. A Security Both and barrier are located close to the Hydraulic Tower, near to the north-east vehicular entrance to the site.

To the west of the proposed stadium lies a water channel, which is designed to ensure the visual continuity of the dock system remains. The channel is not navigable due to the existing isolation structure on the southern site boundary with Nelson Dock, and the new isolation structure proposed at the boundary between BMD and Sandon Half-Tide Dock. The channel is an interpretive feature proposed in recognition of the site's heritage.

A stepped area of public realm is located on the eastern side of the channel to allow people greater access to the water's edge and the listed BMD retaining walls. This stepped area continues up to the west elevation of the stadium creating the West Terrace area which is a key feature of the Public Realm. The raised vantage point gives views of the River Mersey and increases the visual and physical connections between the building and the water channel. The terrace will be open to the public year-round except during high winds, with access from Regent Road via the east Fan Plaza.

The West Terrace is aligned with Level 01 of the stadium building so the upper level can be used as an outdoor break-out space for the hospitality lounges on Match Days or when they are used for events such as conferences on non-match days. Step free access from the covered Fan Plaza is provided via the lifts at either end of the terrace, just inside the stadium facade. Lift access to the top of the terrace will be available on match days and non-match days. At the north and south of the terrace, there are larger areas which could be used for pop-up concessions. The

stepped terrace offers a seating area for visitors and can be utilised for watching big screens or art installations on the west quay or water channel.

There are three openings along the length of the West Terrace. The central opening marks the player's drop off and entrance to the changing area. The two openings either side of this allow direct access to the firefighting cores from fire tender parking positions in the west. The openings will typically remain open except in high winds, when it is necessary to enclose the covered concourse and restrict public access to the west quay and onto the terrace steps. This will be achieved with porous metal gates, leaving the spectators entrances to the north and south open to access the covered Fan Plaza and building entrances only.

On the western quay, to the west of the water channel, an enclosed area of storage, predominantly for the pitch grow lights, and a Distributed Network Operator Compound are proposed. Adjacent to this is an area of surface car parking.

An access route is marked around the site through the use of hardstanding in the public realm, guiding cars around the periphery of the site, predominantly in an anti-clockwise direction from the north-east corner of the site at the vehicular entrance through the Regent Road dock wall, through the site to the south-east entrance.

3.8.2.2 Stadium

The proposed stadium building is orientated in a North-South position. It comprises four stands (North, East, South and West) and will have a seated capacity of 52,888 people.

There are three levels of stadium accommodation, including Back of House, General Admission, Hospitality, Catering areas, Media, Medical, Parking, Plant & Risers, Player areas, Retail areas, Security and other Stadium Facilities. The fourth level contains mechanical equipment and plant, enclosed by a screen.

The Hospitality and GA concourse areas include toilets, food & beverage sales points and other retail areas.

Hospitality areas are located within both the East and West stands. Of the 52,888 seats, around 5,000 are hospitality seats. The Away fans section is located at the north-east corner of the stadium.

Of the 52,888 seats, 278 are proposed to be wheelchair accessible viewing positions.

Additional proposed facilities include faith rooms, incorporating separate-sex prayer facilities, a sensory room with a view of the pitch and two additional quiet rooms.

The general arrangement plans for the scheme are included in Appendix 3.1.

The proposed maximum height of the stadium is 52.050m metres AOD (44.75m from Finished Floor Level). To the top of the bowl, the proposed height is 36.135 mAOD.

The stadium façade comprises two distinct sections: a barrel roof formed of metal panels (with varying degrees of perforation density) and a solid base made of brick and metal. The base of the stadium comprises alternating columns of perforated metal façade panels with brick pilaster with a textured waterstruck style brick blend of various red tones. The bricks will be laid in Flemish bond using Parex Historic Mortar, natural in colour. The proposed design includes a pattern to represent the criss-cross steelwork used by original Goodison Park architect Archibald Leitch. This will be included across the base of the stadium (in the brick piers only).

The areas of glazing are contained in the east and west Portals, the Level 03 accommodation (which is above the top of the brick base) and the protruding south balcony..

3.8.2.3 Fan Plaza

On a matchday, the primary space for fans to gather will be the fan plaza which is located to the East of the stadium in-between the stadium and the Regent Road Dock Boundary Wall at the perimeter of the application site on Regent Road.

There is the intention to provide a number of elements in the public realm to enliven the match day experience. This includes:

- A Stage –This structure will include an elevated platform and an overhead canopy. An unobstructed space to the south of the stage will allow supporters to gather and watch the entertainment on the stage. Steps and ramps up onto the stage are to be designed in accordance with current standards.
- Canopies – offering shade and shelter to groups of supporters. There will be additional temporary seating and tables under these canopies.
- Temporary concession stands –vendors that will be driven/moved into the fan plaza on match days.
- Game venues – Flexible family interactive game facilities such as 'Beat the Goalie' and five-a-side football penalty kicks.
- Gaming Tents – similar to the canopies, these covered structures will offer opportunities for fans to interact and socialise with computer games and other multimedia platforms.
- Temporary wheelchair accessible toilets on a match day located adjacent to standard toilets.
- Dog spending areas for assistance dogs. Designed according to guidance.

On a match day, the Fan Plaza will be accessible only through existing and proposed dock wall openings, and access will be controlled and managed. The plaza is split into various zones, including:

- The Infill Dock Fan Plaza – A flexible event space for gathering and entertainment.
- The Tower – A spill out space adjacent to the Hydraulic Tower with facilities associated with the functionality of this historic asset.

APPLICATION SITE & PROPOSED DEVELOPMENT

- The Quayside Fan Plaza – Pockets of human scale space for smaller groups to gather with soft landscaping, seating and references to the dockland’s heritage including railway tracks and artwork/interpretation.
- The northern concourse – Primarily a vehicular circulation corridor into the site.
- The southern concourse – Primary pedestrian / supporter movement corridor with views back to city.
- Vehicular circulation to be managed to allow closure of isolation structures (with vehicular and pedestrian links above) to prevent access to the car park prior to kick-off. Access remains restricted until vehicles are allowed off-site.
- Entertainment space and Food and Beverage provision to main fan plaza.

The main fan plaza is to remain open on non-match days, providing access around the site and to the retail store, Hydraulic Tower and flexible event space. Short stay parking would also be available to the enclosed fan zone.

3.8.2.4 Car Parking

There are two car parks incorporated into the proposed development. A small parking area (with potential to accommodate approximately 11 spaces) will be located to the east of the application site, located within the plaza which will be in operation on non-match days only. This car park will accommodate visitors to the club shop, exhibition / cultural centre, restaurants and box office. It will also be used for taxi drop off/pick up. It does not contain marked bays but instead its use will be controlled by on-site security personnel and Club staff.

On match days the small plaza parking area on the east will not be used. This space will be required for pedestrian circulation.

A surface car park will be located to the western side of the water channel on the west quay. Since the west quay is a flexible space, the parking provision varies between match days and non-match days. On match days there is space for 25 standards bays, 6 electric vehicle bays (standard); 52 accessible bays; 2 electric vehicle bays (accessible); and 4 motorcycle bays.

On non-match days there is space for 71 standards bays, 24 electric vehicle bays (standard); 52 accessible bays; 2 electric vehicle bays (accessible); and 4 motorcycle bays. The proposed accessible parking bays will be formally marked out on site; however none of the standard parking bays, or bays within the Outside Broadcast Compound will be formally marked out. Instead, vehicles using this space will be corralled into the appropriate parking area by staff on site, in order to make the most efficient use of space. The 95 standard bays will be unmarked in order to reduce the impact on the use of the West Quay as public realm, when not in use as car parking. On match days the west quay surface car park will be for the use of supporters, club directors and guests. These spaces will require pre-booking in advance of the match. On non-match days the use of the west

quay surface car park will be for staff working at the stadium and visitors to any events or conferences located within the stadium.

After consultation with LCC and through fan surveys and the Transport Assessment (Appendix 7.1), it has been agreed to provide storage for a total of 152 cycle stands with a further 60 cycle spaces identified if the demand increases in the future. Of these cycle spaces, 136 are located within the fan plaza area to the east of the stadium and 16 to the west of the stadium. Within this total number, 30 cycles will be accommodated for within a two tier shelter and allocated for staff members working within the stadium and this is located to the northeast of the fan plaza.

It is anticipated that the majority of cyclists will come via Regent Road along the recently built cycle lane. Therefore, a majority of the cycle storage facilities will be located on the inside (western side) of the dock boundary walls and adjacent to the main gateway entrances to the site.

Cyclists are also expected to arrive at the application site via the Strategic River Walk leisure route which will extend along the entire western edge of Liverpool Waters (to be delivered as Liverpool Waters develops). Should cyclists choose to dismount and store their bikes along this western edge then there is provision for free standing cycle stands within the seating zones to the northeast and southeast corners of the west quay surface car park.

3.8.2.5 Access

The site access strategy has been developed to meet the varying demands that will occur at the stadium on non-match days and across all stages of the match day (pre-match, during-match and post-match).

At all times, security and management staff will be present on site to guide and advise vehicles as appropriate. A system of bollards and barriers will be in place so that vehicles are confined to the appropriate routes.

Match Day

A system of road closures will be in place on match days restricting movement on surrounding streets. As a result, team coaches, supporter and staff vehicles will need to arrive at the site at least one hour before kick-off. Only emergency vehicles will be permitted in and out of the site following one hour before kick-off.

Supporter and staff vehicles will enter the site from the north east corner access. Team coaches will enter the site via the north east corner access. Team coaches will park within designated areas of the site. Pedestrians will enter the site via the existing and three new proposed openings in the Regent Road Dock Wall. Cyclists will be asked to dismount before proceeding through the Dock Wall for safety reasons.

During the match, with the external road closures in place, only emergency vehicles will be permitted in and out of the site and supporter and staff vehicles will only be permitted through the road closures in emergency circumstances.

Post-match, pedestrians will exit the site via the existing and three new proposed openings in the Regent Road Dock Wall. No vehicles will be

permitted to exit the car park until crowds have dispersed from the area and it is safe for vehicles to egress. Road closures will remain in place on the streets outside the stadium for between 40 minutes and 1 hour after the final whistle.

Supporter and staff cars and coaches will all exit the site via the north eastern and south-eastern vehicular access. All outside broadcast compound vehicles will exit via the south eastern vehicular access.

Non-Match Day

Vehicular access to the small parking area on the plaza will be available via the existing Regent Road openings at the north east corner of the site. Only visitors to the club shop, exhibition / cultural centre, restaurants and box office will be permitted to use this car park.

Servicing vehicles will use the existing access in the north east corner to enter the site. For egress from the site, servicing vehicles will use the south east exit point. All staff and attendees to conferences and events will enter the site using the north east access. For egress, staff and attendees will use the south east exit point. Vehicles dropping off and picking up on the western side of the stadium will also use the same route.

Pedestrians and cyclists will be able to use any of the Regent Road Dock Wall openings to access and egress the site.

3.8.2.6 Hydraulic Tower

As a heritage element unique to Bramley-Moore Dock and the wider Public Realm, the Hydraulic Tower is vital to the long-term redevelopment of the North Docks area. Once the Hydraulic Tower is made safe for the purposes of surveying the building, additional structural surveys are required before any repairs are undertaken. This work will be the subject of future listed building consent applications, if required.

The Hydraulic Tower is an anchor element to the public promenade envisioned along the River Mersey through the planned Liverpool Waters development. The Hydraulic Tower 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 Hydraulic Tower contributes to the year-round usage of Bramley-Moore Dock.

Out of deference to the Hydraulic Tower, the stadium is positioned at a remove, so that the complementary brick aesthetic of the stadium does not compete with that of the Hydraulic Tower. In its current location at the north of the east entry plaza, the Hydraulic Tower acts as a bounding element to the open space of the east plaza and allows for circulation around it as required for stadium events.

3.8.2.7 River Walk

As part of the Liverpool Waters permission (LPA ref. 10O/2424), Peel L&P were required to provide three walkways through the proposed development. One walkway is referred to as the Merseyview Esplanade and

APPLICATION SITE & PROPOSED DEVELOPMENT

runs north-south through Liverpool Waters on the western boundary, adjacent to the River Mersey.

The proposed development at BMD has taken account of the intention for a Liverpool Waters wide route by creating a River Walk along the western boundary of the application site, sheltering people from the prevailing winds. Pedestrian access to the top of river wall, which is outside Everton's ownership, will be restricted through interpretation fencing panels. This route leads to the north-west corner of the site and then travels eastwards, along the northern edge of the proposed stadium, to the Hydraulic Tower, as the intended start or end point of the route. An alternative, and more attractive route, will be to cross the southern isolation structure and proceed along the southern elevation of the stadium, through the fan plaza and ending at the Hydraulic Tower. The proposed West Terrace adds a significant new area of civic space and resting area along the River Walk.

The proposed pedestrian routes across the site therefore allow for future connectivity with Nelson Dock and for this part of the pedestrian access to be linked to the wider Merseyview Esplanade, when Liverpool Waters is developed further.

3.8.2.8 Water Channel

A key heritage component is the retention of a meaningful 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 existing southern isolation structure is constructed out of two sheet piles with two horizontal ties at -1.5mOD and +2.5mAOD. Eight pipes with a crown at +4.05mAOD and bottom level at +3.45mAOD 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. Eight 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 water channel bed is designed to be 0.5m below the bottom of the pipes (+2.9mAOD) to ensure any silt build up does not restrict the flow of dock water through the pipes.

The exposed 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.

3.8.2.9 Landscaping and Public Realm

On non-match days, the site will become publicly accessible as people are allowed and encouraged to access and move around the perimeter of the stadium and the site. Once Liverpool Waters and Nelson Dock specifically

is developed, the south west and south east corners of the site will also have gateways to allow pedestrian and cycle movement through including the strategic River Walk to the western edge, with the walk either terminating or starting at the Hydraulic Tower.

The landscape masterplan aims to ensure the correct balance is achieved between the practicalities and functional requirements of a stadium and the respectful heritage conservation of the site's setting. The landscape masterplan is split into the following zones, which have been updated to align with the revised 2020 design:

- **Fan Zone Plaza:** The primary public space on the Eastern side of the stadium predominantly remains the same although with the footprint of the stadium moving by 4.5m east, this space has reduced in size slightly since the 2019 application submission. The focus and spatial arrangement in terms of being a place where people can gather, socialise and enjoy a range of activities as well as the setting of the stadium and Bramley Moore Dock Heritage remains the same.
- **Southern Concourse:** The removal of the large wind baffle structures to the South West and South East corners is the main change to the Southern Concourse. Replaced with two copses of trees provides a much softer look and feel whilst still retaining the necessary wind mitigation..
- **Western Quayside:** the west of the water channel will incorporate the main functional aspects of a stadium site including DNO Substation and storage, the Outside Broadcast compound on match days and the surface car parking. To the Southern end will be the River Walk Gateway space which will be a transition space between Nelson Dock and BMD for the wider strategic Liverpool Waters River Walk. Northern Concourse: The primary vehicle route into the site from the northern gateway with a direct link to the Western Quayside and Western Terrace remains the same as before with some changes in materiality to make it more functional.
- **West Terrace:** The previous MSCP has been replaced by a large plaza which includes seating terraces and steps to access the upper Level 01 Terrace where there will be elevated views across the Mersey as well as down to the waters edge with slopes down to a lower decked space by the water channel. An accessible route underneath the West Terrace takes pedestrians to the western side of the stadium. The team coach will drop off in the centre with direct access to the hospitality entrance.
- **The Tower:** Hydraulic Tower forms a focal point for the Fan Zone Plaza on match and non-match days.

The soft planting proposals for BMD are focused around the fan plaza and south of the stadium as this area is more sheltered and will encourage tree growth.

3.8.2.10 Surface & Foul Water Drainage

Surface Water Drainage Strategy

The detailed design for the proposed surface water drainage strategy for the site will be designed with the CIRIA SuDS manual.

Due to the historic nature of the application site and the need to retain the existing BMD dock walls, discharge via infiltration is not deemed feasible.

The site is located on the banks of the River Mersey and the proposals include surface outfalls to a proposed channel that is linked to the River Mersey via the wider dock network, controlled by Peel. As such this option for discharge can be utilised. Where water is clean, it can be discharged directly over the harbour wall edges (as per the existing situation), into the surrounding dock. Where treatment is required, water will pass through suitable cleansing systems prior to discharge to the channel.

The water channel on site will serve as a retention pond and deliver a benefit to water quality by settling out silt and trapping floating debris before discharge to the wider dock network. No attenuation is needed so the feature has uncontrolled discharge to adjacent docks.

There are two areas that are deemed a medium pollution hazard level as defined by the CIRIA SuDS Manual. These areas are proposed to be discharged to the foul water system, including:

- **The pitch –** This has its own pumped drainage system and will contain fertilisers in the run-off. As such this will be discharged to the foul water network; and
- **Service/Delivery area –** This zone will have HGVs parked up and manoeuvring. The area is covered and therefore run-off will be limited to wash-down and small volumes of wind driven rain. This increases the possibility of run-off becoming contaminated and therefore it is intended this zone is drained to the foul water network.

The rest of the areas around the proposed development are considered to be low risk on the pollution hazard index. The treatment to these areas is to be provided via a proprietary system (a Downstream Defender) installed immediately upstream of the outfalls.

Site Drainage Catchments

The site catchments have been split to suit the layout of the site and avoid having to pass large diameter pipes through the historic dock retaining walls that are being left in situ and undisturbed.

The northern portion of the stadium roof, section of access road adjacent to this portion of roof (up to the new isolation structure) and the western and south western portions of the fan zone area (that drain to channel drains) form one catchment. This catchment is collected by a network that runs around to the north of the site, under the access road, heading west, before passing through a downstream defender unit and discharging, via a new outfall, under the proposed northern isolation structure.

The second major catchment takes the rest of the roof area and the rest of the fan zone area to the east. This catchment is collected by a network that runs under the pitch itself before passing through a downstream defender unit and discharging, via a new outfall, through the new wall forming the water channel.

APPLICATION SITE & PROPOSED DEVELOPMENT

There is a section to the south of the stadium that will drain south over the edge of the existing harbour wall into Nelson Dock. This will largely consist of wind driven rain, as the roof extends out over most of this area. It is proposed that the gravity roof downpipes serving the lower roof, below the main roof structure, are discharged directly to the external finishes. There is minimal flow expected from this undercroft roof as it will be protected by the main stadium roof above.

The final catchment is the area to the west of the site. This area comprises a surface level car park. To the north is a building housing a DNO Compound with an area for grow light storage to the north. The surface level car park, outside broadcast compound (to the south) and some re-graded areas of this zone will be directed to new channel drains (or existing gullies). Flows will then be collected in a below ground network and combined at a single manhole, prior to passing through a 'Downstream defender' unit and discharging into the water channel via an outfall through an existing penetration of the listed dock wall.

There are some small areas around the eastern part of this zone that will drain over the existing dock wall edge into the water channel. The area to the west of the car park already slopes towards the River Mersey wall where a number of large existing gullies will collect the flows. These discharge into Nelson Dock.

The water channel that separates the main stadium from the car park is already connected to Nelson Dock to the south, via the existing southern isolation structure. This has a number of pipes passing through, each has a penstock control. To the north a proposed new isolation structure will also have large diameter pipes connecting through to Sandon Half-tide Dock with no flow controls. This will allow free movement of water into Sandon Half-tide Dock at all times and into Nelson Dock when required by Peel.

In extreme events there is a possibility of wave overtopping occurring over the existing River Mersey wall to the west of the site, affecting a zone running parallel with the wall and extending 15m back from the Riverside face. This scenario is discussed in more detail within the Flood Risk Assessment, including proposed mitigation measures.

The total peak volume for the 1 in 200yr overtopping event (including climate change allowance) has been calculated within the Flood Risk Assessment (FRA). An extreme worst-case scenario of all surface water drainage being blocked has been assumed. The levels are designed such that water can only reach a maximum depth of 200mm within the surface car park, before overflowing to the water channel. This ensures the risk to the public is low (based on a low hazard rating from 'Flood Risk Assessment Guidance for New Development' (FD2320 and FD2321) and is below the 300mm threshold level where vehicles can start to be moved by flood waters, as advised by Planning Policy Statement 25 (PPS25) guidance (it is noted that this planning guidance is now superseded, however this specific depth requirement is not specifically addressed in the NPPF).

3.8.2.11 Waste Management

The Operational Waste Management Strategy is presented in Appendix 3.2, ES Volume III. This describes in detail how waste generated from the proposed new stadium at Bramley-Moore Dock and its associated public realm will be managed once the development becomes operational.

The stadium will be at its busiest on a match day and it is at these times that most waste will be generated. In total, it is estimated that approximately 16,700kg of waste will be produced when the stadium reaches maximum capacity.

The strategy has been formulated with the guiding vision of ensuring efficient, sustainable and safe waste management operations. In line with this, waste will be segregated at source into a number of streams. As a minimum, residual waste and mixed recyclables will be separated, although some areas will also segregate glass and organic waste.

The provision of intermediate waste storage rooms in various locations across the stadium will also improve the efficiency of waste management operations. These rooms will be located in close proximity to those areas that generate the most significant quantities of waste (e.g. the GA concourses) and will enable waste to be held locally until the fan circulation areas are less congested. Wherever possible, the intermediate stores have been sized to provide sufficient storage space for waste to be held locally for the duration of a match. When fans have left the venue, bins will be moved down to the central waste and recycling area via the nearest lift.

Residual waste and mixed recyclables will be stored in portable compactors in the central waste and recycling area, with an approximate capacity of 20m³, while glass and organics will be stored in 240 litre bins. A hook-lift truck will be used to collect each of the compactors, while the 240 litre bins will be collected by a small refuse vehicle from the servicing route that runs parallel to the north of the stadium.

3.8.2.12 Energy Strategy

In order to comply with planning policy and achieve Key Performance Indicators established in conjunction with the Club and laid out in Buro Happold's Sustainability Performance Framework, 'mean, lean and green' energy efficient strategies have been proposed in the design. These include, but are not limited to:

- Improved thermal performance of the building envelope against minimum building regulations requirement;
- Improved glazing performance to reduce unwanted solar gain whilst maintaining the potential for daylight against minimum building regulations requirement;
- High efficiency heat-recovery devices to harness energy within exhausted air and recirculate it back into the building to reduce heating and cooling loads;
- Centralised heating plant to allow for ease of future connection to a district heat network; and

- Efficient lighting and lighting controls. LED lighting can incorporate automatic controls that respond to daylight and human presence to minimise the building's electrical lighting load.

The following green energy generation strategies have been proposed:

- Photovoltaic array mounted on surface car park canopy generating 312 MWh/yr of renewable energy (this equates to approximately 2,050m² of active PV area);
- Utilising battery storage and smart grid technologies. Battery Storage Technology has been sized to provide backup for life safety and essential loads whilst having capacity to facilitate energy market participation and perform load balancing.

The results from Building Regulations Part L calculations for the proposed development demonstrated that the above energy efficiency design strategy has the potential to reduce the regulated carbon emissions by at least 4% compared to the target notional building.

3.8.2.13 Other events

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 concerts is based on four non-football 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.

3.9 ASSOCIATED DEVELOPMENT

An area of hardstanding outside Sandhills station will be constructed to provide a suitable area for pedestrians to wait in a safe environment for trains at Sandhills in the post-match / post event period. The facility will be located on land owned by Merseytravel. It is envisaged that this would be secured via a Section 106 contribution. Other specific off-site infrastructure works currently designed as part of the proposed development include the following, which are all described in detail in the Transport Assessment (Appendix 7.1, ES Volume III):

APPLICATION SITE & PROPOSED DEVELOPMENT

- Regent Road cycle lane changes;
- New controlled parking zone (for residents and businesses);
- Minor signing and lining to re-enforce existing parking restrictions;
- Changes to bus stops and parking bays on Sandhills Lane.

In addition to the above, the proposed development would include installation of future connection points for the new electrical supplies involving installation of electrical cables from the crossroads on Great Howard Road (A565) with Blackstone Road (A5054), as well as the requirement for trenching along Blackstone Road and the recently upgraded Regent Road for cables to enter site via the southern entrance. This associated development has been considered where relevant within the ES.

In addition, on match days mini-bus services will be provided by the Club for disabled supporters to car parking (at Stanley Park car park – owned by LCC) and Sandhills station, however it is currently not anticipated that this would require any additional off site infrastructure.

3.10 WORKS CITED

1. British Geological Survey. *Liverpool. England and Wales Sheet 96. Bedrock Geology. 1:50 000 Geology series.* Keyworth, Nottingham : British Geological Survey, 2006.
2. *Liverpool. England and Wales Sheet 96. Bedrock and Superficial Deposits. 1:50 000 Geology Series.* Keyworth, Nottingham : British Geological Survey.
3. legislation.co.uk. Private Security Industry Act 2001. [Online] [Cited: 20 March 2018.] <https://www.legislation.gov.uk/ukpga/2001/12/contents>.
4. The Construction (Design and Management) Regulations 2015. [Online] [Cited: 20 March 2018.] <http://www.legislation.gov.uk/uksi/2015/51/contents/made>.